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RĪGA STRADIŅŠ UNIVERSITY

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Rīga Stradiņš University International Conference on COVID-19 "Impact, Innovations and Planning"

28 and 29 April 2022

POSTERS

Rīgas Stradiņa universitātes starptautiskā Covid-19 konference "Ietekme, inovācijas un plānošana"

2022. gada 28. un 29. aprīlī

PLAKĀTI

RSU STARPTAUTISKĀ COVID-19 KONFERENCE

RĪGAS STRADIŅA UNIVERSITĀTE

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Contents / Saturs

Acute appendicitis in patients with Delta and Omicron variant of SARS-CoV-2: case series of children and adolescents admitted to a tertiary care hospital in Latvia

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Actuality / The Goal

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has caused the pandemic of coronavirus disease 2019 (COVID-19) globally. In general, children develop milder COVID-19 disease than adults; the majority of infections are asymptomatic or manifest as upper respiratory tract infection or mild pneumonia.

Literature describing children with SARS-CoV-2 infection and concurrent acute appendicitis (AA) is growing, and understanding these patients' clinical picture is necessary for their proper treatment.

Currently, data on patients with AA and COVID-19 caused by the Omicron variant (B.1.1.529) compared with the Delta variant (B.1.617.2) are limited.

This report describes a case series of sixteen patients admitted to the Children's Clinical University Hospital (CCUH) in Riga, Latvia, all of whom were diagnosed with AA and who also tested positive for SARS-CoV-2.

Methods

This study was designed as a retrospective case study series, and all patients had a positive Delta (B.1.617.2) or Omicron variant (B.1.1.529) of SARS-CoV-2 infection and AA. Between March 2020 and March 2022, a total of sixteen children aged 3–17 years with Delta or Omicron variant of SARS-CoV-2 infection and AA were admitted to the CCUH in Riga, Latvia.

Diagnoses of acute complicated or uncomplicated appendicitis were established using local CCUH guidelines, and were treated surgically or conservatively, according to need. Clinical and laboratory data from all paediatric patients admitted with Delta (B.1.617.2) or Omicron variant (B.1.1.529) of SARS-CoV-2 infection at our hospital were retrospectively assessed using electronic medical records.

Statistical data analysis was performed using Statistical Package for the Social Sciences (SPSS) version 26.0 (IBM SPSS Corp.). Statistical significance was evaluated at the level of $p<0.05$. Differences of clinical and laboratory findings between study groups representing SARS-CoV-2 variants of interest were evaluated using Chi-Square or Fisher's exact test in case of categorical variables or Mann-Whitney U test in case of continuous variables.

This study was approved by the CCUH. Every patient (along with their parents) who was admitted to the CCUH for treatment signed an agreement (consent form) with the hospital in their first language.

Results

The 16 children ranged in age from 3 to 17 (mean age 10.73 ± 4.3 SD), 8/16 were boys. All patients were European. Six patients were infected with the Delta coronovirus variant (B.1.617.2) and ten with the Omicron variant (B.1.1.529) . Ten patients had complicated and five had acute uncomplicated appendicitis. In one case ovarian apoplexy with chronic appendicitis was diagnosed. Thirteen study patients had a documented fever >38.0 °C for ≥24 h at the time of presentation. Compared with Delta variant (B.1.617.2), children infected with Omicron variant (B.1.1.529) of SARS-CoV-2 infection were more likely to have fever ($P = 0.04$) and pain migration to right lower quadrant (RLQ) ($P=0.02$). A summary of clinical characteristics is shown in **Figure 1**. Out of the 16 patients, 68.75% (n=11) had Alvarado scores of 7 or less and 31.25% (n=5) had Alvarado scores greater than 7. Ultrasound was performed in 13 patients as first imaging. Among the complicated appendicitis patients, seven were perforated, one gangrenous, one flegmanous and one was flegmanous appendicitis with fibrine patches. A summary of laboratory findings is shown in **Figure 2**.

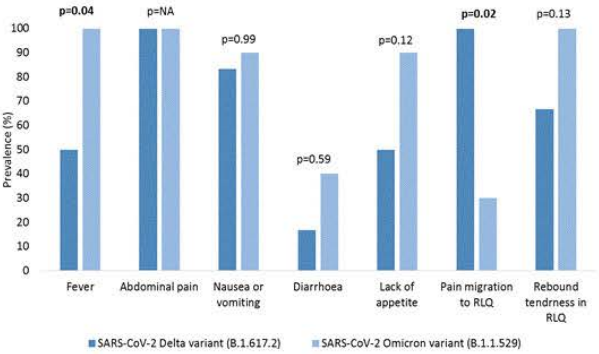

Figure 1. Clinical characteristics of patients with Delta and Omicron variant of SARS-CoV-2 infection

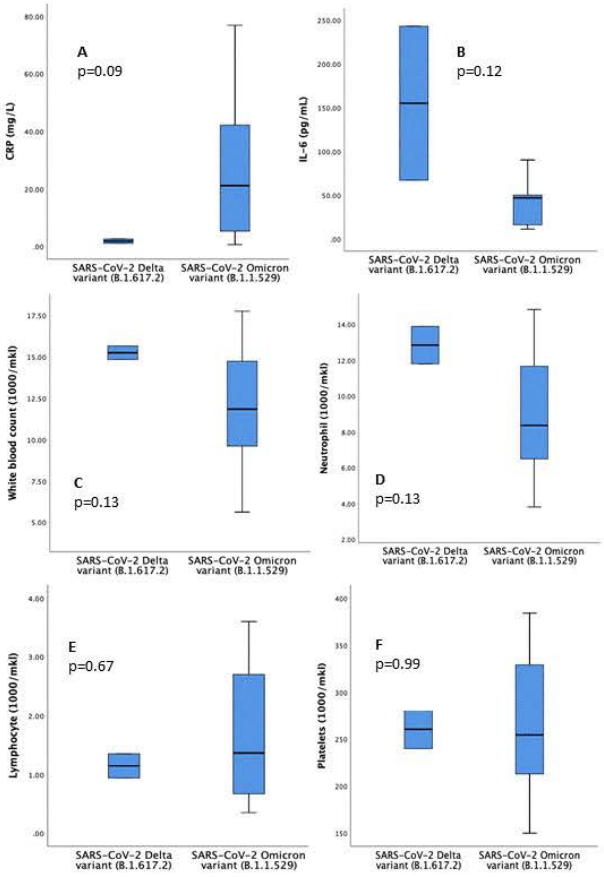

Figure 2. Laboratory markers of patients with Delta and Omicron variant of SARS-CoV-2 infection

Conclusions

Compared with Delta variant, patients with Omicron variant of SARS-CoV-2 infection and acute appendicitis were more likely to have fever and pain migration in RLQ. Further studies are needed to characterize the differences between SARS-CoV-2 variants (Delta vs Omicron) and acute appendicitis in children.

ARE CLINICAL SYMPTOMS SUFFICIENT TO DIAGNOSE COVID-19 IN PEDIATRIC POPULATION?

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Actuality / The Goal

The aim of the study was to assess weather symptoms alone would suffice to diagnose and distinguish SARS-CoV-2 infection from other febrile infections in pediatric population among admitted patients to Children's Clinical university hospital in Riga, Latvia.

Methods

Anamnesis and clinical data of 163 children admitted to the hospital with COVID-19 and with other infectious diseases were collected and analyzed, using descritpive statistics and SPSS.

Results

During the period analyzed, 54 patients were referred to the hospital with confirmed SARS-CoV-2 infection. The median age of the study group was 2.0 years (Interquartile range (IQR), 0.7–10.0 years; 53.7% (n = 29)) of patients were boys. 40.7% (n = 22) of patients had known comorbidities. Additionally, 109 comparison group patients were also enrolled. The median age was 2 years (IQR, 1–3 years), 45.9% (n = 50) were male. In this group, 13.8% (n = 15) of patients had known comorbidities. Median duration of inpatient treatment and fever was statistically significant longer in non-SARS-CoV-2 patients ($p < 0.002$; $p < 0.004$) (Figure 1).

Comparing the symptom spectrum in the COVID-19 and control group, it was evident that fever, fatique, sore throat, and gastrointestinal symptoms were more dominant in the non-SARS-CoV-2 infections group.

On the other hand, symptoms like cough, shortness of breath, difficulty breathing, wheezing, eye symptoms, and others were more commonly reported in COVID-19 group. Figure 2 represents COVID-19 and non-SARS-CoV-2 symptom distribution among study patients.

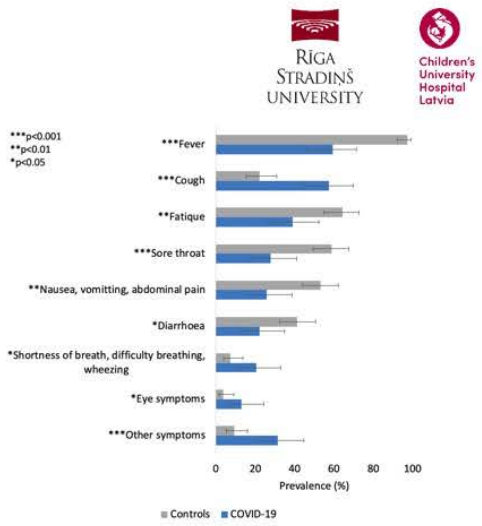

Figure 2. Prevalence (%) and comparison of acute symptom spectrum in patients with COVID-19 and other non-SARS-CoV-2 infections.

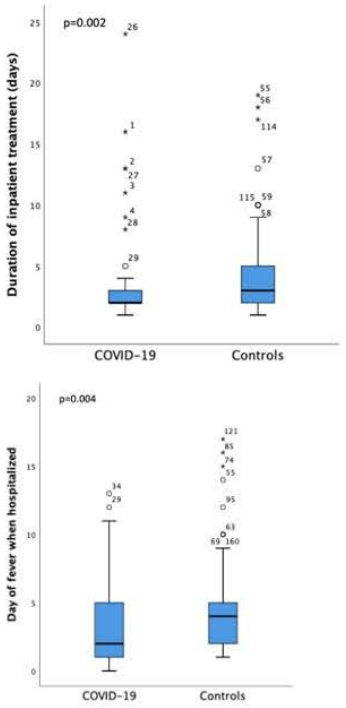

Figure 1. Median duration of inpatient treatment and fever in patients with COVID-19 and other non-SARS-CoV-2 infections.

Conclusions

There are several symptoms like fever, fatique, sore throat, and gastrointestinal symptoms more prevalent in the non-SARS-CoV-2 infections group. And other symptoms like cough, shortness of breath, difficulty breathing, wheezing, eye symptoms, more common COVID-19 group.
Further studies are necessary to evaluate the clinical significance of symptoms in diagnosing COVID-19.

Biežāk lietotie medikamenti COVID-19 simptomu mazināšanai ambulatori ārstētiem pacientiem.

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Aktualitāte / Mērķis

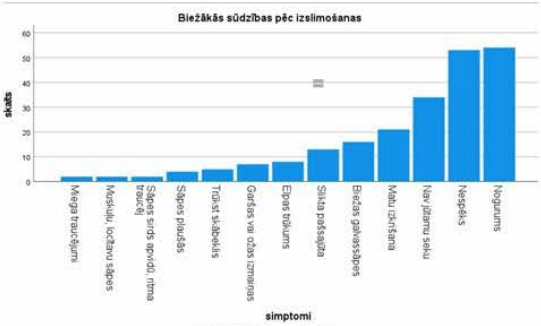
2021.gada nogalē (uz 10.novembri) Latvijā katru dienu ar COVID-19 saslima vidēji 1700 – 2000 cilvēki. No pandēmijas sākuma līdz pētījuma laikam Latvijā saslimuši 235 387 cilvēki, bet 3598 miruši.
Pasaules Veselības organizācija (PVO) un dažadas organizācijas Latvijā izstrādājušas vadlīnijas ambulatorai COVID-19 pacientu ārstēšanai. Pēc šiem dokumentiem savā darbā vadās ārsti un farmaceiti Latvijā.
Pētījuma mērķis bija noskaidrot, kādus bezrecepšu un recepšu medikamentus COVID-19 simptomu samazināšanai un ārstēšanai izmantoja ambulatori ārstētie pacienti Latvijā

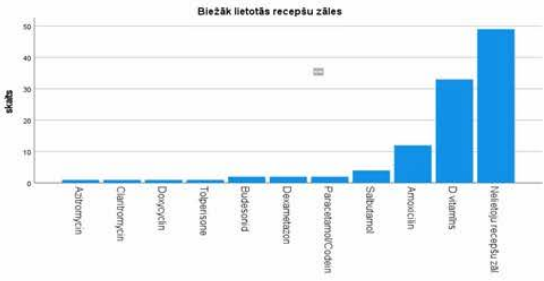
Metodes

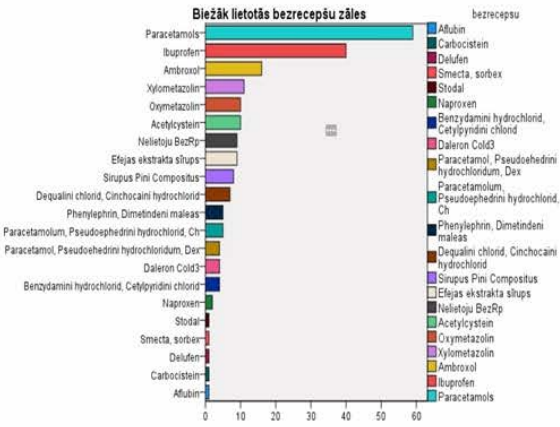
Pētījums tika veikts, izmantojot anketu aptauju portālā www.visidati.lv. Aptauja tika veikta laika posmā no 21.12.2021. līdz 29.12.2021. Pētījumā tika iekļauti respondenti, kuri ir pārslimojuši COVID-19 vīrusa infekciju un ārstējušies ambulatori. Kopumā pētījumā piedalījās 104 respondenti. Pētījumā tika analizētas tikai 100 respondentu atbildes, jo 4 anketas tika atzītas par nederīgām, respondenti neatbilda kritērijiem.
Aptauja ietvēra jautājumus par respondenta vispārējo veselības stāvokli, kā arī simptomiem un lietotajiem medikamentiem COVID-19 saslimšanas laikā. Tāpat anketā tika noskaidrots, pie kādiem speciālistiem respondents vērsies un kādas sekas uz veselību ir atstājusi šī vīrusa infekcija.
Datu apstrādei tika izmantots IBM SPSS statistics 27, MS Excel.

Rezultāti

Aptaujā piedalījās 100 respondenti, 84% (n=84) bija sievietes, bet 16% (n=16) vīrieši.
Pozitīvs laboratorijā apstiprināts tests bija 94% respondentiem, bet 5% diagnoze tika apstiprināta vēršoties pie ģimenes ārsta(ĢĀ). Viens respondents bija vērsies gan pie SPKC darbinieka, gan pie ĢĀ. No tiem, kam nebija pozitīvs tests, trijiem tika konstatēti ožas un garšas izmaiņas. Piektai daļai bija kāda hroniska saslimšana, kas varēja būt kā viens no iemesliem tam, ka pēc Covid- 19 izslimošanas bija dažādi simptomi, kas saglabājās vairāk vai mazāk ilgstoši.
Pētot biežāk lietotās bezrecepšu zāles, kuras respondenti lietoja Covid-19 simptomu mazināšanai, visvairāk tika izmantots gan paracetamols un tā kombinētie preparāti, gan ibuprofēns. Iesnu mazināšanai tika izmantoti dekongestanti 10%, bieži tika izmantoti atkrēpošanas līdzekļi Ambroxol, Acetylcystein un augu valsts preparāti. 54% nelietoja recepšu medikamentus. No recepšu zālēm diviem pacientiem ārsts bija nozīmējis lietot Paracetamolu kombinācijā ar kodeīnu, bieži tika izrakstīts D vitamīns. Daži pacienti lietoja arī antibiotikas.







Secinājumi

Pētījuma rezultāti liecina, ka pārsvarā tika izmantoti medikamenti simptomu mazināšanai, kas atbilst vadlīnijām. Atšķirībā no citu valstu pieredzes retāk tika nozīmēti pretvīrusu līdzekļi un glikokortikoīdi.

Annotation

The Paper was to study prescription and over-the-counter drugs available in Latvia that are used by outpatients for treating COVID-19 symptoms. questionnaire with 12 questions was distributed via online at www.visidati.lv. The research showed that drugs for treating Covid-19 used most often is paracetamol and its combinations, followed by Ibumetin, then comes various antitussives/expectorants and nasal sprays Regarding prescription drugs almost third used vitamin D, followed by amoxicilin and other antibiotics. Drugs like salbutamol, dexametason and pulmicort are also mentioned in the survey, but 54% of respondents did not use any prescription drugs.
The practice of treating Covid-19 is similar all over the world, however in Latvia the emphasis is on symptomatic treatment.

Cardiovascular involvement in MIS-C patients. Single-centre study

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Actuality / The Goal

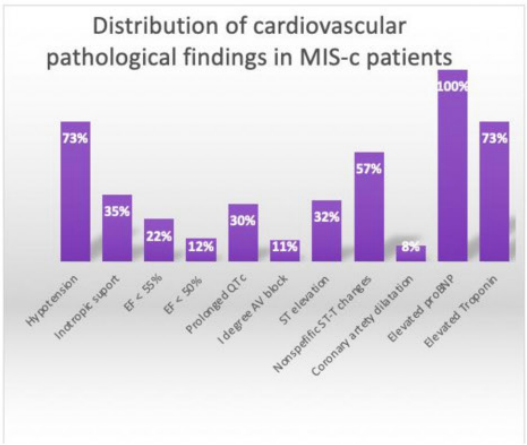
Multisystem inflammatory syndrome in children (MIS-c) is a late complication of Sars-CoV-2 virus characterised as hyperinflammatory system reaction targeting various of organ systems. Cardiovascular system impairment is observed 80 to 100 % of all MIS-c patients with a wide spectrum and severity of symptoms. It is important to early identify symptoms and hospital course of the disease, which could significantly improve the outcome of disease.

Methods

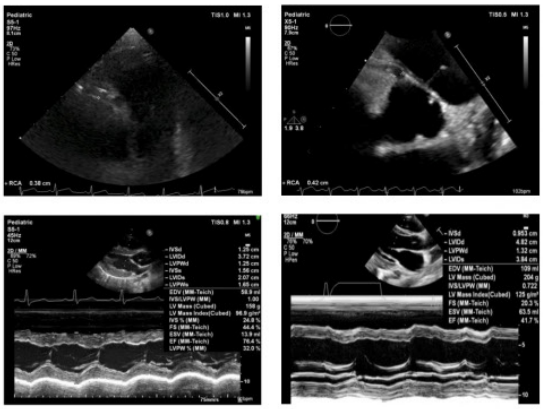
A single-centre study, prospective cohort study, conducted in the Children's Clinical University hospital in Latvia from December 2020 to March 2022. Patients between the ages of one to 17 years who met the MIS-C criteria according to CDC and WHO, were included in the study. We evaluated blood pressure, heart left ventricular function, size of coronary arteries, electrocardiography findings and cardiac biomarkers such as troponin I and proBNP.

Results

In this study were included 37 patient who met MIS-c criteria. The median age was 8.0 years, 58% (21) were boys and 42% (16) were girls. Of all patients 73% (27) presented with hypotension of whom 32% (12) presented with fluid refractory shock and required inotropic support. Reduced left ventricular ejection fraction was observed in 35% (13) of all patients. Mildly decreased left ventricular ejection fraction (EF <55%) was seen in 22% (8) of all cases but moderate left ventricular dysfunction (EF <45%) was observed in 12% (5) of MIS-C patients. For all patients at the time of discharge left heart function returned to normal. Of 37 patients in 8% (3) were observed coronary artery dilatation. As well as left ventricular function, all patients had dilatation resolution at the time of discharge. In ECG we found ST-T segment changes in 89% (33) of all cases, of those 32% (12) ST segment elevations and 57% (21) non-specific ST-T segment changes. Transitional prolonged QTc were found in 30% (11) of MIS-c patients. In all 100% of cases we observed significantly increased proBNP but increases troponin levels were observed in 70% (26) cases.



Comparison of left heart function on admission and before discharge of hospital



Conclusions

Most likely due to early initiated therapy all patients cardiovascular symptoms had resolved at the time of discharge. All patients 100% had significantly increased proBNP which confirms cardiovascular involvement in of all MIS-c cases. MIS-C is still a relevant disease and we should continue the research to improve short term and probably long-term outcome.

Case reports on COVID-19 outcomes in patients with well-managed HIV infection in Latvia.

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Slimību profilakses un kontroles centrs

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has led to a global pandemic with serious implications and open questions for all areas of medicine, including immunocompromised patients. At the end of 2020, 37.7 million [30.2–45.1 million] people were living with HIV, 680 000 [480 000–1.0 million] people died from HIV-related causes and approximately 1.5 million adults and children were newly infected.

In Latvia 257 new cases of HIV were registered by the end of 2020 (incidence rate 13.55 per 100,000 people).

According to the meta-analysis of prevalence information based on 38 studies the pooled prevalence of HIV among COVID-19 patients was 26.9‰ (95% confidence interval [CI] 22.7–31.3) and the pooled prevalence of HIV among studies conducted on hospital records was 24.6‰ (95% CI 20.4–29.1, 33).

Collection of statistical data on the proportion of PLHIV among patients with Covid-19 for the years of the pandemic **in Latvia** is currently in progress.

Despite the fact that immunocompromised patients are at risk of poor outcomes of COVID-19, there is no evidence that clinical manifestations of COVID-19 in patients living with HIV (**PLHIV**) differ from general population, provided these patients have well-controlled immune status (CD4+ count > 200 and undetectable viral load).

Many PLHIV are in the age group over 50, have some cardio vascular diseases, metabolic disorders, and other comorbid pathologies that are risk factors for severe outcomes of Covid-19; therefore, special attention should be paid to COVID-19 vaccination.

Case description

We report two cases of COVID-19 in male patients with well-controlled HIV infection.

The first patient is a 39-year-old Caucasian male diagnosed with HIVI AIII stage 9 years ago with a history of Kaposi's sarcoma in 2013, hypertension and BMI -32. He has been receiving ART therapy for the last 9 years. Blood examination shows CD4+ cell count of 384 cells/mm^3, HIV RNS – not detected. COVID-19 was suspected in December 2021 and confirmed by a positive RT-PCR through nasopharyngeal swab (Delta variant) due to such symptoms as subfebrile temperature for 5 days, nasal congestion, and sore throat. The patient fully recovered after 7 days. Before the onset of COVID - 19 this patient had received 3 vaccine doses.

The second patient is a 40-year-old Caucasian male diagnosed with HIV I AII five years ago, with a history of Lues II recens (December 2021) and no other underlying chronic disease. He has been under ART regimen for the last 5 years with well-controlled immune status (CD4+cell count of 536 cells/mm^3, HIV RNS -not detected), fully vaccinated with 3 doses of COVID-19 vaccine. In December 2021 SARS CoV-2, Delta variant, was confirmed by a positive RT-PCR test through nasopharyngeal swab after the onset of non-specific respiratory symptoms. The patient fully recovered after 6 days.

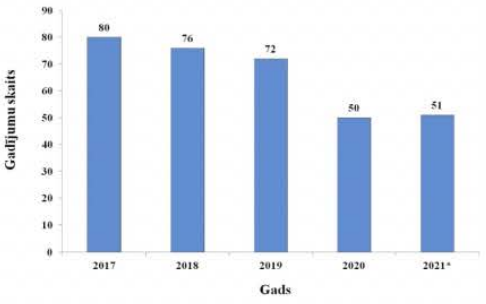
Estimated number of people newly infected with HIV in Latvia
Source: spkc

Based on the current published data and our findings, it can be assumed that the course of Covid-19 in the vaccinated well-controlled HIV patients does not differ from the typical clinical manifestations of COVID-19 in general population.

The latest data demonstrate that COVID-19 vaccination rates among PLHIV are consistent with general population in highly developed countries and regions.

In Latvia many patients from certain social groups (asocial, IVDU et c.) are non-compliant to ART therapy; therefore, it is necessary to decrease vaccine hesitancy in this segment of the population, as COVID-19 vaccination is an essential measure to protect these patients against poor outcomes of COVID-19 (hospitalization, risk of long-term health problems, severe disease, death).

Number of death due to HIV/AIDS in Latvia
Source: spkc



Changes in the proportion of SARS-CoV-2 virus variants circulating at the beginning of 2022 in patients with COVID-19 diagnosis

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The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants poses an increased risk to global public health. The World Health Organization (WHO) has traced five "Variants of Concern" (VOC) to date, out of which Alpha (B.1.1.7), Beta (B.1.351), and Gamma (P.1) circulated previously, but Delta (B.1.617.2) and Omicron (B.1.1.529) variants are currently circulating. At present, the Omicron variant has become the most dominant strain globally. VOC has evidence of increased virus transmission or virus virulence or reduced effectiveness of public health measures, diagnostics, vaccines, and therapeutics. The gold standard for novel variant identification for surveillance is Next-generation sequencing (NGS) of the whole genome, but it is time-consuming and costly. Monitoring known SARS-CoV-2 variants genotyping by RT-PCR is a more rapid and cost-effective assay.

The goal:

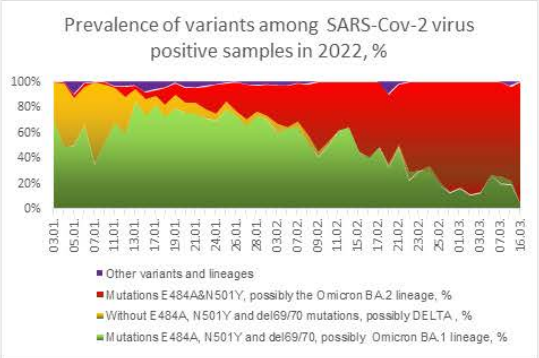
to analyze the emergence and dynamics of actual SARS-CoV-2 variants in patients with COVID-19 diagnosis at the beginning of 2022.

Materials and Methods:

We examined nasopharyngeal/oropharyngeal swabs from patients admitted to the REUH "Latvian Centre of Infectious Diseases" Laboratory from inpatient and outpatient departments of Latvian hospitals in the period of 03.01.2022 to 16.03.2022. for routine COVID-19 diagnostics. RNA was isolated using extraction Protocol for NUCLISENS® easyMAG® instrument and amplified using Multiplex real-time one-step RT PCR method AllplexTM "SARS Cov-2 Master Assay" (Seegene Inc., Republic of Korea) or clinical samples were tested by the automatic system for RNA isolation and SARS-CoV-2 RNA detection by Cobas 6800 ROCHE DIAGNOSTICS instrument.

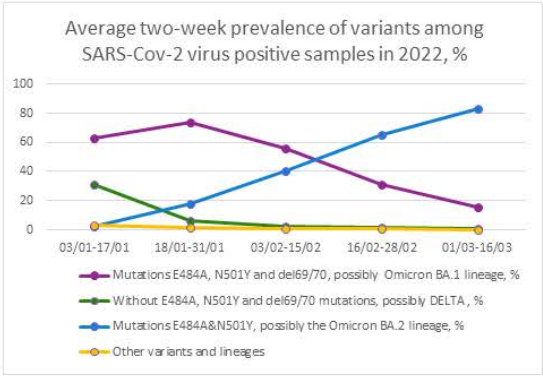
For the detection of SARS-CoV-2 virus variants, 3772 SARS-CoV-2 RNA positive samples were retested by Multiplex real-time one-step RT PCR commercial kit NovaplexTM SARS Cov-2 Variants VII Assay (Seegene Inc., Republic of Korea). There was used Automated Workstation Seegene Nimbus from RNA extraction to PCR. RT PCR was performed using CFX96™ Real-Time PCR Detection System.

The presence of E484A, N501Y, and del69/70 mutations detected by these kits is typical for the Omicron variant and allows us to distinguish it from the variant Delta. 82 out of 3772 SARS-CoV-2 RNA-positive samples using NGS for reference testing were genotyped. Libraries were prepared using Illumina COVIDSeq kit and sequenced on Illumina NextSeq550Dx. Analysis of the raw sequence data was done with an inhouse workflow (https://github.com/NMRL/SARS-CoV2_assembly) where filtered reads were aligned to the Wuhan-Hu-1 reference genome (MN908947.3) using bwa 0.7.17-r1198-dirty mem and samtools 1.12. Variant calls and consensus sequences were generated with freebayes v0.9.21 vcflib 1.0.2/vcffilter and iVar 1.3.1. while PANGO lineages were obtained with Pangolin.



Results:

At the beginning of the 2022 Omicron variant with mutations E484A, N501Y, and del69/70 was presented in 63%, new Omicron variant lineage only with E484A and N501Y mutations in about 3% of positive samples, and the Delta variant was presented in 31%. Then by February 15, the Omicron variant with mutations E484A, N501Y, and del69/70 occurred in 56%, Omicron variant only with E484A and N501Y mutations occurred in 40%, but the Delta variant only in 3% of patients. By the middle of March 2022, the new Omicron lineage (only with E484A and N501Y mutations) accounted for more than 80% of all positive cases of SARS-CoV-2 infection. Reference testing by NGS confirmed typing results by RT PCR: new Omicron variant lineage BA.2 with mutations E484A and N501Y without del69/70 was detected in 82 out of 82 cases.



Conclusions:

The rapid change in the proportion of different SARS-CoV-2 virus VOC at the beginning of 2022 was observed.

The emergence and rapid spread to the current dominant variant of the new Omicron lineage BA.2 with E484A and N501Y mutations without deletion 69/70 were demonstrated.

Characteristics of vaccination against SARS – CoV2 of rheumatic diseases patients in the largest center of Rheumatology in Latvia

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Actuality / The Goal

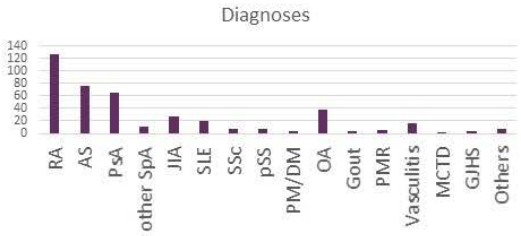
Vaccination of Covid-19 was started in the end of 2020 in Latvia. Rheumatic diseases patients were excluded from vaccines pre – registration studies. Safety and efficacy aspects of vaccines against Covid-19 for rheumatic diseases patients was challenge during 2021.

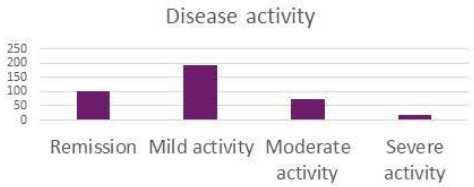
Methods

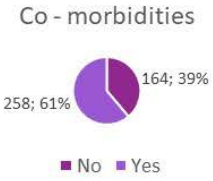
We collected data about vaccination against Covid-19 of rheumatic diseases patients in Paul Stradins Clinical University hospital, the center of Rheumatology from December 2020 till August 2021 and additionally data about Covid-19 before, during or after vaccination.

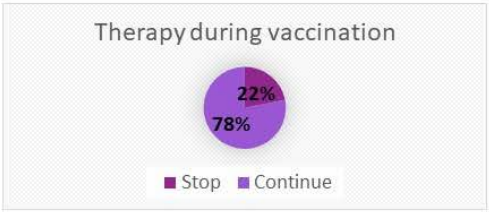
Results

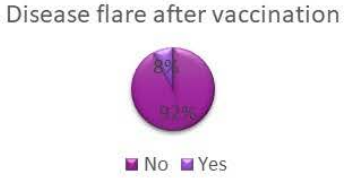
A total of 422 patients with rheumatic diseases were included. 69% were women and 31% - man and mean age was 51,79 (SD 14,63) years. Most common diagnosis for the patients were rheumatoid arthritis: n =127 and spondyloarthropathies: ankylosing spondylitis n = 76, psoriatic arthritis n = 66 patients and other spondyloarthropathies n = 11. Rare rheumatic diseases were presented as follow: juvenile idiopatic arthritis n =28; systemic lupus erythematousus n = 20, systemic sclerosis n = 8, primary Sjogren's syndrome n = 7; polymyositis/dermatomyositis n = 3; polymyalgia rheumatica n = 6, vasculitis n = 16; mixed connective tissue disease n = 2, others (panniculitis, primary antiphospholipide syndrome, granulomatousus mastitis) n = 7. Osteoarthritis n = 38, gout n = 4 and general join hypermobility syndrome n = 3. We analyzed disease activity for 384 patients – autoimmune rheumatic diseases and n = 102 of them were in remission, 191 had mild, 73 moderate and 18 patients had severe disease activity. We analyzed therapy profile for 338 patients with autoimmune rheumatic diseases and 99 patients used sDMARDS, 14 patients – tsDMARDs, 134 patients – bDMARDs, 13 patients – immunosupresive therapy, 69 patients used combined therapy and 12 patients NSAIDs. Glucocorticoids therapy used 16% of 422 patients. There were data about 352 patients and therapy interruption during vaccination – 275 of patients continued therapy and n = 77, 22% had stopped it. We analyzed comorbidities (dyslipidemia, cardiovascular disease, diabetes, chronic respiratory diseases and malignancy) of our patient group and 61% had at least one of them. Vaccine profile: Comirnaty received 207 patients, Vaxzevria n =117, Spikevax n = 65 and Johnson n = 13. From March 2020 till June 2021 48 Covid-19 cases was diagnosed in the study group.











Conclusions

The most of rheumatic diseases patients in our group had remission or low disease activity, what is the optimal time for vaccination. Co – morbidities is serious risk factor for complicated outcome of Covid -19 and it is mandatory to check for them of rheumatic diseases patients. Most patients used sDMARDs and bDMARDs for therapy of a rheumatic disease and 77 of 352 patients had stopped therapy during vaccination due to rheumatologist recommendations. Disease flare was detected for 8% of our patients after vaccination, which is acceptable and shows safety for vaccines of SARS – CoV2 in rheumatic diseases patient group.

Chronic bloody diarrhea as a sign of a life-threatening condition in a patient with COVID-19

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Introduction

COVID-19 disease usually causes symptoms of upper respiratory tract infection, such as cough, fever, dyspnoea, sore throat, rhinitis, and anosmia. Also, fatigue, headache, loss of appetite, and body ache are very common symptoms.

SARS-CoV-2 is not exclusively a respiratory virus and is able to infect multiple organs. Many types of research show, that this virus can damage the gastrointestinal (GI) tract and cause anorexia, dysgeusia, diarrhea, nausea, and vomiting. In some cases, COVID-19 disease can manifest in more severe GI symptoms, such as hematemesis, fecal occult blood, dysphagia, and prolonged bloody diarrhea.

GI symptoms are non-specific and can be caused by several diseases. Diarrhea, anorexia, and fever may occur as symptoms of viral, bacterial, parasitic infections, autoimmune and other diseases. Nevertheless, it is important to consider tumor processes as a reason for these symptoms in elderly patients with COVID-19 as the incidence of GI cancer increases with age.

Case description

A 66-years old cachectic male patient was admitted to the hospital. The patient complained of fever (up to 39°C), cough, dyspnoea for a week, anorexia, and bloody diarrhea with mucus 10 times a day for 3 months. The patient had no chronic diseases and denied taking medication. It is known, that the patient was vaccinated with 2 doses of the COVID-19 mRNA vaccine (Comirnaty). Nevertheless, the SARS-CoV-2 RNA nasal swab test was positive.

The patient showed signs of acute pulmonary insufficiency (SpO2 87% without oxygen). Respiratory rate was 22 breaths per minute, blood pressure was 100/70 mmHg, and heart rate was 91 beats per minute. During physical examination signs of dehydration, tonsilitis and pneumonia were observed.

Blood tests showed anaemia (Hb 94 g/l), signs of infection (WBC 24x109, CRP 194 mg/l, PCT 4.16 µg/l), uremia (urea 17 mcm/l), negative blood culture. X-ray test revealed infiltration in the central and lower areas of the left lung.

Oxygen therapy (5 l/min), antipyretics and NSAIDs, infusion therapy, dexamethasone (8 mg IV), remdesivir, ceftazidime, and erythrocyte mass transfusions were prescribed.

There were signs of infection in urinalysis, ultrasound showed reciprocal hydronephrosis caused by urinary retention. E. coli grew in the urine culture, diagnosis of pyelonephritis was confirmed, and ceftazidime was replaced by ampicillin.

Symptoms of pyelonephritis, respiratory insufficiency, and pneumonia regressed, however, anemia and bloody diarrhea progressed. Hospital-acquired Clostridia difficile infection was diagnosed, and intravenous vancomycin was prescribed. Oesophageal candidiasis was confirmed during esophagogastroduodenoscopy, and treatment with fluconazole was applied. After two weeks, the glutamate dehydrogenase test for Clostridium difficile was negative, and treatment with vancomycin was discontinued.

However, anemia, diarrhea, and haematochezia proceed, and additional testing was performed. A rectal exam showed infiltration, fistulas, and bleeding with suppuration. Due to signs of paraproctitis and abscesses ampicillin was replaced with unasyn.

CT scan revealed infiltration in the rectal wall, fluid in the peritoneal cavity, and collapsing tumor masses in the rectum with abscesses and fistulas. A possible malignant process on the left side was observed in para-aortic and para-caval lymph nodes. Destructive areas and tumor masses were also observed in the pelvic bones.

The multidisciplinary team made a decision not to initiate etiological treatment due to the poor condition of the patient, and the advanced malignant process. The patient was transferred to the palliative care unit for palliative treatment.

Conclusions

SARS-CoV-2 can damage multiple organ systems and cause a broad variety of non-specific symptoms. These symptoms are able to cover more severe illnesses. It is mandatory to conduct a more in-depth examination in order to diagnose the underlying cause.

Empiric antibiotic treatment and hospitalization for patients with COVID-19 pneumonia may increase the risk of Clostridia difficile infection. It can result in bloody diarrhea with pus or mucus as often as 10 times a day, fever, anorexia, and cachexia. GI infections can cause confusion for physicians and disguise more severe and life-threatening diseases, such as GI cancer.

COMPARISON OF LABORATORY ANALYSIS OF MULTISYSTEM INFLAMMATORY SYNDROME, KAWASAKI DISEASE AND TOXIC SHOCK SYNDROME IN CHILDREN

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Actuality / The Goal

Multisystem inflammatory syndrome in children (MIS-C) is a syndrome that affects multiple organ systems and is caused by abnormal immune response to the SARS-CoV-2 virus. The syndrome has clinical similarities to Kawasaki disease (KD), macrophage activation syndrome (MAS), bacterial sepsis and toxic shock syndrome (TSS), therefore initially it was difficult to differentiate MIS-C patients with other inflammatory pathologies clinically. The aim of this study was to describe differences of diagnostic findings between patients with MIS-C, KD and TSS.

Methods

This retrospective study was conducted at the Children's Clinical University Hospital in Riga, Latvia, and involved children <18 years old who were hospitalised during the period from 2012 to 2021 with MIS-C, KD or TSS. Results of laboratory analyses were collected from medical records and analysed using descriptive parametric and non-parametric statistics. A statistically significant difference between groups was assumed where *P*-value was <0.05.

Results

A total 81 patients were included in this study: 39 (48.1%) with KD, 29 (35.8%) with MIS-C and 13 (16.1%) with TSS. Demographic data and clinical overview is reflected on Table 1. In comparison with KD group, MIS-C and TSS patients were significantly older (*P*<0.001). Final diagnosis was made earlier in TSS group than in patients with MIS-C and KD (*P*<0.001).

A summary of laboratory findings is shown in **Figure 1**. Full blood count was analyzed from the first blood sample after hospitalization. Results showed that MIS-C patients had lower total leukocyte count and lower absolute neutrophil count than in KD and TSS group (*P*<0.001). In comparison with KD group, MIS-C and TSS patients had more profound lymphopenia (*P*<0.001), lower platelet count (P<0.001) and lower sodium levels initially (*P*<0.001).

CRP and ferritin maximal values were higher in MIS-C group, but ESR – lower in TSS patients.

Patients with TSS more often experienced acute kidney injury (AKI) during the acute phase of disease (n=6, 46.2%) than KD (*P*=0.005) and MIS-C (*P*=0.046) patients. AKI was indicated by increased serum creatinine levels.

Peak levels of cardiac biomarkers (high-sensitivity cardiac troponin I (hs-cTnI), N-terminal (NT)-pro hormone BNP (NT-proBNP)) were significantly higher in patients with MIS-C compared with patients with KD.

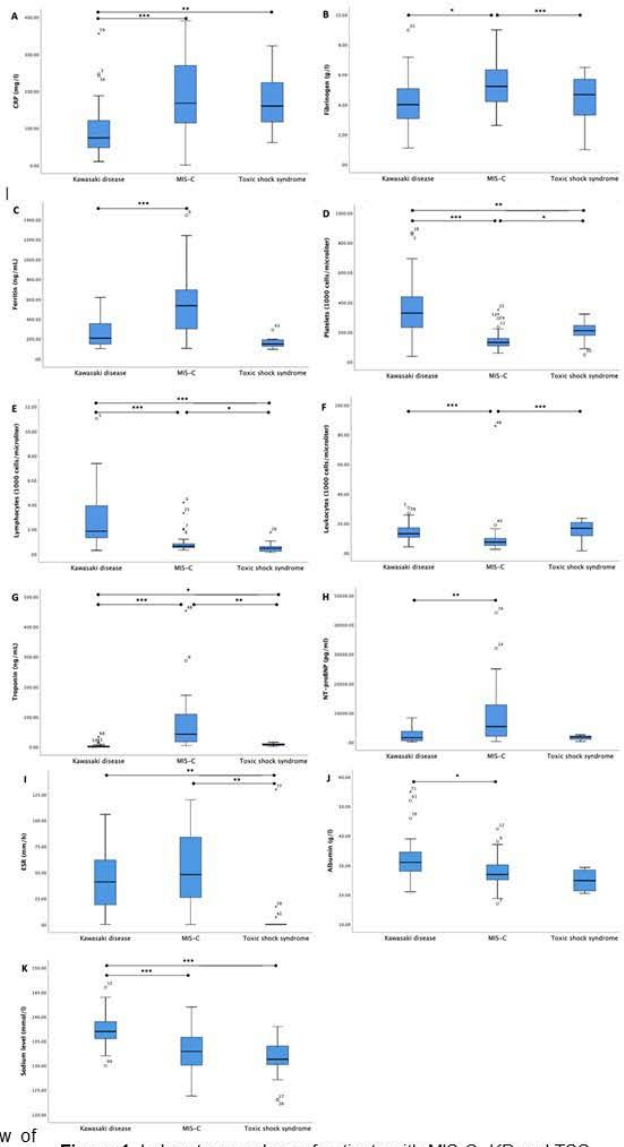

Figure 1. Laboratory markers of patients with MIS-C, KD and TSS (* (P < 0.05), ** (P < 0.01), *** (P < 0.001))

Table 1. Demographic features, comorbidities and clinical overview of MIS-C, KD and TSS patients

Variable	KD	MIS-C	TSS	Total	*P*-value
Age in years; mean (SD)	3,9 (3,7)	9,8 (4,5)	11,3 (4,5)	7,2 (5,2)	<0,001
Sex					
Female, n (%)	16 (41,0)	13 (44,8)	8 (61.5)	37 (45,7)	0.44
Male, n (%)	23 (59,0)	16 (55,2)	5 (38,5)	44 (54,3)	
Comorbidities, n (%)	6 (15.4)	3 (10.3)	0	9 (11.1)	0.4
The time from symptom onset to diagnosis, median (IQR)	7.0 (5.0-10.0)	6.0 (5.0-7.0)	3.0 (2.5-5.0)	6.0 (5.0-9.0)	<0.001
Outcome					
Died, n (%)	0	0	0	0	-

Conclusions

Laboratory analysis show significant differences between MIS-C, KD and TSS patients and are supportive reaching final diagnosis. In comparison with KD and TSS, MIS-C patients tend to have lower total leukocyte, neutrophil and platelet count and higher CRP, ESR, fibrinogen, ferritin and cardiac biomarkers (NT-proBNP, hs-cTnI) levels. During the acute phase of disease MIS-C and TSS shares similar features as profound lymphopenia, hyponatriemia and hypoalbuminemia on the contrary to KD. These parameters could be used as diagnostic tools for early recognition of MIS-C syndrome.

COVID–19 infection and hemorrhagic stroke

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Augustė Šilaitė Lithuanian University of Health Sciences
Gabrielė Baltrūnaitė Lithuanian University of Health Sciences

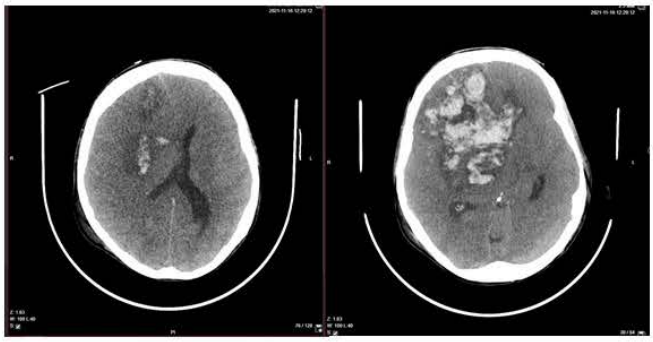
Introduction

COVID-19 is not only respiratory disease but can affect other organs, including the brain. There have been few reports conducted regarding hemorrhagic stroke in patients with COVID-19 infection. We present a case of 46-year-old female with severe COVID-19 infection that experienced intracerebral hemorrhage.

Case description

A 46-year-old female was hospitalized with COVID-19 symptoms dry cough and prolonged fever. Patient felt first COVID-19 symptoms 10 days before hospitalization and proceeded treatment at home. She had preexisting chronic lymphocytic leukemia and rheumatoid arthritis that was not treated at the time.
For treatment she received antibiotics, antipyretics, Dexamethasone, oxygen therapy via nasal cannula and for thromboembolism prophylaxis Fraxiparine. Adequate hydration was ensured.
10 days after hospitalization symptoms started getting worse and patient was admitted to intensive care unit (ICU). On arrival at the medical ICU, the patient appeared cachectic and dyspneic. Her blood pressure was 134/80 mm/Hg, heart rate of 96/min, respiratory rate was 36/min, oxygen saturation was 82% with 15l/min O2 (via an oral mask with reservoir). She was intubated in ICU and ventilatory support was provided.
On 13th hospitalization day there was seen positive dynamic in lung X-ray.
However, patient's renal function was impaired. After 3 days in ICU acute renal failure was diagnosed. There was no indication for hemodialysis. It was decided to treat hyperkalemia and provide more intravenous fluid to aid in rehydration. Patient was treated with vasopressors to help raise blood pressure. Positive dynamic in renal function was seen 6 days after acute renal failure diagnosis was made.
Unfortunately, on 27th day of hospitalization head CT scan revealed intracerebral hemorrhage. One day after hemorrhagic stroke was diagnosed patient died.

Diagnostic imaging findings (CT):



Conclusions

Patient with COVID-19 infection in ICU have increased risk of venous thromboembolism (VTE) and have elevated coagulation markers such as D-dimer. It is recommended that patients receive VTE prophylaxis. However, there is a concern that increased anticoagulation use increases the risk of bleeding and intracerebral hemorrhage. The risk of hemorrhagic stroke should be taken into consideration when developing a treatment regimen. [1]
In recent study it was assessed that patients with active COVID-19 infection and hemorrhagic stroke have 2.4 times higher risk of death than those with only hemorrhagic stroke. It was noted that prior COVID-19 years 93% of patients were admitted to hospital with already present intracerebral hemorrhage while only 53.5% of patients with COVID-19 infection presented themselves with already existing intracerebral hemorrhage. While comparing patient groups there was assessed longer hospital and in ICU stay for patients with COVID-19 infection and hemorrhagic stroke. [2]
Cerebrovascular disease risk was highest in patient who were severely infected and in those who had pre-existing vascular risk factor. [3] Further studies should be conducted to find out risk factors for hemorrhagic stroke while COVID-19 infection is present and the precise physiology linking COVID-19 to risk of cerebrovascular disease.
We would like to increase awareness of high mortality rate in patient with COVID-19 infection who experienced hemorrhagic stroke.

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Covid 19 infection resulting in *n.abducens* paresis.

Authors: Vladimirs Morozovs, Angelika Krūmiņa

Riga Stradins University

First admittance 25.01.22

Patient info: 58 years old male. Admitted to the hospital on 25.01.22 with fibril body temperature (39.0 °C) and rhinorrhea. Not vaccinated against Covid19.
Diagnosis: Covid19 infection,Bilateral pneimonia
Chronic diseases: PAH 2. stage, Diabetes 2. type, Oral thrush, Obesity

Diagnostics
X-ray 25.01.2022
Description: Highly intensive netted interstitial pattern visible in both cranial and caudal lung lobes. Roots well structured. Sinuses are free. Cor - N
Conclusion: Bilateral intersticial pneumonia. COVID19 pneumonia not excluded.
Blood tests 25.01.2022
Thrombocytopenia, leikocytopenia
Hyperglycaemia
ALAT, LDH, LDL, CRO increased
D-dimer and fibrinogen increased
IL6 and ferritin are highly increased
X-ray of 06.02.2021
Positive dynamics compared with images from 25.01.22 – intensity and range of infiltration decreased, areas of fibrous shades with reticulation signs are visible
Blood tests 06.02.2021
Results were normal.

Treatment and discharge
Patient was treated with:
sol.Dexon, sol.NaCl 0,9%, sol.Clexan, c.Omerpasol, c.D vit., t.Ambraxol, c.Fluconasol, sol.Solumedrol,inh.ar pulmicortu, t.Bromazpema, sol.Humulin, t.Metforal, sol.Diclofenac, c.Neurontin, oxygen inhalations, physiotherapy

Discharged from hospital (ambulatory care)
-
07.02.2022

Secondary admittance 18.02.2022

- Complaints about febrile body temperature, perspiration, weakness, headaches, pyous rhinnorhea and worsening of overall health status during last two weeks.
- Previously patient received Otolaringological ambulatory consult and was prescribed with medical therapy (tab.Amoxiclavi, tab.Cirrus, aer.Breso, aer.Septanazal), and x-ray of the sinuses was performed.
- Due to negative dynamics patient turned to hospital again and was hospitalized in therapy section.
- After positive COVID-19 tests result patient was relocated to COVID-19 section.
- Sight doubling.

Diagnostics 18.02.2022
Lung X-ray
Compared with X-ray of 06.02.2022. negative dynamics was seen- inflitrative damage in the middle of the right lobe is denser. Moreover, multiple infiltrates are now seen in caudal part of left lung lobe
Density of previously seen fibrous deformations in both lungs is decreased
No pleural effusion evident
Blood tests
Anemia, Thrombocytosis, Neutrophilia, Lymphopenia
Hyperglycemia
Creatinine increased
CRO increased
Ferritin increased
IL6 increased
Procalcitonine decreased
D-dimer and fibrinogen increased

Treatment

- ❖i/v sol. Ceftriaxoni 1g 2xd. (18.02.-01.03.),
- ❖i/v sol. Metronodazoli 500mg 3xd. (18.02.-24.02.),
- ❖p/o tab.Metforali 1000mg 2xd.,
- ❖p/o tab. Doxazosini 4mg 1xd.,
- ❖p/o tab. Allopurinoli 100mg 1xd.,
- ❖p/o tab. Nebilet 5mg 1xd.,
- ❖p/o tab. Sanoral HCT 40/10/12,5 mg 1xd.,
- ❖analgesic therapy, kas???
- ❖i/v rehydration.

Results

Successful therapy as a result.
Patient was discharged on **16.03.2022.** with negative COVID-19 and no abnormalities in cranial CT, chest X-rays, bloodwork
n.abducens function is saved

Diagnostics 24.02.2022
Ophthalmologist consultation

v OD - 0.7cc + 1.25 Dsph=0.9-1.0 t OD - 11 mm Hg
v OS - 0.5cc + 1.25 Dsph= 0.9-1.0 t OS - 15 mm Hg
Diagnosis - **N.abducens paresis.**

Head CT
No pathological changes were foun in brain lobes and in structure of cerebellum
Thickened mucous membranes in right maxillar cavity and content in both sphenoidal cavities was found.
Thickened mucous membranes in ethmoidal cavities.
Thickened mucous membranes in frontal sinuses.
No data about neoplastic or abscessal processes on the right intraconal side.

Recommendations and medication
- Rest for the next two weeks. Continue following care with your GP.Continue to use medication for glycemia and blood pressure controle. Resume using tab. Xarelto two weeks after surgery (from 11.03.22.)
- Physical acitivity restriction, no head-bendind and nose sniffing for two weeks
- Do not consume hot/cold drinks or food for the next two weeks
- No hot shower/bathing or sauna for two weeks;
- If pain persists, use tab. Paracetamoli 500mg 1 tab. 3 times a day or tab. Dolmen 25mg 1 tab. 3 times a day
- Rinse the nose with isotonic sea water (Emser Nasenduche/1 L of boilde water + 1 teaspoon of salt) twice a day for two weeks
- Use nose oil «Rhinopanteina spray» - 2 puffs into both nostrils 3 times a day for two weeks
- Resume using nasal aerosol «Breso» from 11.03.22. – 2 puffs into both nostrils 2 times a day for 2 months.
- 07.03.22. Otolaringologyst consult

COVID-19 PANDEMIC IMPACT ON PRIMARY HEADACHE CHARACTERISTICS IN EMERGENCY DEPARTMENT

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Actuality

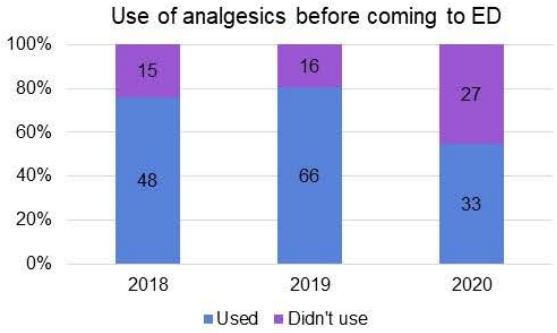
One of the reasons children may seek health care professional help is headache. Primary headache patients mostly are consulted and treated in an out-patient setting, however, during the COVID-19 pandemic there was limited and changed access to health care professionals.

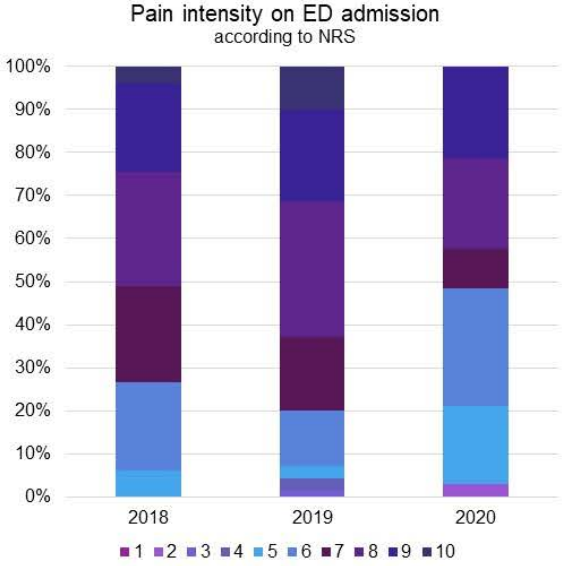
Methods

This was a retrospective study and it included Emergency Department (ED) patients with headache, who had been consulted by a neurologist, in 3-year period (2018 – 2020) in Children's Clinical University Hospital (CCUH). Data from medical history IT system was collected.

Results

A total of 205 patients with primary headache were included in the study (2018 yr. n=63, 2019 yr. n=82, 2020 yr. n=60). Most common primary headache in our study group was tension type 49.0% (n=101), followed by migraine with aura 25.0% (n=52), migraine without aura 24.0% (n=49) and trigeminal autonomic headache 1.5% (n=3). There were more girls in the study group - 60.5% (n=124) and 39.5% (n=81) were boys, patients were 2-17 years old. Most of the patients were from Riga (43.9%), however the proportion of regional patients was slightly rising in first year of COVID19 pandemic - 2018 (55.6%), 2019 (51.2%), 2020 (60.0%). More than third of patients (39.5%) indicated headache at least two to three times a week during the last three months, even more patients in 2019 yr. (42.7%) and less in 2018 yr. (34.9%). There were almost half of the patients (45.0%) in 2020 coming to ED who didn't try any analgesics at home, it was not so common in 2018 (23.8%) and 2019 (19.5%), $p<0.05$. Patients indicated pain less than five according to Numeric Rating Scale (NRS) in 6.1% (2018), 7.1% (2019) and 21.2% (2020), $p<0.05$. Every fourth patient (26.3%) required admission to CCUH, the number was declining throughout the years – 30.2% (2018) to 23.3% (2020). Psychologic support was recommended in 15.9% (2018), followed by increase to 20.7% (2019) and 23.3% (2020).





Conclusions

Number of patients with primary headache in ED did not change and slightly more patients from regions were seeking help, when COVID19 pandemic started. Nevertheless, significantly more patients with much milder pain came to ED and without any previous analgesics used at home.

COVID-19 PATIENT WITH PERIPROSTHETIC KNEE JOINT INFECTION: WHERE TO START?

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2 Rīga Stradiņš University
2 Hospital of Traumatology and Orthopaedics, Latvia

Introduction

- The evolving global COVID-19 pandemic has challenged every surgical discipline and significantly complicated surgical decision making also in the field of traumatology and orthopaedics
- One of the most devastating complications of knee arthroplasty is a periprosthetic infection. This complication occurs in 1-2% of knee arthroplasties[1]
- We present a complex COVID-19 patient with a right knee periprosthetic joint infection (PJI)

Case description

A 82 year-old patient presented to the Hospital of Traumatology and Orthopaedics in February 2022

Complaints:
- increasing right kneepain
- wounds in the right knee region with purulent discharge for one year
- periodically dry cough

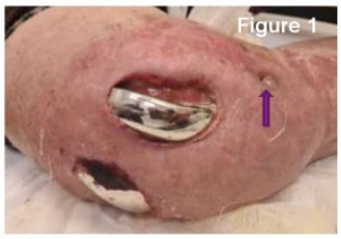
History:
- 2004- osteosynthesis of the right femur with a dynamic hip screw
- 2006- right knee joint arthroplasty
- 2018- cerebral infarction

Comorbilities
- Permanent atrial fibrillation
- Arterial hypertension grade 1, congestive heart failure class 2 by NYHA
- Chronic kidney disease 3b stage

Medication: Spironolactonum, Bisoprolol

Vaccination: Has not been vaccinated against COVID-19

General and local condition
- Contact with the patient is difficult- answers questions with short phrases
- Haemodynamically stable, BP-130/80mmHg, HR-70-90x/min, RR-16x/min, T-36,8°C, SpO2-93%
- Two wounds and fistula (arrow) with purulent discharge in the right knee region with visible endoprosthesis (Image 1)
- Erythema, edema of the right lower leg



Diagnostic tests

- **SARS-CoV-2 RNS(RT-PCR)**- positive (CT- values 14,8-22,4)
- **Right knee x-rays**- osteolytic changes around the prosthesis with sclerotic changes in the bone - signs of loosening (Image 2)
- **CT of the chest**- bilateral atypical virus (COVID19) pneumonia, reticulation stage, lung damage -1/3 (Image 3)
- **Blood tests**- Er, Leu, Thr- normal range; CRP-120mg/L, APTT- 42s (25-40), GFR- 40ml/min/1,73m^2
- **Microbiological wound testing** - Methicillin Susceptible *Staphylococcus Aureus*

Treatment

High perioperative risk:
- CHA2DS2-VASc Score- 8 (6,7% thromboembolism risk)
- Caprini venous thromboembolism score- 13 (10,7% thromboembolism risk)
- ASA Class 3-4

Due to patients' general health condition, functional activity, soft tissue status and comorbidities surgical treatment was performed- **above the knee amputation of the right leg** (Figure 4)

Intensive care unit stay- 3 days (2 days vasopressor support)

Medications- Amoxiclav i/v 14 days, O_2 through a mask (3-6l/min), Enoxaparin 40mg s/c, Omperazol, analgesics

Total hospital stay- 22 days

The patient successfully continues rehabilitation

Conclusions

- PJI is a **devastating condition** associated with a high rate of mortality, increased risk of morbidity, reinfection and decreased quality of life[2]
- While treatment of PJI is complex and usually consists of combination of surgical and antibcterial treatment, the presence of **COVID-19 infection complicates decision making** (risk of multi-system disease with acute respiratory distress syndrome, cardiac and liver dysfunction, acute kidney injury, and coagulopathy)
- Considering the increasing numbers of COVID-19, and the fact that patients remain contagious for approximately 2 weeks, hospital systems **must prepare** to perform **essential surgical procedures** on COVID-19-positive patients.

References

1. *Kurtz SM., Ong KL., Lau E., Bozic KJ., Berry D., Parvizi J. Prosthetic joint infection risk after TKA in the Medicare population. Clin Orthop Relate Res 2010: 468(1):52-56*
2. *Prosthetic joint infections. Aslam S, Darouiche RO. Curr Infect Dis Rep. 2012;14:551–557.*

RISKA FAKTORI UN RISKA GRUPAS: KLĪNISKO GADĪJUMU ANALĪZE

Ilmira Kalinkina, RSU rezidente, eksperte

Aktualitāte / Mērķis

Covid-19 pandēmija ir šī gadsimta nozīmīgākā sabiedrības veselības krīze. Tā ietekmējusi ne vien mūsu fizisko un garīgo veselību, bet tās sekas rada atbilstošas funkcionalitātes traucējumi. Pateicoties manai specialitātei, tam, ka man ir ģimenes ārsta prakse ar lielu pacientu skaitu, man bija iespēja diagnosticēt, ārstēt un sniegt primāro atbalstu Covid-19 pacientiem, kā arī izskatīt dažādus Covid-19 gadījumus dažādām riska grupām.

Covid-19 ir neprognozējama saslimšanas gaita. Darba mērķis ir izskatīt atsevišķus klīniskos gadījumus.

Metodes

Prakses reģistrētas pacientus ambulatoras kartes un izraksti no stacionāriem.
Informācijas apkopošana, pacientu novērošana, pētīšana līdz saslimšanai un pēc saslimšanas, pacientu intervijas, rezultātu analīze.

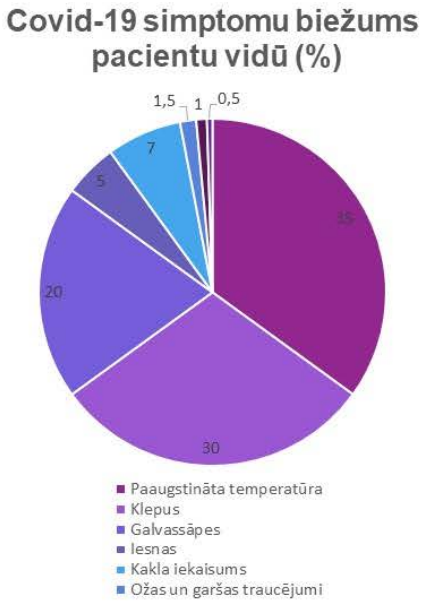
Rezultāti

Gadījumu apraksts:

Novērošanas laiks: 12.03.2020.-12.03.2022.
Novēroto pacientu skaits: 3200 (divas ārstu prakses)
80%pacientu saslimuši ar Covid-19
7% pārslimojuši Covid-19 2 reizes
1% pārslimojuši Covid-19 trīs reizes

Rezultāti apkopoti tabulā pa labi.

Pacienta dati: Dzimums / Vecums/ Svars / Augums	Blakusslimības	Slimības norise
S / 58 / 80 / 1,62	Mielodisplastiskais sindroms, refraktera trombocitopineja, Imūna hemaletiska anēmija, no 2020.g. saņem biopreparātus, Sistēmiska sarkana vilkēde no 2018.g	Viegla (saslima 21.02.2022.) Ambulatora ārstēšana līdz 01.03.2022. Drudzis, klepus, nespēks, lietoja antibiotikas Vakcinēta
S / 61 / 78 / 1,68	Stāvoklis pēc labās nieres karcinomas kombinētās ārstēšanas 2015.g., primāra arteriāla hipertenzija un nodoza struma	(1) Pirmais saslimšanas gadījums: 21.01.2021. Smaga saslimšanas gaita Nevakcinēta (2) Otrais saslimšanas gadījum: 24.01.2022. Viegla saslimšanas gaita Vakcinēta
S / 31 / 96 / 158	Bronhiālā astma, liekais svars	Saslima 29.06.2021., nomira 15.07.2021 Vakcinēta 2 reizes Smaga norise, pneimonija, nāve
V / 53 / 84 / 182	Arteriālā hipertensija	Saslima 12.01.2022., smaga norises gaita Vakcinēts 2 reizes / Pēc Covid paaugstināts PSA, atrasts prostatas vēzis
S / 66/ 70 / 172		Saslima 18.12.2020. Nevakcinēta Smaga norises gaita, mākslīga plašu ventilācija, ilga reabilitācija, hronisks nogurums, kognitīvie traucējumi
S / 55 / 72 / 162	Nodoza struma ar hipotiriozi	Saslima 07.02.2022. Vakcinēta 3 reizes Viegla slimības gaita
V / 35 / 84 / 182	Psoriāze, psoriātiskais artrīts, lieto bio preparātus	(1) Pirmā saslimšana 07.09.2020. Nevakcinēts, viegla saslimšana (2) Otra saslimšana 28.02.2022., Vakcinēts, vidēji smaga saslimšanas gaita
V / 57 / 110 / 180		Saslima 23.02.2022. Ļoti smaga saslimšanas gaita
S / 57 / 75 / 165	Kontrolēta arteriāla hipertenzija	Vakcinēta (1) Pirmā saslimšana 03.01.2022, viegla saslimšana (2) Otrā saslimšana 05.03.2022., smaga gaita, insults ar aterotrombotis ģenēzi, kreisās puses parēze
S / 60 / 80 / 170	Kreisās gūžas locītavas deformējoša artroze	Saslima 21.10.2021., smaga slimības gaita, nekontrolēta bronhiāla astma, un bronhoektatiska slimība Vakcinēta



Secinājumi

Saslimšana ar Covid-19 nav atkarīga ne no vecuma, ne no dzimuma, ne no svara, ne no auguma, ne no citu saslimšanu esamības.

Jebkuram ar Covid-19 pārslimojušam cilvēkam ir dažādas sekas, kas traucē viņam funkcionēt: hronisks nogurums, matu izkrišana, plaušu fibroze, kognitīvie traucējumi, emocionālie traucējumi un/vai cukura diabēts.

Novērojot pacientus, viens no galvenajiem mērķiem bija laicīgi prognozēt nelabvēlīgu slimības gaitu, lai sūtītu pacientus uz stacionāro ārstēšanu.

Riska grupas

- 60+ gadi
- Hipertensija
- Diabēts
- Sirds slimības
- Hroniskas plaušu slimības
- Neiroloģiskie pacienti
- Novājināta imūnsistēma

FRIENDS OR FOES
DRAUGI VAI IENAIDNIEKI

Covid-19 aggravates the course of cancer in cancer patients, truth or myth?

Covid-19 saasina vēža gaitu vēža slimniekiem, patiesība vai mīts?

Kira Soloviova
Palīgs: Ilmira Kalinkina
Amats/grāds: ģimenes ārsta prakse; ģimenes ārsts, Rīgas 1 slimnīca arodslimību ārste
Iestāde: VDEĀk ārsts-eksperts
ORCID: Maģistrs, RSU rezidents
Darba veids: COVID-19: Klīniskā medicīna;
Riska faktori un riska grupas

Actuality / The goal
Aktualitāte / Mērķis

In the medical world, after the emergence of Covid-19 as a pandemic, a debate has begun about how much Covid-19 complicates chronic diseases. One of the most common diseases today is cancer. There were more or less 20 million cancer cases around the world by 2021. Therefore, the purpose of this work is to understand how Covid-19 affects cancer patients.

Medicīnas pasaulē pēc Covid-19 kā pandēmijas parādīšanās ir sākusies diskusija par to, cik ļoti Covid-19 sarežģī hroniskas slimības. Viena no mūsdienās izplatītākajām slimībām ir vēzis. Līdz 2021. gadam pasaulē bija vismaz 20 miljoni vēža gadījumu. Tāpēc šī darba mērķis ir izprast, kā Covid-19 ietekmē vēža pacientus.

Methods
Metodes

To study this topic, various articles were taken into consideration (to be attached below) and also my personal experience. I have been working as doctor for over than 25 years. As well, I worked during both waves of the coronavirus. For analysis were taken 4 women and 4 men (from my practice) with and without cancer (16 people in total) were taken, for comparison, how the disease went in different people.

Lai izpētītu šo tēmu, tika ņemti vērā dažādi raksti (pievienoti zemāk), kā arī mana personīgā pieredze. Es strādāju par ārstu vairāk nekā 25 gadus. Es strādāju arī abu koronavīrusa viļņu laikā. Analīzei tika ņemtas 4 sievietes un 4 vīrieši (no manas prakses) ar un bez vēža (kopā 16 cilvēki), salīdzinājumam, kā slimība noritēja dažādiem cilvēkiem.

https://www.cancerresearchuk.org/sites/default/files/pes_covid_2020.pdf
https://www.cancer.gov/about-cancer/coronavirus/coronavirus-cancer-patient-information#:~:text=People%20with%20blood%20cancers%20may,that%20produce%20antibodies%20against%20viruses.
https://www.dovepress.com/the-impact-of-covid-19-on-cancer-peer-reviewed-fulltext-article-IDR
https://www.thelancet.com/journals/langas/article/PIIS2468-1253(21)00005-4/fulltext
https://www.iqvia.com/blogs/2020/07/the-impact-of-covid19-on-cancer-treatment-across-the-eu5-countries
https://ascopubs.org/doi/full/10.1200/GO.20.00351
https://www.europeancancer.org/2-standard/169-european-cancer-summit-2020-impact-covid-on-cancer
https://www.who.int/news-room/fact-sheets/detail/cancer

PATIENS PACIENTS	1	2	3	4	5	6	7	8
SEX DZIMUMS	M/V	M/V	M/V	M/V	F/S	F/S	F/S	F/S
AGE VECUMS	58	63	67	60	45	51	38	28
WEIGHT SVARS	80.kg	86.kg	78.kg	92.kg	56.kg	75.kg	95.kg	58.kg
HEIGHT AUGUMS	186. cm	188. cm	187. cm	190. cm	160. cm	166. cm	175. cm	169. cm
PRESENCE OF CANCER VĒZIS	–	–	–	–	–	–	–	–
HEALTH CONDITION BEFORE COVID-19 VESELĪBAS STAVOKLIS PIRMS COVID-19	Diabetes II Diabēts II	CHD, old myocardial infarction, PAH II, HSM II KSS, vecs miokarda infarkts, PAH II,HSM II	CHD, exercise angina II, PAH II, HSM II KSS, slodzes stenokardija II, PAH II, HSM II	CHD, exercise angina II, PAH II, HSM II PAH II, bija Černobiļā	–	–	Chronic total colulitis Hroniskais totāls čuļēns kolits	–
COVID-19 INFECTED INFICĒŠANAS AR COVID-19	06.09.2021	15.12.2021	11.03.2022	08.03.2022	12.01.2022	24.02.2022	08.02.2022	10.10.2021 15.02.2022
COURSE OF COVID-19 COVID-19 GAITS	Very severe, stationary Ļoti smagi, stacionāra	Easy at home Viegli mājās	Very severe, at home Ļoti smagi, mājās	Easy at home Viegli mājās	Easy at home Viegli mājās	Very severe, stationary Ļoti smagi, stacionāra	Easy at home Viegli mājās	Severe, stationary Smagi, stacionāra
ACQUIRED DISEASES AFTER COVID-19 IEGŪTAS SLIMĪBAS PĒC COVID-19	Diabetes II decompensated, bilateral bronchopneumonia, Diabēts II dekompensēts, abpusēja bronhopneimonija	High blood pressure Paaugstinātā asinsspiediens	Heart attack Sirdstrieka	–	–	–	Exacerbation of chronic total ulcerative colitis Hroniskais totāls čuļēns kolīts paasinājums	There was pain in the joint, herpes Paradījās sāpes locītava, herpes
VACCINATION STATUS VAKCINĒŠANAS STĀVOKLIS	Was not vaccinated before the disease Nebija vakcinēta pirms saslimšanas	Get ill with 2/2 Saslima ar 2/2	Get ill with 3/3 Saslima ar 3/3	Get ill with 3/3 Saslima ar 3/3	Get ill with 3/3 Saslima ar 3/3	Get ill with 3/3 Saslima ar 3/3	Get ill with 3/3 Saslimusis ar 3/3	Get ill with 2/2 Saslima ar 2/2

PATIENS PACIENTS	1	2	3	4	5	6	7	8
SEX DZIMUMS	M/V	M/V	M/V	M/V	F/S	F/S	F/S	F/S
AGE VECUMS	69	54	59	84	52	53	39	73
WEIGHT SVARS	87.kg	88.kg	78.kg	65.kg	72.kg	70.kg	43.kg	60.kg
HEIGHT AUGUMS	168. cm	192. cm	190. cm	164. cm	173. cm	165. cm	160. cm	156. cm
PRESENCE OF CANCER VĒZIS	+	+	+	+	+	+	+	+
TYPE OF CANCER VĒŽA VEIDS	Left Kidney Adenocarcinoma II B Kr.Nieres Adenokarcinoma II B	Left Pulmonary Squamous Cell Carcinoma III B Kr. Plaušas plakanšūnu Karcinoma III B	Left Kidney Carcinoma I B Kr. Nieres Karcinoma I B	Prostate Cancer II B Prostatas vēzis II B	Malignant tumor of the left breast Ļaundabīgs audzējs kreisa krūšu dziedzera	Multifocal atypical carcinoid left lung and root lymph nodes Multifokāls atipisks karcinoīds lb. plaušu un saknes limfmezglos	Right breast ductal carcinoma II B Lb. Piena dziedzera ductāla karcinoma II B	Untreated lymphoma IV B Ļaundabīgs audzējs taipans zarnas
WHEN CANCER IS DIAGNOSED KAD TIEK DIAGNOSTICĒTS VĒZIS	April 2018 Aprīlis 2018.gads	September 2021 Septembris 2021.gads	September 2012 Septembris 2012.gads	November 2018 Novembris 2018.gads	May 2017 Maijs 2017.gads	March 2018 Marts 2018.gads	December 2019 Decembris 2019.gads	September 2012 Septembris 2013. gads
REMISSION BEFORE / AFTER COVID-19 REMISIJA PIRMS/PĒC COVID-19	Before Pirms	There were no remissions Remisijas nebija	Before and after Pirms un Pēc	Recurrence Recidīvs	Before and after Pirms un Pēc	Recurrence Recidīvs	There were no remissions Remisijas nebija	Before and after Pirms un Pēc
THE COURSE OF THE CANCER BEFORE COVID-19 VĒŽA GAITA PIRMS COVID-19	Moderate course after combinatio n therapy Vidēji smaga gaita pēc kombinētas terapijas	Very hard, metastases to the mediastinal and lymph nodes Ļoti smagi, metastāzes videnes un limfmezglos	Moderate course after combinati on therapy Vidēji smaga gaita pēc kombinētas terapijas	Very hard, bone metastase, recurrence Ļoti smagi, metastāzes kaulos, recidīvs	Severe course after combinati on therapy Smaga gaita pēc kombinētas terapijas	Moderate course after combinatio n therapy, recurrence Vidēji smaga gaita pēc kombinētas terapijas , recidīvs	Severe course after combinatio n therapy Smaga gaita pēc kombinētas terapijas	Moderate course after combinatio n therapy Vidēji smaga gaita pēc kombinētas terapijas
THE COURSE OF THE CANCER AFTER COVID-19 VĒŽA GAITA PĒC COVID-19	Stable, remission Stabili, remisija	Remains the same Paliek nemainīgs	Stable, remission Stabili, remisija	Remains the same Paliek nemainīgs	Stable, remission Stabili, remisija	Unstable,re currence Nestabili, recidīvs	Unstable Nestabili	Stable, remission Stabili, remisija
ACQUIRED DISEASES AFTER COVID-19 IEGŪTAS SLIMĪBAS PĒC COVID-19	Diabetes II Diabēts II	Diabetes II Diabēts II	–	–	–	–	Pneumofibrosis Pneimofibroze	–
COVID-19 INFECTED INFICĒŠANAS AR COVID-19	24.03.2021	25.01.2022	28.09.2021 10.03.2022	25.12.2021	05.01.2022	11.03.2022	09.10.2021	05.10.2021
COURSE OF COVID-19 COVID-19 GAITS	Severe, immediately the second day hospitalized with bilateral viral pneumonia Smagi,otrajā dienā stacionēts ar abpusēju vīrālo pneimoniju	Easy at house, with antibiotics Viegli mājās ar antibiotikām	For the first time in a severely hospitalized, the second time easily home Pirma reize smagi stacionārā, otra reize viegli mājās	Easy at house Viegli mājās	Easy at house Viegli mājās	Easy at house Viegli mājās	Very severe middle lobe, lower lobe pneumonia and post-Covid-19 pulmonary fibrosis Ļoti smagi, vidusdaivas , apakšdaivas pneimonija un pēc Covid-19 plaušu fibroze	Easy at house, with antibiotics Viegli mājās ar antibiotikām
VACCINATION STATUS VAKCINĒŠANAS STĀVOKLIS	Was not vaccinated before the disease Nebija vakcinēta pirms saslimšanas	Get ill with 3/3 Saslima ar 3/3	The first get ill time without vaccination and the second time with 3/3 Pirma reize saslimis bez vakcinēšanas un otro reizi saslimis ar 3/3	Get ill with 3/3 Saslimusis ar 3/3	Get ill with 3/3 Saslimusis ar 3/3	Get ill with 3/3 Saslima ar 3/3	Was not vaccinated before the disease Nebija vakcinēta pirms saslimšanas	Get ill with 2/2 Saslima ar 2/2

Results
Rezultāti

Delays in surgery, delays in chemotherapy, and a reduction in biopsies are the top three cancer treatments that have been most affected by the COVID-19 pandemic. Oncologists have faced a major challenge in balancing the provision of high-quality, uninterrupted, non-fragmented cancer care with minimizing the risk of radiation exposure to patients during treatment. But in general, from the tables with patients, we can see that healthy people or those with other diseases often endure covid worse than cancer patients. We can also see that with remission, the disease is more easily tolerated and cancer patients are not at greater risk of getting a new disease after covid. In general, we can observe a positive outcome of events.

Ķirurģijas aizkavēšanās, ķīmijterapijas kavēšanās un biopsiju skaita samazināšanās ir trīs galvenās vēža ārstēšanas metodes, ko Covid-19 pandēmija ir skārusi visvairāk. Onkologi ir saskārušies ar lielu izaicinājumu, lai līdzsvarotu augstas kvalitātes, nepārtrauktas, nesadrumstalotas vēža aprūpes nodrošināšanu ar līdz minimumam samazinātu radiācijas iedarbības risku pacientiem ārstēšanas laikā. Bet kopumā no tabulām ar pacientiem var redzēt, ka veseli cilvēki vai tie, kas slimo ar citām slimībām, Covid bieži pārcieš sliktāk nekā vēža pacienti. Tāpat redzams, ka ar remisiju slimība ir vieglāk panesama un vēža slimniekiem nav lielāks risks saslimt ar jaunu slimību pēc Covid. Kopumā mēs varam novērot pozitīvu notikumu iznākumu.

Conclusions
Secinājumi

From this analysis, which consists of various sources from the Internet, as well as personal observation, we can draw the following conclusion: the tolerability of Covid-19 with positive dynamics depends on many different factors. Cancer is not an indicator that a patient will experience Covid worse than a healthy person (as stated in many articles that will clearly be discussed further), but there are always risks. Each patient needs an individual approach. We can also see that the vaccine is not an indicator that a person with or without cancer will get sick or not, but in general it is obvious that all patients with the vaccine suffered covid much easier.

No šīs analīzes, ko veido dažādi avoti no interneta, kā arī personīgi novērojumi, varam izdarīt šādu secinājumu: Covid-19 panesamība ar pozitīvu dinamiku ir atkarīga no daudziem dažādiem faktoriem. Vēzis nav rādītājs, ka pacients Covid pārdzīvos sliktāk nekā vesels cilvēks (kā teikts daudzos rakstos, kas nepārprotami tiks apspriesti tālāk), taču vienmēr pastāv risks. Katram pacientam nepieciešama individuāla pieeja. Tāpat redzams, ka vakcīna nav rādītājs tam, ka cilvēks ar vēzi vai bez vēža saslims vai nesaslims, taču kopumā redzams, ka visi vakcinētie pacienti ar Covid pārcieta daudz vieglāk.

COVID-19 UN PSIHISKĀ VESELĪBA: SĒKAS PĒC PĀRSLIMOŠANĀS, ĪLGSTOŠA DARBA NESPĒJA, REZISTENCE TERAPIJAI UZ KLINISKĀ GADĪJUMA PIEMĒRA

Dr. Jaroslavs Loginovs, ārsts rezidents eksperta specialitātē

Ievads

Psihiskās veselības jomā strādājošiem speciālistiem pēdējo divu gadu laikā kopā ar terminu Covid-19 vienozīmīgi blakus skan arī diagnozes *depresija, izdegšana, astenizācija*. Pieprasījums pēc šīs jomas speciālistiem pieaudzis vairākkārt. Vairākas diskusijas, konferences, semināri, publikācijas ir vēltītas traucējumiem, kuri rodas dēļ stresa, lokdauna, pārslodzes, dzives stila izmaiņām. 2020. g. tika veikta psihisko simptomu metaanalīze 402 pieaugušajiem, kas nopietni izlimoja Covid-19 (265 no tiem - vīrieši, vidējais vecums 58 gadi). Ievērojama daļa pacientu sevi novērtēja psihopatoloģiskajā diapazonā: 28% - PTSS, 31% - depresija, 42% - trauksme un 40% - bezmiegs. Kopumā 56% ieguva punktus patoloģiskā diapazonā vismaz vienā klīniskajā dimensijā [1]. Savukārt, 2021. g. veikta analīze norāda uz to, ka, pēc jaunākajiem datiem, depresija skar līdz 40% cilvēku, kuriem bijusi SARS-CoV-2 infekcija. Pētnieki piedāvā koncentrēties uz smagu depresijas traucējumu biomarķieru identificēšanu, kas ir raksturīgi arī Covid-19 pacientiem un var ietekmēt pēcCovid depresijas attīstību (CRO, interleikīni, kā arī samazināts smadzeņu izcelsmes neirotrofiskais faktors un triptofāns). Identificētie biomarķieri norāda uz pēcCovid depresijas etiopatoģenēzi, kas ir radniecīga vadošajai smagu depresijai traucējumu pēcCovid iekaisuma hipotēzei [2]. Šis klīniskā gadījuma apraksts ir vēl viens mēģinājums saprast vairāk par slīmības sekām, īpaši par psihisko traucējumu attistības vai paasinājumu aprākstītiem riskiem tieši pēc Covid-19 pārslimošanās, ņemot vērā to augsto hronifikācijas un stabīlu funkcionēšanas traucējumu attistības risku, īpaši gados jauniem cilvēkiem.

Gadījuma apraksts

Gadījums, kuru prezentēju, ir par pacientu - 32 gadu vecs vīrietis, mēbeļu galdnieks. Saslimis akūti, 2021. gada sākumā, ar augstu temperatūru (39), stiprām izteiktām galvasāpēm, nespēku, klepu, iesnām, ožas un garšas zudumu, vispārējo vājumu. Pēc akūtas respiratorās simptomātikas izzušanas apmēram 4 nedēļu laikā joprojām saglabājas astenodepresīvā simptomātika (nomākts garastāvoklis, ātra nogurdināmība - gan fiziskā, gan garīgā, miega traucējumi, spēku izsīkums, viegla aizkaitināmība, psihomotora kavētība, anhedonija, apetītes un libido pazemināšanās, trauksme, ažitācija) - neskatoties uz to, ka trūkst datu par organiskā rakstura izmaiņām iekšējos organos, asins analīzēs, galvas smadzenēs. Darba hipotēze – ņemot vērā šo un citu līdzīgu pacientu gadījumus, var veikt korelāciju starp Covid-19 un citu līdzīgo vīrusu infekciju saistību ar turpmāko noturīgo psihiatriskā spektra traucējumu attīstību vai hronisko slimību paasinājumu – smagie ilgstošie neirotiskie traucējumi - pārsvarā asteniskā spektra (F4), organiska (F06), kā arī afektīvie traucējumi - pārsvarā depresīvie(F32), kuri diezgan slikti padodas farmakoterapijai un psihoterapijai, kļūstot par rezistentiem stāvokļiem. Pēc VDEĀVK datiem, diemžēl, šie stāvokļi jau nereti kļūst par iemesliem DNL tūrpināšanai vīrs 6 mēnešiem, vai pat invaliditātes iestāšanos sakarā ar stabiliem un vismāz mērenas pakāpes funkcionāliem traucējumiem gados jauniem pacientiem.

Covid-19 var novest pie «Garīgās veselības pandēmijas»

Secinājumi

Neskatoties uz minimālām vai nenozīmīgām izmaiņām instumentālo un laboratorisko izmeklējumu rezultatos – MR galvai, CT plaušām, EEG, asins analīzes, EKG (izņēmot īslaicīgas paroksismālās aritmijas lēkmes, kas neprasa specializeto ārstēšanu), brahiocefalo asinsvadu doplerogrāfijas, - šādiem pacientiem ilgstoši saglabājas izteikta astenodepresīvo traucējumu simptomātika pēc organiskā tipa (F06.6), afektīvo traucējumu tipa (F32), neirotisko traucējumu tipa (F4) (pēc SSK-10 klasifikācijas), ar prevalējošo simptomātiku nespēka, vājuma, ātras nogurdināmības, koncentrēšanas grūtību, paaugstinātās nogurdināmības, miega traucējumu, psihomotoras kavētības, anhedonijas, apetītes un libido pazemināšanās, trauksmes, ažitācijas veidā. Pielietota terapija nootropo preparatu, mildronata, B, C, D vitamīnu grupas preparātu veidā. Pašlaik nozīmēta papildus terapija ar Brintellix 10mg, efekts uz doto brīdī varētu būt vertējams ka mēreni pozitīvs.

Abstract

Over the past two years, mental health professionals along with Covid-19 have often identified such diagnoses as depression, burnout and asthenia. This clinical case report is another attempt to understand the consequences of the disease, especially the risks associated with the development or exacerbation of mental illness, given their high risk of developing chronic and stable dysfunction, especially in young people (case study: post-Covid-19 patient, 32 years old). Despite minimal or insignificant changes in the results of instrumental and laboratory examinations, the patient for a long time retains persisent symptoms of astheno-depressive disorders by organic type (F06.6), affective disorder type (F32), neurotic disorder type (F4) (according to ICD-10 classification). Applied therapy in the form of of nootropic drugs, mildronate, B, C, D vitamin group drugs, with additional treatment of Brintellix (Vortioxetine) 10 mg.

1. M.G. Mazza et al. Anxiety and depression in COVID-19 survivors: Role of inflammatory and clinical predictors. Brain, Behavior, and Immunity Journal. 2020; 594-600.
2. Lorkiewicz, P.; Waszkiewicz, N. Biomarkers of Post-COVID Depression. J. Clin. Med. 2021, 10, 4142. https://doi.org/10.3390/jcm10184142

EPIDURĀLI ABSCESI KĀ INTERLEIKĪNA-6 INHIBITORA UN DEKSAMETAZONA TERAPIJAS KOMPLIKĀCIJA COVID-19 PNEIMONIJAS PACIENTAM

Valdis Ģibietis
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Paula Stradiņa klīniskā universitātes slimnīca

Ievads

Interleikīna-6 receptora monoklonālā antiviela tocilizumabs iekļauta starptautiskās COVID-19 ārstēšanas vadlīnijās, jo RECOVERY un REMAP-CAP pētījumos novērots, ka tocilizumaba lietošana kopā ar deksametazonu mēreni uzlabo mirstību COVID-19 pacientiem ar smagu slimības gaitu, stāvokļa pasliktināšanos, pieaugošu prasību pēc skābekļa un nozīmīgu iekaisuma reakciju (NIH, 2021).

Pretrunīgi dati liecina par tocilizumaba saistību ar palielinātu bakteriālas infekcijas risku (*Koritala et al.*, 2021). Šajā gadījuma aprakstā aplūkota paciente ar smagu COVID-19 pneimoniju, kura ārstēšanās gaitā piedzīvoja nozīmīgu bakteriālu infekciju kā komplikāciju.

Gadījuma apraksts

Sieviete, 66 gadi, hospitalizēta akūtā kārtā

Sūdzības:
- 13 dienas t° līdz 39°C, nespēks, pieaugošs elpas trūkums

Vēsture:
- Novērojas pie pulmonologa saistībā ar bronhītu, bronhiālu astmu
- Primāra arteriāla hipertensija, 2. pakāpe
- Alerģija uz penicilīna a/b grupu, tetraciklīnu, gentamicīnu
- Nav vakcinēta pret COVID-19

Objektīvi:
- **SpO_2 telpas gaisā 80%**; ar augstas koncentrācijas skābekļa masku (AKM) 12 L/min – 94%
- Elpo 20 x/min
- Asinsspiediens 154/78 mmHg
- CT plaušām – abpusēji atipiska pneimonija (1. attēls)

1. DIENA
Terapijā uzsāk 10 dienu kursu ar *Tab. Dexamethasoni* 6 mg 1 reizi dienā p/o.
Palielina skābekļa atbalstu uz **augstas plūsmas nazālām kanilēm** (APNK).

2. DIENA
APNK (FiO_2 100%, 60L/min) → SpO_2 86-94% atkarībā no pozīcijas; pievieno AKM 15 L/min → SpO_2 94%.
Arteriālo asins gāzu analīzē: pO_2 – 59 mmHg, SaO_2 – 92,9%.

Terapijā ar konsilija lēmumu pievieno *Sol. Tocilizumabi* 640 mg i/v vienreizējā devā.

5. DIENA – izteiktas sāpes mugurā Th12 līmenī.
8.–9. DIENA – atkārtotas febrilitātes epizodes.

10. DIENA asins uzsējumā – *Staphylococcus aureus, MSSA*, uzsāk *Sol. Vancomycini* i/v.
- Veic magnētisko rezonansi (2. attēls) muguras jostas un krūšu daļai – **epidurāli (Th9-12, L4-5), *musculus psoas sin.* un paravertebrāli abscesi, septisks artrīts L4-5**.
- **Papildus anamnēzē – dentāla procedūra pirms ~4 nedēļām**.
- Konsilijā nolemts, ka ķirurģiska ārstēšana nav indicēta.
- Noņem APNK, pakāpeniski reducē skābekļa atbalstu līdz atcelšanai **15. DIENĀ**.
- Antibakteriālo terapiju maina uz *Sol. Oxacillini* 2,0 g 6 reizes dienā, novērtējot alerģisku reakciju neesamību.
- Turpina antibakteriālu terapiju i/v kopumā 4 nedēļas, tad pāriet uz *Tab. Trimetoprimi/Sulfametoxazoli* 960 mg 3 reizes dienā p/o.

12. NEDĒĻA – MRI abscesu nav, iekaisīgās izmaiņas reducējušās, sūdzību nav, pārtrauc antibakteriālo terapiju.

1. tabula. Laboratoriskās analīzes

	1. diena	7. diena	15. diena	Vienība	Norma
Leikocīti	6,3	19,6	7,8	$*10^9$/L	4 – 10
CRP	141,8	6,6	6,8	mg/L	0 – 5

1. attēls. Plaušu datortomogrāfijas aina pirmajā dienā slimnīcā

2. attēls. Magnētiskās rezonanses attēls – mugurēja epidurāla infiltrācija ar nelieliem abscesiem no Th9 augšmalas līdz Th12 (bultas)

Secinājumi

Augstas plūsmas skābekļa terapija un pretiekaisuma terapija ar deksametazonu un IL-6 inhibitoru tocilizumabu pacientei ar smagu COVID-19 pneimoniju efektīvi veicināja atlabšanu.

Tomēr paciente piedzīvoja infekciozu komplikāciju – abscesus epidurālajā telpā un paravertebrālajos muskuļos.

Nepieciešama individuāla infekciju riska novērtēšana pacientiem, uzsākot terapiju ar imūnsupresīviem medikamentiem.

Summary

66-year-old female patient was hospitalized with severe COVID-19 pneumonia which led to hypoxia requiring oxygen support with high-flow nasal cannulae at FiO_2 100%, 60 L/min. She received anti-inflammatory treatment with 10-day dexamethasone 6 mg PO course and a single infusion of IL-6 monoclonal antibody tocilizumab 640 mg IV. Treatment led to gradual reduction of oxygen support. However, at Day 10 she was found to have Staphylococcus aureus bacteremia with epidural, psoas and paravertebral abscesses as the source. She received 11-week antibiotic treatment which led to resolution of abscesses.

EPITELIĀLO AUDU APOPTOZES NOVĒRTĒJUMS COVID-19 PACIENTIEM UN TĀ SALĪDZINĀJUMS PACIENTIEM AR HIV UN HIV/HCV KOINFEKCIJU

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Nr.VPP-COVID-2020/1-0023

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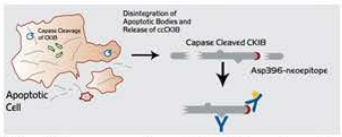
Aktualitāte / Mērķis

SARS-CoV-2 vīruss inducē epiteliālo audu bojājumu, tai skaitā apoptozi (Henry et al., 2021), kas skar ne tikai plaušas, bet arī citus orgānus. Epiteliālo šūnu apoptozes laikā kaspāzes sašķeļ citokeratīnu 18 (CK18), kas ir intracelulārs starpfilaments, fragmentos. Viens no tiem ir Asp396 (CK18-M30), kuru var noteikt ar monoklonālām antivielām M30. Ir pierādīts, ka CK18-M30 korelē ar Covid-19 slimības smagumu (Henry et al., 2021). Paaugstinātu CK18-M30 līmeni atrod arī citu patoloģiju gadījumos kā hroniskās aknu slimības (Parfieniuk-Kowerda et al., 2014) , HIV/HCV koinfekcija (Rohrbach et al., 2014), kur tas liecina ne tikai par apoptozes līmeni, bet arī par aknu iekaisuma aktivitāti un fibrozes pakāpi.



1.attēls. Šūnu apoptoze, izdalīta ar kaspāzēm

Mērķis ir noteikt CK18-M30 līmeni serumā akūtiem un post-Covid pacientiem un salīdzināt ar citu RNS vīrusu, kā HIV un HIV/HCV koinfekcijas izraisītu apoptozes līmeni.

Metodes

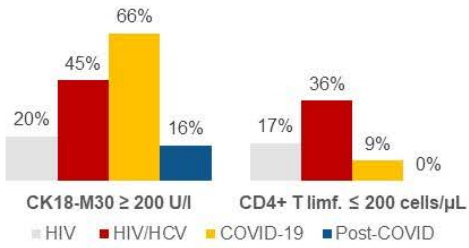
Pētījumā tika analizētas 4 grupas:

- **Akūtā Covid-19 grupa** – 101 cilvēks vecumā no 26 līdz 85 gadiem (vid. vec. 60 ± 14), 50% sievietes;
- **Post-Covid grupa** – 57 cilvēki vecumā no 20 līdz 66 gadiem (vid. vec. 42 ± 13), 47% sievietes;
- **HIV grupa** – 48 cilvēki vecumā no 25 līdz 62 gadiem (vid. vec. 40 ± 9), 25% sievietes;
- **HIV/HCV grupa** – 58 cilvēki vecumā no 24 līdz 62 gadiem (vid. vec. 37 ± 9), 41% sievietes.

CK18-M30 serumā tika noteikts ar ELISA metodi (M30 Apoptosense, PEVIVA). Papildus tika vērtēta pacientu pilna asins aina, CD4+T limfocītu skaits, ferritīns, LDH, GGT, IL-6, CRO, ALAT un ASAT līmenis, iestājoties stacionārā.

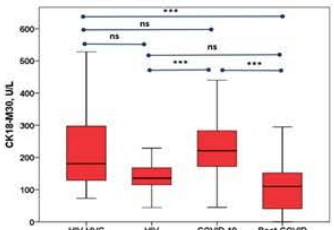
Rezultāti

Izmantojot *«cut-off»* līmeņus, tika noteikts pacientu procents ar CK18-M30 ≥ 200 U/l un CD4+ T limfocītu skaitu ≤ 200 šūnu/µL (1. attēls).



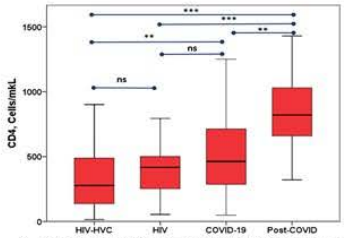
1. attēls. Pacientu procents ar paaugstinātu CK18-M30 un izteiktu imūndeficītu grupās

Padziļināta analīze parādīja, ka Covid-19 pacientiem CK18-M30, kas tika noteikts pirmo 48 stundu laikā pēc iestāšanās stacionārā, neatšķīrās no HIV/HCV koinfekcijas pacientiem, bet bija augstāks nekā HIV un post-Covid pacientiem (2.attēls).



2. attēls. CK18-M30 dažādās grupās

Grupās salīdzinot CD4+ T limfocītu skaitu konstatējām, ka Covid-19 pacientiem CD4+T limfocītu skaits neatšķīrās no HIV, bet bija augstāks nekā HIV/HCV koinfekcijas pacientiem (3.attēls).



3. attēls. CD4⁺ T limfocītu skaits grupās

Pacientiem ar akūtu Covid-19 CK18-M30 bija saistīts ar ALAT (r_s=0,45, p<0,001), ASAT (r_s=0,47, p<0,001), GGT (r_s=0,31, p<0,05), LDH (r_s=0,45, p<0,001), EGĀ (r_s=0,29, p<0,001), ferritīnu (r_s=0,39, p<0,001) un minimālo SpO2 hospitalizācijas periodā (r_s=-0,39, p<0,001). CK18-M30 nebija saistīts ar pacientu vecumu, dzimumu, asins šūnu skaitu, Il-6 un CRO līmeni.

Secinājumi

Akūta Covid-19 pacientiem novēro pastiprinātu epiteliālo audu apoptozi, kas ir salīdzināma ar HIV/HCV koinfekcijas pacientiem, un ir intensīvāka nekā HIV gadījumā. Epiteliālo audu apoptoze saistīta ar hipoksiju un iekaisumu aknās.

EPITHELIAL TISSUE APOPTOSIS IN COVID-19 PATIENTS AND ITS COMPARISON IN HIV AND HIV/HCV CO-INFECTED PATIENTS

ABSTRACT

CK18-M30 is a marker of epithelial cell damage, that correlates with the severity of Covid-19 disease.

The goal of this study was to assess the level of CK18-M30 (ELISA) in Covid patients and to compare it with HIV and HIV/HCV co-infection patients.

Results: CK18-M30 in acute Covid-19 patients did not differ from HIV/HCV patients but was higher than in HIV and post-Covid patients and was associated with ALT, AST, GGT, LDH, ESR, ferritin and minimal SpO2 throughout the hospitalization.

Conclusions: Acute Covid-19 is associated with increased epithelial tissue apoptosis, which is comparable to HIV/HCV co-infected patients and is more intense than in HIV patients. Epithelial tissue apoptosis is associated with hypoxia and liver inflammation.

Evaluation of radiological findings of Covid-19 lung lesions in Latvia in the view of artificial intelligence and radiologist

Keiša Laura [1], Radziņa Maija [2,3], Mičena Arta [2], Putriņš Dāvis Sīmanis [2], Birkenfelds Edgars [2], Agera Aija [2], Krastiņa Zanda [2], Priedīte Ilze [2], Zvaigzne Ligita [2]

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Actuality / The Goal

Since the start of pandemic more than 500 million people have been diagnosed with SARS-CoV-2. Artificial intelligence (AI) has been recognised as important tool for diagnosis of lung lesions caused by Covid-19 infection. It is estimated that AI can improve examination specificity (Sp) and sensitivity (Se) reducing the risk of imaging misinterpretation and improving the efficiency of lung Covid-19 characterization.

The main aim of this study is to compare the accuracy of AI compared to radiologist in evaluation of Covid-19 induced lung damage and to determine the limitations and benefits of interpretation in the clinical context.

Material and methods

Clinical and imaging data of 1000 patients with clinical suspicion or confirmed Covid-19 disease hospitalized at *Pauls Stradins Clinical University Hospital* from 2020 to 2021 with mean age 66 years (19-99 years) were retrospectively analyzed.

Non-enhanced CT of the thorax evaluation was performed by a cloud-based AI software, which provides an objective quantification of the degree of lung involvement as the percentage of total lobe volume in the different lung regions and per lesion type (ground-glass opacity (GGO), consolidations (CO), crazy paving pattern (CCP) and combinations of GGO with CO or CCP) and compared with conclusion of the experienced radiologist.

Each lobe will have a severity score based on the extent of affected area as following: 1 (affected area: <5%); 2 (affected area: 5%–25.%); 3 (affected area: 26% - 50%); 4 (affected area: 50%–75%); and 5 (affected area: >75%).

The severity scores of each lobe are added together resulting in the total severity score (5-25) and classified as mild (1-7 points), moderate (8-17 points) and severe (18-25 points) disease.

Results

According to severity score AI evaluated lung damage as follows - 55,5% of patients had mild 39,95 – moderate and 4,6% severe lung involvement, but according to radiologist most common was moderate disease- 51,3%, followed by 32,6% - mild diseas and 16% severe disease form (see image A).

Comparing mean value of total lung damage by AI and clinical severity, results showed positive progression with mean value 7,93% +/- 11 at mild disease and 28,95% +/- 23,18 at severe disease form (see image B).

In comparison of CT lung leasons per lobe in radiologist opinion most common lung involvement was in interval 5-25%, but according to AI evaluation dominated mild lung involvement not exceeding 5% threshold (see image C).

Both experts agreed that most common radiological sign were ground-glass opacity (76% by radiologist and 65,4% by AI).Radiologist evaluation showed that second most common CT sign was GGO combination with CCP (11,32%), followed by combination of GGO and CO (6%), but AI showed different results with CO (25%) and GGO with CO (6,2%) as more commonly shown leason types (p=0.001).

The lobe involvement interpretation by the radiologist and AI were similar - with predominance of right lower lobe – (91% and 72,8%), followed by left upper lobe (90,2% and 56,7%) and the left lower lobe (88,9%, 69,8%), respectively.

Similarities shown bilateral lung involvement dominance, it was observed in 92,5% cases by radiologist and lesser (75,4%) by AI. Basal predominance was estimated in 92.5% and 75,4% of cases.

Among symptomatic adult patients AI software has a sensitivity for diagnosis of Covid-19 caused lung damage with Acc 60%, Se 80% (95% CI 0,77-0,83) and the Sp of 28% (95% CI 0,23-0,33) (PPV 64 %, NPV 47%, p=0.01).

Based on CT estimated lung involvement AI has given statistically significant positive correlation (p=0.01) between extensive percentage of lung involvement and increasing clinical severity of Covid-19 illness, mortality risk, age abowe 60 years and sex –particularly - men.

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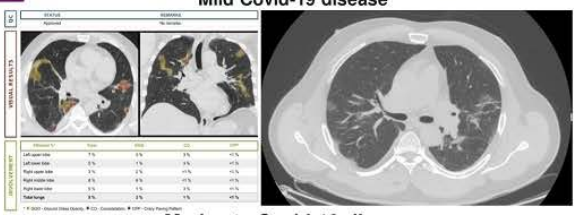
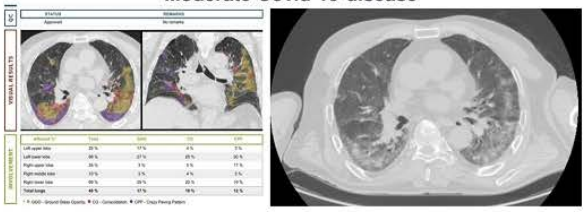
A Covid-19 severity classification

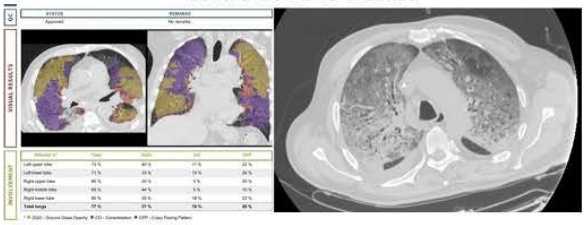
Mild Covid-19 disease



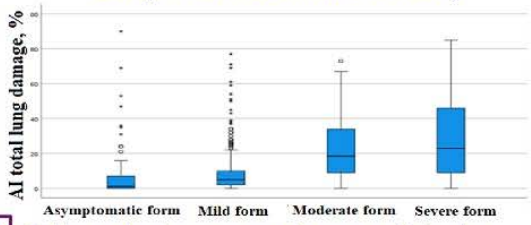
Moderate Covid-19 disease



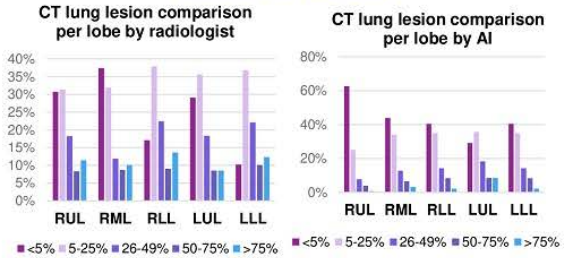
Severe Covid-19 disease



B Mean value of total lung damage by AI comparison to clinical severity



C CT lung lesion comparison per lobe by radiologist and MI



RUL – right upper lobe, **RML**- right middle lobe,**RLL** –right lower lobe, **LUL** – left upper love, **LLL**- left lower lobe

Conclusions

AI has proven to be an effective tool assessing the providing useful data: most common Covid-19 radiological signs and lesions location which could help selecting the most effective disease management. However, it should be noted that none of these symptoms are specific to Covid-19 infection and in 40% of cases AI was inacurate in determining the extent of the damage.

Most accurate results AI showed detecting clinically severe disease form therefore it can be used in this disease stage evaluation and monitoring disease activity, improving the prognostic outcome estimation of the disease if supervised by the experienced radiologist evaluation.

Extracorporeal Blood Purification with cytokines absorbing hemofilter oXiris® in severe COVID-19 patients: a retrospective observational study

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Actuality

Unbalanced systemic host immune response is a critical factor of disease deterioration and multiorgan failure in patients with Coronavirus disease 2019 (COVID-19). The rapid deterioration of disease is closely associated with cytokine storm-induced septic shock, which are the leading causes of ICU admission and death in critically ill SARS-CoV-2 patients. Extracorporeal blood purification with the oXiris® absorptive hemofilter is proposed as an adjuvant therapy designed to modulate the inflammatory host response with the capacity to adsorb circulating cytokines while delivering continuous renal replacement therapy (CRRT).
Our objective therefore is to evaluate the impact of oXiris filter on clinical and laboratory parameters in critically-ill COVID- 19 intensive care unit (ICU) patients receiving extracorporeal blood purification.

Methods

Fifteen patients with COVID-19 who received CRRT in intensive care unit (ICU) in Pauls Stradins Clinical University Hospital in Riga, Latvia between October 1, 2020, and April 30, 2021, were enrolled in this single center retrospective observational study. Vital signs, vasopressor requirements, oxygenation index (PaO2/FiO2), C-reactive protein (CRP), cytokines, procalcitonin (PCT), ferritin and sequential organ failure score (SOFA) were compared immediately before and 72 hours after initiation of CRRT with oXiris hemofilter.

Results

Fifteen critically ill COVID-19 patients, 13 males and 2 females with a mean age 62.3 (IQR 57.5.0-68.0) year, were enrolled. None had preexisting renal disease. Median time for initiation of CRRT after admission to ICU was 3 days (IQR 2.0-8.0).

We have found a remarkable improvement of hemodynamic status and requirement of vasopressors infusion. Mean arterial blood pressure (67.6 [IQR 62.7-72.6] vs. 75.9 [IQR 70.7-81.6] mmHg) and oxygenation index PaO2/FiO2 (90.6 [IQR 74-106] vs. 118 [95.3-134.5] mmHg) increased 72 hours after CRRT with oXiris hemofilter. The median noradrenaline dose fell significantly from 0.23 mcg/kg/min to 0.15 mcg/kg/min ($p < 0.05$).

In line with hemodynamic improvement, the treatment with oXiris hemofilter was associated with a reduction of median CRP (124.6 mg/l [IQR 100.5-219.2] before CRRT vs 114.6 [IQR 49.5-180] after 72 hours of CRRT), PCT (4.3 ng/ml [IQR 0.22-1.45] vs 0.97 [IQR 0.72-16.4), Ferritin (1310 ng/ml [IQR 915-1689] vs 1217 [IQR 680.5-1560.5]) and SOFA (9.6 [IQR 8-11] vs 8.5 [IQR 6.8-9]).

Median baseline IL-6 was 52.4 pg/ml (IQR 25.12-130.7) and decreased overtime during the first 72 h of the treatment to the median level of 31.8 pg/ml; IQR 13.75-91.8), with the most significant decrease in the first 24h. The median length-of-stay in ICU was 12 days. Among the total study population, 4 (26.6%) were discharded from UCI alive, and 11 (73.3%) died.

Critically ill COVID-19 patient receiving CRRT with highly cytokine absorbing oXiris hemofilter in Pauls Stradiņš University Clinic ICU

Conclusions

In our study CRRT with oXiris blood purification membrane for severe SARS-CoV-2 mediated septic shock was associated with improvement of hemodynamic status and SOFA score, a remarkable reduction of inflammatory biomarkers and vasopressor infusion rate.

Unfortunately, despite the use of the oXiris filter in the patient with critical COVID-19, mortality exceeds 50%, even if there is a good response in hemodynamical improvement at the beginning of the therapy. We consider that this outcome is dependent on multiple comorbidities and clinical situations not included, so its application must be investigated further.

Features of blood coagulation in patients with aseptic necrosis of the femoral head who underwent covid-19 before and after hip replacement

Kayumov Javokhir[1],
Madrakhimov Sarvar[1],
Karimov Murodulla[1],
[1]Tashkent Medical Academy

Actuality / The Goal

The aim was to study the rheological properties of blood before and after total hip arthroplasty in patients with aseptic necrosis of the femoral head who underwent COVID-19.

Methods

The results of the treatment of 20 patients from September 2020 to January 2022 were studied. The control group consisted of 20 patients who had not undergone COVID-19. Women - 29, men - 11. The average age was 60.5±5.5 years (from 55 to 75 years). In the preoperative period, all patients were examined for antibodies to SARS-CoV-2 IgG and IgM. There were no antibodies at all cases. All patients were examined by standard digital radiography of the hip joint in a standing position. The condition of the joint was additionally studied on a 1.5-tesla MRI device, expert class Essenza. During the pre and postoperative period, the main focus of laboratory tests was directed to the following: general blood analysis, coagulogram, D-dimer, INR. Multidisciplinary approach of specialists: cardiologist, endocrinologist, therapist, hematologist, gynecologist and anesthesiologist were the key to success. The quality of life of patients was assessed using a visual analog scale (VAS).

Results

Total hip arthroplasty was performed in 20 patients diagnosed with aseptic necrosis of the femoral head after a transfused COVID 19. In all 20 patients, hypercoagulation markers were observed, which included: Fibrinogen, D-dimer. Data on fibrinogen showed that the average index in patients was 6.6 g/l in the preoperative period, while the average level of the d-dimer was 3100 ng/mL. In the postoperative period, the average values showed 8.1 g/l for fibrinogen, and 4170 ng/mL for d-dimer. In order to prevent thromboembolic complications, anticoagulant therapy (xarelto 15 mg x 1 time per day) was performed in the pre and postoperative period. A decrease in the level of hypercoagulation markers was observed on average in the 12-day period. Fibrinogen and d-dimer were on average equal to 4.5 g/l and 1250 ng/mL.The VAS scale decreased from 7.6 to 2.3 during this period.

Conclusion

Perioperative dynamic coagulation control dramatically reduces possible complications in the form of thrombosis, thromboembolism.
Fibrinogen indicators may persist for a long time in the upper indicators from the norm in comparison with patients who have not suffered from COVID-19.

Fetal biometry, Doppler parameters and perinatal outcomes in SARS-CoV-2 infected pregnant women

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Santa Markova (Latvia, Rīga), Riga Maternity Hospital.

Santa Tenberga (Latvia, Rīga), Riga Maternity Hospital.

Actuality / The Goal

The possible effect of SARS-CoV-2 (SARS) infection during pregnancy, despite enormous research, is not completely clear. Recent study results suggest the possible adverse perinatal outcomes.

The objective of this study was to reveal any consequences of the SARS-CoV-19 infection during pregnancy on fetal growth, Doppler parameters, and perinatal outcomes.

Methods

Pregnant women enrolled in this study were examined using ultrasound and dopplerometry in Riga Maternity Hospital from May 2021 till February 2022 after confirmed SARS infection by RNA PCR (the study group). Ultrasound examination included fetal anatomy, biometry, biophysical profile (BPP), amniotic fluid index (AFI), transvaginal cervical length (CL). Doppler examination consisted of the interrogation of the umbilical artery (UA), middle cerebral artery (MCA), and uterine arteries (UtA). All biometry values and Doppler pulsatility indices (PI) were converted to z-scores, percentiles, and compared to controls without SARS infection history during pregnancy, matched by gestational age and parity. The gestational age of enrolled patients was from 12+5 to 37+4 weeks. The exclusion criteria were - smoking history, hypertensive disorders, gestational diabetes, autoimmune diseases, and multiple pregnancies. Gestation at birth, birth weight, mode of delivery, the prevalence of preterm birth, Apgar scores were analyzed and compared between study and control groups. Furthermore, we evaluated the time and symptoms of the disease.

Results

Altogether 90 patients were included in the study, 45 patients in each group. Our study revealed no cases of abnormal fetal anatomy or BPP evaluation, no patients with a short cervix. No significant difference between the two groups was evident in respect to AC measurements, EFW, AFI, MCA PI, UA PI, UtA PI, CL. The present study demonstrated no cases of maternal, fetal death, or miscarriages in both groups. This analysis found no evidence of a higher Cesarean section rate after SARS infection during pregnancy, demonstrating higher rates in the control group (18,5% vs. 34,5%, respectively). The prevalence of labor induction did not differ between the study and control groups (9,8% vs. 9,1%, respectively). Our research detected two cases of premature birth in the control group but none in the study group. Low birth weight (<2000 g) and fetal macrosomia (>4000 g) were more often observed in the study group when compared to controls (3,9% vs. 0% and 13,7% vs. 6,8%, respectively), however, the difference was not significant (p=0,87 and p=0,85, respectively).

The mean gestational age at the time of disease was 19,2 weeks, with predominantly an asymptomatic or mild form of SARS infection (93,6%).

The mean values in two groups

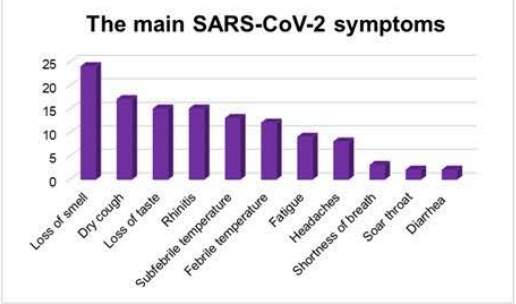
	Reseach group	Control group	*p* value *
Age	30,80	31,70	0,33
Parity	0,60	0,40	0,38
Gestational age,*weeks*	28,50	28,90	0,52
BMI	24,70	32,50	0,29
HC, *percentiles*	56,00	58,60	0,67
AC,percentiles	51,00	47,90	0,60
FL,percentiles	50,00	53,50	0,63
EFW, *percentiles*	48,30	47,40	0,88
AFI, *cm*	11,00	10,30	0,32
MCA PI, *percentiles*	45,00	25,90	0,16
UA PI, *percentiles*	36,70	43,80	0,29
UtA PI, *percentiles*	34,40	47,50	0,06
Cervical length, *mm*	39,00	39,80	0,75
* Independent -Samples Mann Whitney U test			

Perinatal outcomes in two groups

	Research group	Control group	*p* value *
Gestation at birth, *weeks*	40,00	39,20	0,60
Birth weight, *g*	3593,33	3350,58	0,77
5th-minute Apgar score	7,90	7,60	0,45
* Independent -Samples Mann Whitney U test			

Conclusions

1) Women exposed to SARS infection during pregnancy were not significantly different from controls regarding ultrasound findings, Doppler measurements, and perinatal outcome.
2) The vast majority of generally healthy pregnant women experienced mild symptoms of SARS infection.
3) The study results demonstrated no significant influence of mild SARS disease on perinatal outcomes.



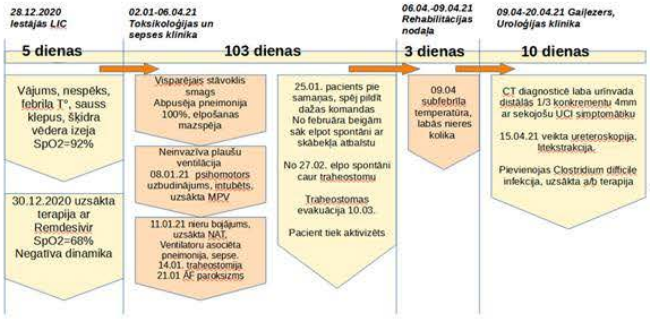
Funkcionēšanas traucējumi pacientam pēc pārslimotas COVID19 infekcijas. Klīniskais gadījums.

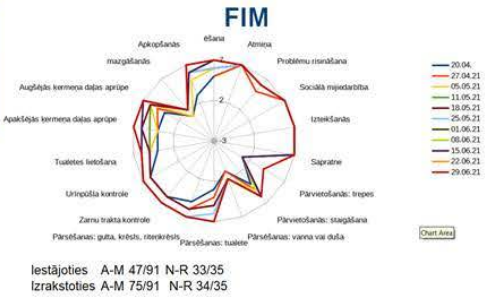
Anna Zakajeva[1], Zane Dambe[1,2], Illa Mihejeva [1,2], prof. Aivars Vētra [1,2]
1. RAKUS Rehabilitācijas klīnika
2. Rīgas Stradiņa Universitātes Rehabilitācijas katedra

Pacientiem, kuriem COVID-19 infekcija norītēja vidēji smagi vai smagi, bieži vien ir nepieciešama psiholoģiska un fiziskā rehabilitacija, lai atjaunot vai uzlabot savas funkcionēšanas spējas. Tas saistīts gan ar ilgstošu atrašanos intensīvas terapijās nodaļa kritiski slimiem pacientiem, gan ar COVID-19 radītām komplikācijām.
Ziņojuma mērķis – analizēt rehabilitācijas procesu pacientam pēc smagas COVID19 ierosinātas abpusējās pneimonijas ar 100% plaušu bojājumu.

Gadījuma apraksts

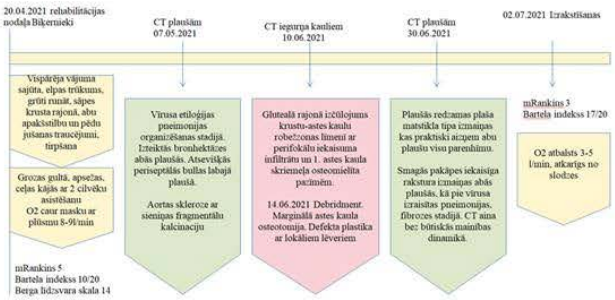
Anamnēze
- Vīrietis, 56 gadi
- Primārā arteriālā hipertensija 2pak.
- Bronhiālā astma
- 1995.g. cervikālo skriemeļu stabilizējošā operācija pēc traumas
- Mugurkaula jostas daļas spondiloze
- L3-L4 diska trūce ar sekvestrāciju 2016.g.
- 2016.g. jostas skriemeļu diska operācija
- Dzīvo ģimenē, ar sievu un meitu, 3 stāvā, lifts nav
- Pašnodarbināts, darbs lielākoties pie datora
- Nesmēķē





Iestājoties A-M 47/91 N-R 33/35
Izrakstoties A-M 75/91 N-R 34/35

73 dienas rehabilitācijas nodaļā



Novērtējums pēc WHODAS 2.0 01.10.2021

D1	Izpratne un komunikācija	8,33%
D2	Mobilitāte	25,00%
D3	Pašaprūpe	12,50%
D4	Saprašanās ar cilvēkiem	00,00%
D5	Ikdienas dzīves aktivitātes	62,50%
D6	Līdzdalība sabiedrībā	65,66%
Kopā:	**36 punktu versija**	**28.99%**

Novērtējums pēc WHODAS 2.0 01.04.2022

D1	Izpratne un komunikācija	0,00%
D2	Mobilitāte	10,00%
D3	Pašaprūpe	0,00%
D4	Saprašanās ar cilvēkiem	0,00%
D5	Ikdienas dzīves aktivitātes, darbs	46,88%
D6	Līdzdalība sabiedrībā	78,13%
Kopā:	**36 punktu versija**	**22,50%**

- Pacients saņēmis ilgstošu rehabilitācijas kursu stacionārā, atkārtotu rehabilitācijas kurss stacionarā fizioterapeita, ergoterapeita, logopēda un psihologa uzraudzībā.
- Gadu kopš saslimšanas saglabājas pārmaiņas plaušās, datortomografijā vērojama fibroze un bronhektāzes abās plaušās pēc pārsciesta smagās pakāpes COVID19 infekcijas ar nelielu pozitīvu mainību dinamikā.
- Gadu pēc saslimšanas pacients nav pilnībā atgriezies pie saviem darba pienākumiem

Pacientam pēc smagas COVID infekcijas gaitas ilgstoši saglabājas funkcionēšanas traucējumi, vairāk ka gadu.
Pacientam ar 100% plaušu bojājumu nepieciešama ilgstošā skābekļa atbalsta terapija
Pacientam 9 mēnešus kopš slimības vislielāki funkcionēšanas ierobežojumi līdzdalības līmenī
Smagiem COVID19 pacientiem nepieciešams multiprofesionālās/ interdisciplinārās komandas darbs

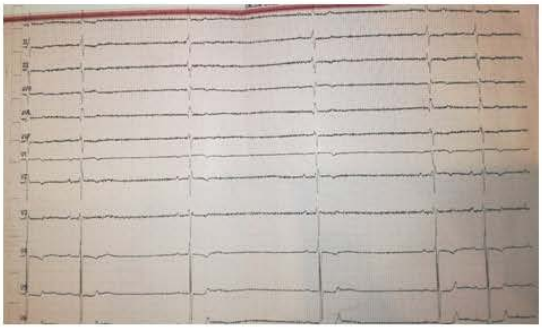
Geriatriska pacienta individualizētas terapijas pieejas nozīme

Vineta Antiņa- Dukule
Geriatrijas rezidents
Rīgas Stradiņa universitāte
RAKUS Nieru slimību un nieru aizstājterapijas klīnika
Anda Grigāne, Jūlija Voicehovska Dr.Med., Dace Trumpika

Pacients ar medikamentu izraisītu hiperkaliēmiju, bradikardiju. Stacionēts ar sūdzībām par izteiktu elpas trūkumu, iespējamu SARS-CoV-2 infekciju, nevakcinēts. Lai gan pacientu izmeklējot konstatē pneimoniju, SARS-CoV-2 infekcijas diagnoze neapstiprinās. Neraugoties uz epidemioloģisko situāciju, geriatriska profila pacientam nozīmīga individualizēta aprūpe un ārstēšana.

Gadījuma apraksts

Pacients 90g.v., stacionēts ar sūdzībām par diskomforta sajūtu aiz krūšu kaula, progresējošu elpas trūkumu, reibšanas sajūtu, roku un kāju tirpoņu. NMP etapā: T- 36,6°C TA- 73/35 mmHg; Pulss- 23x/min; SpO2- 94%. No anamnēzes zināms, ka pacients iepriekš stacionēts ar līdzīgām sūdzībām (2 mēnešu laikā). Iepriekšējās stacienēšanas laikā diagnosticē neārstētu primāru arteriālu hipertensiju II-III, Hipertensīvu sirds slimību. Ātriju fibrilāciju, paroksismālu formu, kā arī hronisku sirds mazspēju III f.k.pēc NYHA, dekompensācija iestājoties- abpusējs hidrotoraks. Kreisās puses pneimonija. Pacients regulāri lieto: *Nebivalol 7,5mg, Digoxin 0,125mg (katru dienu), Edoxaban 30mg, Spironolactone 25mg, Ramipril 5mg, Furosemide 10mg, Isosorbide mononitras 30mg.*
NMPUK etapā EKG sinusa bradikardija ar ar I pakāpes AV blokādi ar atsevišķām supraventrikulārām ekstrasistolēm. Izteikta kreisās ass deviācija. Nepilna labās kājiņas blokāde. Iestāšanās brīdī kālijs- **7,16** mmol/l, ar konservatīvas terapijas palīdzību, tā samazinājumu neizdodas panākt, tiek uzsākta nieru aiztājterapija- nepārtraukta hemodialīze (15 stundu) nātrija bikorbonāta buferi un K-0. Kreatinīns **210,0** mkmol/l; GFA (MDRD)- **27,47** ml/min. Kālijs līmenis NAT- HD- ir **5,29** mmol/l. SARS-CoV-2 RNS atkārtoti ir negatīvs. Kreatinīns- **157** mkmol/l; GFA (MDRD)- **38,43** ml/min, K- **4,5 mmol/l**.
Izrakstoties pacientam ir ātriju fibrilācija, parokismāla forma ar vidējo kambaru frekvenci 106x/min. Primāra arteriāla hipertensija I pakāpe, ar MOB. Hroniska sirds mazspēja II-IIIf.k.pēc NYHA. Hroniska nieru slimības akūta dekompensācija ar elektrolītu disbalansu uz medikamentu (Spirix, Digoxin) lietošanas fona ar daļēju nieru funkcijas atjaunošanos (GFĀ 27,47 ml/min -> 38,43ml/min pēc MDRD), saglabātu diurēzi. Nepārtraukta nieru aizstājterapija- hemodialīze (05.03.2022.-06.03.2022.) Hroniska smadzeņu išēmija.



	Kreatinīns mmol/l	GFA (MDRD)	Kālijs mmol/l	Nātrijs mmol/l
04.01.22.	109	58,58	4,74	137
05.03.22.	210,0	27,47	7,16	144
06.03.22.	157,0	38,43	5,29	-
08.03.22.	-	-	4,5	142

Pieaugot vidējam iedzīvotāju vecumam, palielinās to iedzīvotāju skaits, kuri ir vecuma grupā >85g.v., ar polimorbīdām saslimšanām, terapijas pieejai jābūt individualizētai. (1., 5., 7.) Svarīgi ir izvērtēt ieguvumus un riskus no plānotās terapijas, un par to informēt pacientu. Rekomendējama polifarmācijas riska izvērtēšana polimorbīdiem pacientiem. Kā izvērēšanas instrumenti pielietojami Beers un START/STOP kritēriji. (1., 2.,5.) Hiperkaliēmija asociējas ar paaugstinātu mirstību no sirds ritma traucējumiem. (6.) Būtiski ir novērtēt tās attīstības risku, ordinējot tādus preparātus kā: Spironolactone, Digoxin un AKEi un īpaši, šo medikamentu kombināciju pacientiem ar samazinātu GFĀ. (3., 4.)

Izmantotie resursi:

1.https://www.researchgate.net/publication/303766529_Priority_Setting_and_Influential_Factors_on_Acceptance_of_Pharmaceutical_Recommendations_in_Collaborative_Medication_Reviews_in_an_Ambulatory_Care_Setting_-_Analysis_of_a_Cluster_Randomized_Controlled
2. Gallagher P, Ryan C, O'Connor M, Byrne S, O'Sullivan D, O'Mahony D. STOPP (Screening Tool of Older Persons' Prescriptions)/START (Screening Tool to Alert Doctors to Right Treatment) criteria for potentially inappropriate prescribing in older people: version 2. Age and Ageing 2014; O: 1-6
3.https://oxfordmedicine.com/view/10.1093/med/9780198701590.001.0001/med-9780198701590-chapter-172
4.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8673062/
5.https://www.guidelinecentral.com/guideline/340784/
6.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5637309/
7.https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates

H_2S and Ca^{2+} mediated vascular contraction in pulmonary arteries

Silvijus Abramavičius[1], Augusta Volkevičiūtė[2], Agilė Tunaitytė[2], Mantas Venslauskas[3], Algimantas Bubulis[3], Vytis Bajoriūnas[4], Kasparas Briedis[2], Ulf Simonsen[5], Edgaras Stankevičius[1,3]

1. Institute of Physiology and Pharmacology, Lithuanian University of Health Sciences, Kaunas, Lithuania
2. Institute of Cardiology, Lithuanian University of Health Sciences, Kaunas Lithuania
3. Institute of Mechatronics, Kaunas University of Technology, Kaunas, Lithuania
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5. Department of Biomedicine MD, PhD, Department of Biomedicine, Pulmonary and Cardiovascular Pharmacology, Aarhus University

Actuality / The Goal

H_2S is a that mediates vascular relaxation. H_2S could attenuate the SARS-CoV-2-related "cytokine storm" , attenuate alveolar epithelial cell pro-inflammatory cytokine release, and reverse endothelial dysfunction in COVID 19 (T.Datzmann et al. 2021). We tested the hypthothesis that H_2S can have constrictor effects on pulmonary vessels and to see if these effects can be modulated with low-frequency ultrasound (LUS, 20 kHz, 4 W/cm^2).

Methods

Human and rat pulmonary arteries were dissected from the vascular bed and mounted on the 40-µm steel wires in the myographs (Danish Myotechnology, Aarhus, Denmark) for isometric tension recording.

Results

GYY 4137 causes a dose dependent vascular contraction in the isolated human pulmonary vessels. We also observed similar effects in rat lung pulmonary vessels were GYY4137 from 1×10^{-5} M to 1×10^{-4} M causes vascular contraction from 126.21 percent to 158.46 percent (n=2, data not shown) in terms of % KPSS maximal contraction. This effect seems to be partially reversible with insonation in human pulmonary arteries (Figure 1) and rat lung arteries were vessels contracted with GYY4137 from 1×10^{-5} M to 1×10^{-4} M causes vascular contraction from 101.45 percent to 106.60 percent after insonation (n=2).

Thromboxane A2 (TP) receptor agonist U46619 was used to contract human lung vessels in the PSS without Ca^{2+} with subsequently added $CaCl_2$ solution in increasing $CaCl_2$ concentrations from 3×10^{-6} M to 1×10^{-4} M to construct a dose response curve (Figure 2). The insonated vessels exhibited lower contraction during insonation. The addition of GYY 4137 to the U46619 precontracted vessels did not produce vascular relaxation (data not shown).

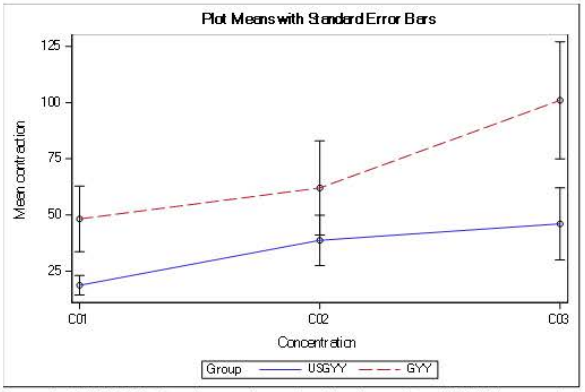

Figure 1. GYY4137 induced vascular contraction insonation (USGYY) vs. control (GYY). Two-way (class factors: groups and concentration) analysis of variance (ANOVA): F(8)= [3.22, 10.86], p= [0.1106, 0.0052], n =5 per group. The graphs represent the vascular response to increasing concentrations of GYY4137: C01 = 3×10^{-6} M, C01 = 1×10^{-5} M, C02 = 3×10^{-5} M, C03 = 1×10^{-4} M.

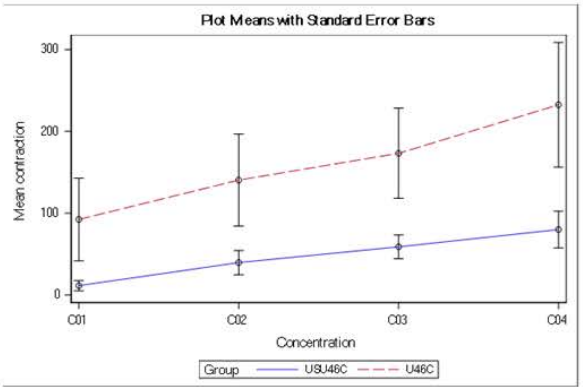

Figure 2. U46619 and $CaCl_2$ induced vascular contraction insonation (USU46C) vs. control (U46C). Two-way (class factors: groups and concentration) analysis of variance (ANOVA): F(8)= [5.66 , 21.64], p= [0.0489, 0.0006], n =5 per group. The graphs represent the vascular response to increasing concentrations of extracellular $CaCl_2$: C01 = 3×10^{-6} M, C02 = 1×10^{-5} M, C03 = 3×10^{-5} M, C04 = 1×10^{-4} M.

Conclusions

We tested the effect of low-frequency ultrasound (LUS, 20 kHz, 4 W/cm2) and the GYY4137 on the function human pulmonary arteries with wire myography. GYY 4137 produced a dose dependent human pulmonary artery contraction in physiologic saline solution (PSS) partly reversible with LUS and that this effect can be partly explained by reduced influx of the extracellular Ca^{2+} because the LUS reduces vascular contraction to $CaCl_2$ in the vessels incubated U46619 in the PSS without Ca^{2+}.

HLA-DQB1*05:01 alēle ietekmē humorālo imūnatbildi pirmreizējās SARS-CoV-2 infekcijas gadījumā

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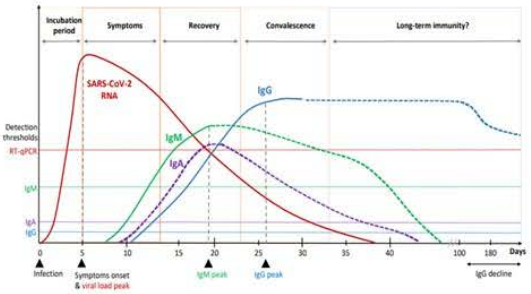
VPP Valsts pētījumu programma
Nr.VPP-COVID-2020/1-0023

Aktualitāte / Mērķis

Antivielu produkcija ir svarīgs specifiskās imunitātes mehānisms aizsardzībā pret vīrusiem, tajā skaitā pret jauno vīrusu SARS-CoV-2. Antivielas pastiprina komplementa sistēmas aktivāciju, fagocitozi, imūno šūnu citotoksicitāti un spēj neitralizēt brīvus vīrusus, kas ir svarīgi vīrusa infekcijas sekundārajā profilaksē.



1. attēls. SARS-CoV-2 antivielu kinētika (*Koch et al.*, 2021)

Antivielu produkcija ir atkarīga no imūno šūnu mijiedarbības, kas ietver sevī antigēna epitopa prezentāciju uz antigēnprezentējošās šūnas virsmas saistībā ar MHC II (*Major Hystocompatibility Complex*) molekulu, naivo CD4+ T limfocītu nobriešanu līdz 2. tipa T līdzētājšūnām, kā arī B limfocītu proliferāciju un nobriešanu līdz šūnām, kas sekretē antivielas. Tādejādi, MHC jeb HLA (*Human Leukocyte Antigen*) II klases gēni, kuri kodē MHC II klases molekulas, ir antivielu produkciju ietekmējošie faktori.

Mērķis: Novērtēt HLA II klases alēļu saistību ar anti-SARS-CoV-2 IgM un IgG antivielu produkciju pacientiem, kuri iepriekš nebija slimojuši ar Covid-19, kā arī nebija vakcinēti.

Metodes

Retrospektīvs pētījums. Visi pacienti tika hospitalizēti RAKUS no 2020. gada septembra līdz decembrim.

Sākotnējo grupu veidoja 101 pacients ar apstiprinātu Covid-19 diagnozi vecumā no 26 līdz 85 gadiem (vid. vecums bija 60 gadi ± 14), 50% bija sievietes. No tiem 61 pacients bija ar vieglu vai vidēji smagu (PVO I) un 40 pacients ar smagu un kritisko (PVO II-III) slimības norisi. Ņemot vērā, ka pirmreizējās infekcijas gadījumā specifisko antivielu produkcija sākas vidēji 5.-7. dienā, no gala analīzes tika izslēgti pacienti, kuriem antivielu testi tika noteikti agrāk par 7. slimības dienu (21 cilvēks, 20%).

HLA gēnotipēšana tika veikta 3 lokusos (-DRB1*, -DQA1* un -DQB1*), izmantojot *SSP* ar reālā laika PĶR (DNA-Technology). Anti-SARS-CoV-2 IgM un IgG tika noteiktas ar ELISA (ARCHITECT, Abbott). Pozitīvie testi bija definēti, ja IgM bija ≥ 1,0 un ja IgG bija ≥ 1,4. $CD4^+$ T limfocītu skaits tika noteikt ar automatizētu analizatoru.

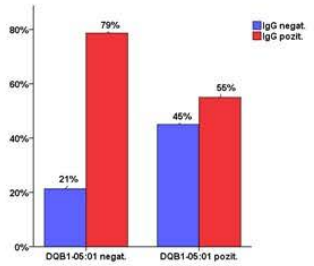
Rezultāti

Gala izlasi veidoja 80 pacienti. Pozitīvie IgM testi bija konstatēti 64 un pozitīvie IgG 58 cilvēkiem. Hospitalizācijas laikā serokonvalescence netika novērota 13 cilvēkiem (1. tabula).

1. tabula. Pozitīvie un negatīvie SARS-CoV-2 antivielu testi pēc 7. slimības dienas

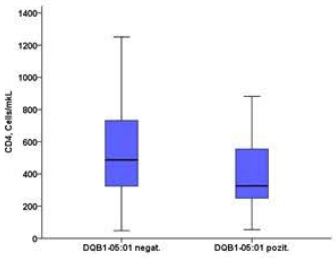
	IgG negatīvs	IgG pozitīvs	Kopā
IgM negatīvs	13 (16%)	3 (4%)	16 (20%)
IgM pozitīvs	9 (11%)	55 (69%)	64 (80%)
Kopā	22 (27%)	58 (73%)	80 (100%)

No visām alēlēm tikai HLA-DQB1*05:01 uzrādīja saistību ar vājāku IgG klases antivielu produkciju. Pacientiem ar HLA-DQB1*05:01 tika novērotas zemākas izredzes būt seropozitīviem, OR=0,33; 95% CI (0,11; 0,97); p=0,043 (2. attēls).



2. attēls. Pozitīvo un negatīvo IgG testu biežumi pacientiem ar un bez HLA-DQB1*05:01 alēli genotipā

Turklāt, pacientiem ar HLA-DQB1*05:01 bija zemāks $CD4^+$ T limfocītu skaits (Me=326 šūnas/µl, IQR [245; 562], n=18) nekā pacientiem bez šīs alēles genotipā (Me=428 šūnas/µl, IQR [318; 733], n=47), U=272,0, p=0,027 (3. attēls).



3. attēls. Atšķirības $CD4^+$ T limfocītu skaitā atkarībā no HLA-DQB1*05:01 klātbūtnes genotipā

Secinājumi

Vājāka antivielu produkcija un izteiktāka imūnsupresija pirmreizējās SARS-CoV-2 infekcijas gadījumā ir saistīta ar HLA-DQB1*05:01 alēles klātbūtni genotipā, apliecinot ģenētisko predispozīciju humorālās imūnatbildes īpatnībām.

HLA-DQB1*05:01 allele affects the primary humoral response against SARS-CoV-2
We performed typing of HLA-DRB1*, -DQA1*, -DQB1* genes and analyzed the level of anti-SARS-CoV-2 IgM and IgG, and CD4 T lymphocyte count in 101 patients with COVID-19. Weaker antibody production and more pronounced immunosuppression were associated with the presence of the HLA-DQB1*05:01 allele in the genotype.

HYDROTHERAPY- STIMULATED RESPIRATORY SYSTEM REHABILITATION FOR PEOPLE RECOVERING FROM COVID-19

PhD Alina Kurmeleva
Latvian Academy of Sport Education

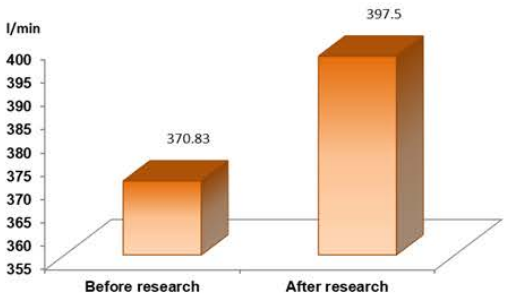
Actuality / The Goal

The COVID-19 pandemic has obvious effects on people's health and mental state. COVID-19 is known to be a respiratory disease that is usually mild and starts gradually with such symptoms as fever, cough, sore throat, difficulty breathing. About one in six people infected with COVID-19 has a severe course of the disease, with severe breathing problems. Therefore, after recovery from COVID-19, people should pay close attention to respiratory rehabilitation.
Hydrotherapy is known to be an integral part of rehabilitation after various diseases and often used to improve the respiratory function.

Methods

The pilot study was conducted to identify the efficiency of hydrotherapy for respiratory rehabilitation after the COVID-19 disease and was from 17 January 2022 to 20 February 2022. 12 subjects aged 19-62 recovering from COVID-19 took part in the pilot study and were observed up to one month after COVID-19. The experiment was carried out at Salaspils swimming pool. A course of breathing exercises in water was prepared. The course consisted of 10 practical lessons 45 minutes each.
Before starting the research, the following measurements were taken: oxygen saturation, chest excursion, breathing frequency, and the peak expiratory flow (PEF).

Dynamics of the average results in PEF measurements in the experimental group (n=12)



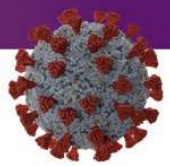
Results

The analysis of the subjects' heart rate and oxygen saturation (SpO2) at the start and end of the research showed that before and after the research the measurements of the heart rate (p=0.104) and oxygen saturation (p=0.157) were quite similar and statistically not different (α>0.05). The mean result of the heart rate in the experimental group before the pedagogical experiment was 62.5±7.7 beats/min and after the experiment – 62.17±7.96 beats/min.
The analysis of the subjects' average difference in chest excursion and breathing frequency at the start and end of the research showed that before and after the research breathing frequency measurements (p=0.096) were quite similar and statistically not different (α>0.05), and chest excursion (p=0.001) was different and statistically significant (α<0.05).
The mean breathing frequency result at rest in the experimental group before the experiment was 28.92±3.4 number/min, and after the experiment – 28.5±3.15 number/min. The mean result of a difference in chest excursion in the experimental group increased from 7.08±1.56 cm to 7.75±1.42 cm.
The analysis of the subjects' PEF at the start and end of the research showed that before and after the research the PEF measurement (p=0.001) difference was statistically significant, α<0.05. The mean PEF result in the experimental group before the experiment was 370.83±75.25 L/min, and after the experiment – 397.5±77.24 L/min.

Conclusions

The comparison of the average results in different measurements before the research with the results at the end of the research showed changes in two indicators.
The analysis of the average result dynamics in the heart rate and oxygen saturation measurements during the experiment showed that the difference was statistically insignificant, α>0.05.
The analysis of the breathing frequency dynamics during the experiment showed that the difference was statistically insignificant, α>0.05, but the difference in chest excursion was statistically significant, α<0.05. Chest excursion in the pedagogical experiment the increase was about 0.67±0.49 cm.
The analysis of the PEF dynamics during the experiment showed that the difference was statistically significant, α<0.05, which implied an increase in the subjects' PEF after the research and that their respiratory system worked more efficiently. At the end of the research, PEF was by 26.67±21.88 L/min higher than at the beginning of the experiment.
The effectiveness of the hydrotherapy-stimulated respiratory system rehabilitation course was positive in terms of PEF and chest excursion difference.
This pilot study experimental group helped to determine the next steps of the study and specified if any adjustments in the methodology were required.
One of the steps is to improve the validity of the study for which the number of subjects should be increased (n=30).

Ieildzis Covid 8 gadus vecam bērnam: klīniskā gadījuma apraksts



Gundega Skruze-Janava
GSM Medical – ģimenes ārsta prakse
Rīgas Stradiņa universitātes Morfoloģijas katedra

Ievads

Atbilstoši Pasaules Veselības organizācijas definīcijai, ieildzis Covid (jeb post-Covid sindroms) ir medicīnisks stāvoklis, kas parādās 3 mēnešu laikā pēc pārslimotas covid-19 infekcijas, ilgst vismaz 2 mēnešus, ar simptomiem, kas nav izskaidrojami ar citām saslimšanām. Simptomi var turpināties pēc akūti pārslimota Covid-19, vai arī attīstīties pēc sākotnējas atveseļošanās; tie var būt mainīgi laika gaitā.[1]

Līdz pat 40% bērnu līdz 18 gadiem pēc Covid-19 pārslimošanas vēl 8 nedēļas cieš no post-Covid sindroma[2], 1,8% bērnu ieildzis Covid turpinās ilgāk par 56 dienām.[3] Riska faktori ieilguša covid attīstībai bērnu populācijā ir lielāks vecums, kā arī smaga vai kritiski smaga akūtās Covid-19 slimības gaita. Visbiežākie simptomi ir nogurums, elpas trūkums un slodzes intolerance.[4]

Slimības gaita

- Zēns, 8 gadus vecs, psihomotorā attīstība vecumam atbilstoša, hronisku saslimšanu nav. Fiziski aktīvs, 1-2 reizes nedēļā apmeklē futbola treniņus.
- Saslimst 2020.gada rudenī; pirmie akūtas slimības simptomi – aizlikts deguns, paaugstināta ķermeņa temperatūra 37,3ºC.
- Slimības 3. dienā apstiprināts Sars-Cov-2 RNS nazofaringeālajā uztriepē.
- Saslimšanas akūtā fāze ilgst 7 dienas: ir febrili temperatūras pacēlumi līdz 39,5ºC; aizlikts deguns, kakla sāpes, klepus; galvassāpes; sāpes vēderā, slikta dūša.
- No 14.-21. slimības dienai turpinās subfebrili temperatūras pacēlumi līdz 37,8ºC, neproduktīvs klepus, nogurums, galvassāpes līdz 6-7 pēc vizuālās analogās sāpju skalas (VASS).
- Pēc 21. slimības dienas simptomi turpinās, pieaug galvassāpju intensitāte līdz 8-9 pēc VASS skalas. Parādās fotofobija, muskuļu sāpes, locītavu sāpes, sāpes krūtīs.
- Simptomu intensitāte mazinās pēc 3. mēneša kopš saslimšanas sākuma, pilnībā izzūd 6 mēnešus kopš slimības sākuma.
- Subfebrili temperatūras pacēlumi turpinās 5 mēnešus kopš saslimšanas 1. dienas.
- Mācību procesu attālināti atsāk no 70. dienā kopš saslimšanas sākuma.
- 8 mēnešus pēc slimības sākuma bērns skolā mācās labi, atgriežas pie ierastām fiziskajām aktivitātēm.

Simptomu salīdzinājums akūtajā fāzē un post-Covid fāzē

Simptomi	Akūtā fāze (1.-7. diena)	Post-Covid fāze (līdz 6 mēnešiem pēc slimības sākuma)
Vispārēji simptomi	Febrila temperatūra	Subfebrila temperatūra
Respiratori simptomi	Sauss klepus Aizlikts deguns Kakla sāpes	Kairinošs klepus
Neiroloģiski simptomi	Galvassāpes	Galvassāpes Fotofobija Nogurums
Gastrointestināli simptomi	Sāpes vēderā Slikta dūša	
Citi		Sāpes muskuļos Sāpes locītavās Sāpes krūtīs

Veiktie izmeklējumi

- Slimības 30., 43., 57. dienā un 6 mēnešus kopš saslimšanas sākuma pilna asins aina, urīna analīze, koagulācijas rādītāji, asins bioķīmiskie rādītāji – bez būtiskas novirzes no normas.
- Laikā no 13.-68. dienai veiktie attēldiagnostikas izmeklējumi rentgenogramma un datortomogrāfija, magnētiskā rezonanse ar angiogrāfiju galvai, ultrasonogrāfija vēdera dobuma orgāniem, gūžu un locītavām – bez patoloģiskas atrades.
- Pēdu locītavu ultrasonogrāfija 64. slimības dienā: viegla sinovīta pazīmes kreisajā pēdas locītavā.

Saņemtā ārstēšana

- Medikamentozā terapija:
  - ✓ Simptomātiska terapija slimības akūtajā fāzē.
  - ✓ Ibuprofēns vai paracetamols epizodiski pie temperatūras pacēlumiem >38ºC un/vai stiprām galvassāpēm, vidēji 1-2 reizes nedēļā, apmēram 4 mēnešus ilgi.
  - ✓ Holekalciferols 1000 IU 1 reizi dienā no slimības 33. dienas.
- Klīniskā psihologa konsultācijas 2 mēnešus, sākot ar 3. mēnesi kopš saslimšanas sākuma.
- Ambulatorā rehabilitācija – fizioterapija 2 mēnešus, sākot ar 3. mēnesi kopš saslimšanas sākuma.

Secinājumi

- Ieilgušam Covid raksturīgs plašs simptomu klāsts, kas norāda uz dažādu orgānu sistēmu disfunkciju.
- Lai arī smaga un kritiski smaga Covid-19 klīniskā gaita ir augstāks riska faktors ieilgušā Covid attīstībai imūnsistēmas aktivitātes un citokīnu vētras dēļ[4], post-Covid sindroms var attīstīties arī pēc klīniski viegli pārslimota Covid-19.
- Pacienta saslimšana norisinājās laikā, kad bija pieejami dažu atsevišķu pētījumu dati par post-Covid sindroma gaitu pieaugušo un bērnu populācijā, tādēļ veikti vairāki resursu ietilpīgi diagnostiskie izmeklējumi, lai izslēgtu orgānu bojājumu.
- Terapijas iespējas post-Covid sindroma gadījumā ir ierobežotas; uzsvars liekams uz rehabilitācijas pasākumiem.

Atsauces

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IEKAISUMA INFILTRĀTA MORFOLOĢIJA PACIENTIEM AR LETĀLU COVID-19 NORISI

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Aktualitāte / Mērķis

Līdz 2022. gada martam Latvijā ir vairāk nekā 5500 letālu COVID-19 gadījumu. Šo pacientu nāves cēloņa verifikācijai nereti tiek veiktas autopsijas.. Relatīvi lielais Latvijā veikto autopsiju skaits dod pētniekiem iespēju analizēt SARS-CoV-2 izraisītās morfoloģiskās pārmaiņas mirušo pacientu iekšējos orgānos. Šādu datu pasaules literatūrā vēl aizvien ir maz. Sākotnējie pētījumi liecina, ka COVID-19 izraisa klasisku vīrālu pneimoniju morfoloģisko ainu, ko raksturo relatīvi neliels iekaisuma infiltrāts. Dominējošās šūnas ir makrofāgi un limfocīti nelielā skaitā, savukārt neitrofilo leikocītu klātesamība nereti liecina par attīstījušos superinfekciju. Šī darba mērķis ir izvērtēt pacientu plaušu iekaisuma infiltrāta morfoloģiju un meklēt iespējamas korelācijas ar klīniskajiem datiem.

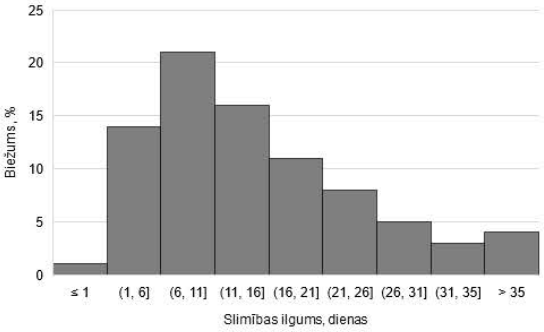
Metodes

Pētījuma ietvaros tika apkopoti anonīmi dati no 88 klīniski indicētām autopsijām, kas veiktas RAKUS stacionārā "Gaiļezers" COVID-19 pozitīviem mirušajiem pacientiem. Visi plaušu audu paraugi tika atkārtoti izvērtēti ar gaismas mikroskopijas metodi. Iekaisuma infiltrāta plašums tika fiksēts oriģinālā, anonīmā protokolā, pielietojot semikvantitatīvu datu analīzi (0, attiecīgo iekaisuma šūnu nav; 1, retas šūnas; 2, vidēji daudz šūnu; 3, daudz šūnu). Daudzkodolaino gigantšūnu klātbūtne audos tika izvērtēta kā kvalitatīvs, kategorisks, binārs parametrs (ir/nav). Tika apkopoti nozīmīgi pacientu demogrāfiskie (vecums, dzimums) un klīniskie (slimības ilgums) parametri, kas hipotētiski varētu korelēt ar morfoloģisko atradni. Datu analīze tika veikta, izmantojot *IBM SPSS Statistics* (ražotājs *IBM, Armonk, NY, USA*) programmatūru.

Rezultāti

No 88 pētījumā iekļautajiem pacientiem, 56 bija vīrieši un 32 sievietes. Vecuma mediāna bija 64 gadi, bet vidējais vecums 62 gadi (diapazons 28 – 94; SD 15,6). Slimības ilguma mediāna bija 14 dienas un vidējā vērtība 15 (diapazons 0 – 47; SD 10,1). Slimības ilguma biežums attēlots 1. grafikā. Tika veikta statistiska analīze, lai noskaidrotu, vai slimības ilgums atbilst normālajam sadalījumam, pielietojot Komogorova-Smirnova testu. Balstoties uz to, datu kopa neatbilst normālajam sadalījumam ($p = 0.005$).

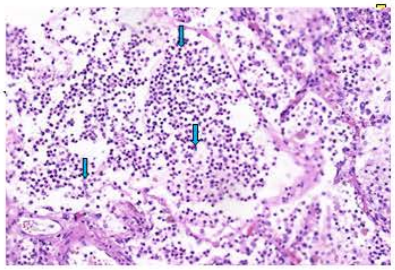
1. grafiks. Slimības ilguma biežuma sadalījums



Iekaisuma infiltrāta morfoloģijā dominēja makrofāgi un limfocīti. Makrofāgus lielā vai vidēji lielā skaitā novēroja 60,2%, savukārt limfocītus mazā vai vidēji lielā skaitā 82,9% gadījumu. Neitrofilos leikocītus novēroja mazāk nekā pusei pacientu (46,6%), un to palielināts skaits vairākkārt liecināja par bakteriālu (1. attēls) vai fungālu superinfekciju (2. attēls), ko novēroja 18,2% gadījumu. Daudzkodolainas gigantšūnas konstatēja 68,2% pacientu.

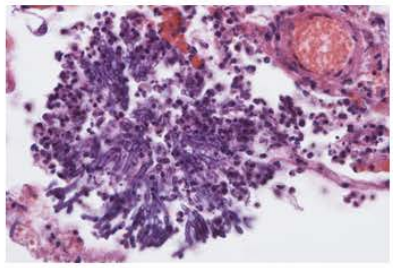
Lai novērtētu iespējamu korelāciju starp neitrofilo leikocītu daudzumu un superinfekcijas klātesamību, tika izmantots Fišera ekzaktais tests. Starp abiem parametriem pastāvēja statistiski nozīmīga korelācija ($p < 0.001$). Korelācijai starp slimības ilgumu un superinfekcijas klātesamību tika pielietots Manna-Vitnija tests. Šī korelācija nebija statistiski nozīmīga ($p = 0.845$).

1. attēls



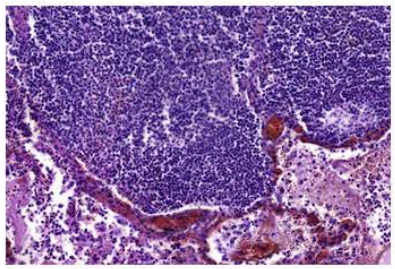
Raksturīgā iekaisuma infiltrāta morfoloģija pacientam ar bakteriālu superinfekciju. Alveolu lūmenā redzams liels daudzums neitrofilo leikocītu (zilās bultas). Hematoksilīns – eozīns, x200.

2. attēls



Mikroskopiski identificēta sēnīšu hifu kolonija. Hematoksilīns – eozīns, x400.

3. attēls



Ļoti blīvs iekaisuma infiltrāts pacientam ar fungālu koinfekciju. Šajā gadījumā dominējošās iekaisuma šūnas ir limfocīti un makrofāgi. Hematoksilīns – eozīns, x200.

Secinājumi

Plaušu audu autopsijas materiālā dominējošās iekaisuma šūnas bija makrofāgi un limfocīti. Neitrofīlos leikocītu novēroja mazāk nekā pusei pacientu.

Par bakteriālu infekciju netieši liecināja neitrofīlie leikocīti, jo korelācija starp neitrofilo leikocītu daudzumu un superinfekcijas klātesamību bija statistiski nozīmīga ($p < 0.001$).

Iepriekšminētais liecina, ka iekaisuma infiltrāta morfoloģiju nozīmīgi ietekmē superinfekcijas attīstība. Klasiskā COVID-19 letālas gaitas norisē iekaisums ir neizteikts.

Starp slimības ilgumu un superinfekciju nepastāvēja statistiski nozīmīga korelācija ($p = 0.845$).

Ir nepieciešami vairāki pētījumi, lai noskaidrotu citus iespējamus klīniskos cēloņus superinfekciju attīstībai.

Intermitējoša hemofiltrācija ar augstas plūsmas filtru kombinācijā ar citokīnu filtru pacientam ar plašu abpusēju Covid-19 pneimoniju un "citokīnu vētru"

Dr.E.Skruļa[1], Dr.A.Grigāne[1], Prof.Dr.J.Voicehovska[1], Dr.D.Trumpika[1], Dr.E.Bormane[1], Dr.K.Kivlenieks[1]

1 Rīgas Austrumu Klīniskās Universitātes slimnīca Nieru slimību un nieru aizstājterapijas klīnika

Ievads

Iekaisuma citokīnu, tostarp interleikīna 6 (IL-6), koncentrācija asinīs tieši nosaka Covid-19 infekcijas gaitu. Augsta IL-6 koncentrācija asinīs ("citokīnu vētra") var izraisīt akūtu respiratoru distresa sindromu (ARDS) un multiorgānu disfunkcijas sindromu (MODS). Gan nepārtraukta, gan intermitējoša nieru aizstājterapija kombinācijā ar citokīnu filtru var mazināt ARDS un MODS attīstību un progresiju, samazinot citokīnu un citu iekaisuma mediatoru daudzumu (Saniya Rizvi, 2020).

Šajā klīniskajā gadījumā mēs aprakstām ekstrakorporālu terapiju – intermitējošu hemofiltrāciju ar augstas plūsmas filtru kombinācijā ar citokīnu filtru pacientam ar plašu abpusēju Covid-19 pneimoniju un "citokīnu vētru".

Gadījuma apraksts

63 gadus vecs vīrietis bez nozīmīgām blakussaslimšanām tika hospitalizēts ar elpas trūkumu, klepu un paaugstinātu ķermeņa temperatūru.

Slimo 2 nedēļas. Slimības 7.dienā apstiprināts pozitīvs SARS-CoV-2 PCR tests.

Iestājoties:

Ķermeņa temperatūra	37,0ºC,
Sirdsdarbība	90, x/min, ritmiska
Asinsspiediens	118/61 mmHg
Elpošana	16-20 , x/min
Skābekļa saturācija	91-93 % Ar augstas koncentrācijas skābekļa masku 15 l/min

Laboratoriskās analīzes (skat. tabulu Nr. 1): augsta IL-6 koncentrācija – 1093 pg/ml.

Datortomogrāfija plaušām (skatīt attēlu Nr.1).

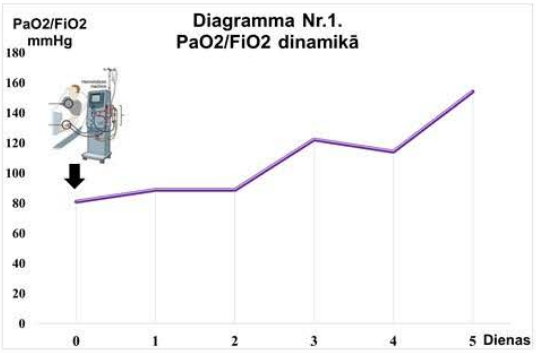
Attēls Nr.1
Abpusēja vīrusa pneimonija ar plaušu parenhīmas bojājumu virs 2/3.

Intensīvās terapijas nodaļā:

Akūti uzsākta intermitējoša hemofiltrācija ar augstas plūsmas filtru kombinācijā ar citokīnu filtru		Paralēli
Procedūras ilgums	3,5 stundas	Rehidratācija
Anti-koagulācija ar heparīnu	• Procedūras laikā : 2000-3000 DV/h • Kopējā deva 11500 DV	Glikokortikoīdi Antibakteriālā terapija
Aktivētais asinsreces laiks (ACT)	155 līdz 177 sekundes	Anitkoagulanti* terapeitiskā devā * pēc hemofiltrācijas

Saņemtās terapijas rezultātā IL-6 līmenis samazinājās no 1093 pg/ml līdz 8,34 pg/ml un saglabājās zems.

Dinamikā mazināts nepieciešamais skābekļa atbalsts (skat. diagrammu Nr.1) un pacients 5.hospitalizācijas dienā tika pārvests uz terapeitiska profila nodaļu.



Neskatoties uz antikoagulantu terapiju, pacientam attīstījās pēkšņs elpas trūkums. Radioloģiski - abpusēja segmentāro un subsegmentāro zaru plaušu artēriju trombembolija. Lai gan pacienta vispārējais stāvoklis uzlabojās, 14. hospitalizācijas dienā – atkārtoti elpas trūkums, bezsamaņas epizode, sirdsdarbības apstāšanās un kardiopulmonāla reanimācija, kas bez efekta.

Secinājumi

1. Šajā gadījumā aprakstīta intermitējoša hemofiltrācija kombinācijā ar citokīnu filtru kā multidisciplināras ārstēšanas pieejas sastāvdaļa Intensīvās terapijas nodaļā pacientam ar plašu abpusēju Covid-19 pneimoniju un "citokīnu vētru".
2. Laicīgi uzsākta hemofiltrācija kombinācijā ar citokīnu filtru Covid-19 pozitīviem pacientiem var mazināt "citokīnu vētru", jo spēj samazināt IL-6 un citu cirkulējošo iekaisuma mediatoru koncentrāciju asinīs, samazinot pacientam nepieciešamo skābekļa atbalstu.
3. Hemofiltrācija ar citokīnu filtru neizslēdz Covid-19 infekcijas izraisīto komplikāciju, t.sk., trombembolisko notikumu attīstību.
4. Ekstrakorporālās terapijas iespējas šobrīd ir ļoti plašas un tās arvien biežāk tiek izmantotas kritiski smagu pacientu ārstēšanā.

Tabula Nr.1.
Laboratoriskie izmeklējumi dinamikā

ASINS ANALĪZES	REFERENCES INTERVĀLS	0. DIENA	1. DIENA	9. DIENA
ASINS AINA				
Leikocīti (x10^9/l)	4,00-9,00	6,73	3,72	7,03
Eritrocīti (x10^{12}/l)	4,20-5,80	5,57	5,01	5,02
Hemoglobīns (g/dl)	14,00-16,00	18,00	16,70	16,70
Hematokrīts (%)	39,0-50,0	50,4	46,6	47,4
ASINS KLĪNISKĀ ĶĪMIJA				
Kreatinīns (mkmol/l)	62-106	98	60	77
LDH (U/L)	135-225	542	405	
Ferritīns (ng/ml)	30,0-400,0	3307	3418	2271
Interleikīns-6 (pg/ml)	0-7	1093	8,34	
CRO (mg/l)	0,0-5,0	177,0	186,9	15,4
Prokalcitonīns (ng/ml)	0,00-0,05	2,49	1,55	0,139
KOAGULOĢIJA				
D-dimēri (mkg/ml)	0,00-0,50	17,00	12,49	1,50

Summary

In this clinical case we represent a patient with severe bilateral Covid-19 pneumonia and "cytokine storm" receiving multidisciplinary treatment approach, including intermittent hemofiltration with a high flow filter in combination with a cytokine filter. Received therapy reduced cytokine levels and the required oxygen support. However, the patient died because of Covid-19 related thromboembolic events.

Larifan's anti-SARS-CoV-2 activity *in vitro* and in Golden Syrian hamsters *in vivo*

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Latvian Biomedical Research and Study Centre
research and education in biomedicine from genes to human

Actuality / The Goal

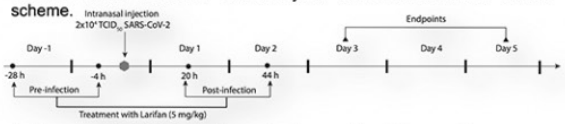
Since the emergence of COVID-19 disease, numerous anti-COVID-19 vaccines have been tested in clinical trials worldwide. Several have been approved and are currently successfully used to immunize people against this novel virus. Nonetheless, antiviral drugs slowing down the replication of SARS-CoV-2 could be beneficial and fulfil an essential role in treating COVID-19 patients, *e.g.* preventing or alleviating disease symptoms.

Bacteriophage-derived dsRNA, also known as Larifan (Larifan Ltd., Riga, Latvia), is a heterogeneous population of dsRNAs. Larifan has been developed as a poly-functional and wide-spectrum antiviral drug.

The goal of this study was to ascertain the antiviral activity of Larifan against the novel SARS-CoV-2.

Methods

SARS-CoV-2 strain: SARS-CoV-2 hCoV-19/Sweden/20- 53846/2020 (lineage B 1.1.7, UK).
Methods: The antiviral activity of Larifan against SARS-CoV-2 *in vitro* was measured in human lung adenocarcinoma (Calu3) and primary human small airway epithelial cells (HSAEC) using cytopathic effect assay, viral RNA copy number detection by digital droplet PCR (ddPCR) and infectious virus titration in Vero E6 cells by end-point titration method. The antiviral effect of Larifan *in vivo* was detected in SARS-CoV-2 infection model in Golden Syrian hamsters as shown in the scheme.

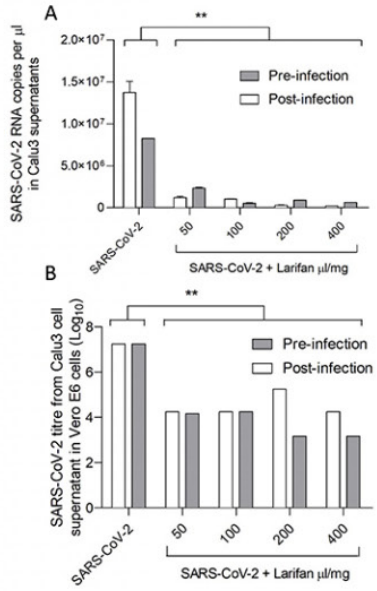


Larifan was administrated either subcutaneously or intranasally.

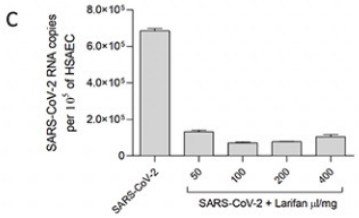
The experimental procedures in animals were approved by the National animal welfare and ethics committee (permit no. 124/2021).

Results

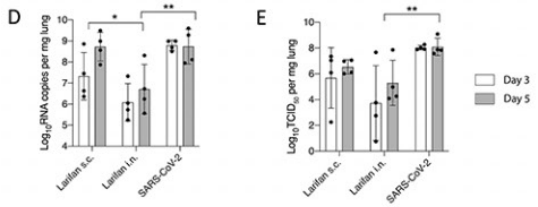
In vitro. Cytolysis of cells was evident only in Calu3 cells. In HSAEC cells, SARS-CoV-2 infection did not elicit the typical cytopathic effect (CPE); however, virus release within supernatant could be measured with the increase of viral RNA copy numbers even until day six.
The administration of Larifan reduced both SARS-CoV-2 RNA copies (A) and infection virus numbers (B) in Calu3 cell supernatant. The decrease in virus presence was observed when Larifan was added 4h before virus infection (pre-infection) and immediately after virus infection (post-infection).



The amount of SARS-CoV-2 RNA copies dropped significantly also in HSAEC cells after 'full-time' Larifan treatment (Larifan added 4h before infection and present till the end of experiment) (C).

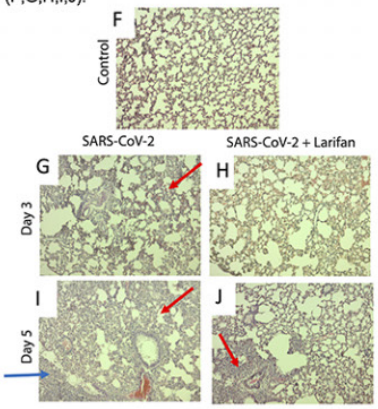


In vivo. The administration of Larifan to SARS-CoV-2 infected hamsters reduced the amount of SARS-CoV-2 virus in hamster's lungs (D,E).



(D) Number of copies of SARS-CoV-2 virus RNA in hamster lungs on days 3 and 5 post infection.
(E) Infectious virus titre in hamster lungs on days 3 and 5 post infection.

Histopathological analysis of hamster lung tissues showed also that administration of Larifan improves infection-induced pathological lesion severity (F,G,H,I,J).



(F) Normal lungs from uninfected control hamster. (G) Alveolar septum fibrosis (red arrow) in lungs of untreated hamster three days post infection. (H) Lungs of Larifan treated hamster three days post-infection. (I) Lungs of untreated hamsters five days post-infection – alveolar lumens filled with inflammatory cells and erythrocytes (blue arrow), peribronchial inflammation (red arrow). (J) Lungs of Larifan treated hamster five days post-infection. Inflammation focal (red arrow). Magnification 100x.

Conclusions

In conclusion, this study showed that:

- Larifan inhibits SARS-CoV-2 replication *in vitro in Calu3* cells and HSAEC,
- Larifan treatment reduces the amount of SARS-CoV-2 virus in the hamster's lungs,
- Larifan treatment reduces the severity of the pathological changes in the hamster's lung caused by the infection.

Inhibition of SARS-CoV-2 replication *in vitro* and the potential reduction of the viral load in the lungs of hamsters treated with Larifan alongside with improved lung histopathology, suggests towards the potential benefit of this drug in humans. However, further clinical studies are needed to confirm its effectiveness and safety in humans suffering from the novel coronavirus disease.

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LIVER FUNCTION DEPENDING ON THE DRUGS USED IN COVID-19 PATIENTS

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"Support for involving doctoral students in scientific research and studies" at Rīga Stradiņš University

Actuality / The Goal

SARS-CoV-2 infection continues to spread worldwide, killing more than 6 million people worldwide. Many different medications are used to treat Covid-19 patients. A wide variety of liver function test changes have been established in COVID-19 patients.
Several possible mechanisms for hepatic injury are known - systemic inflammatory reaction, hypoxia, direct viral liver cell damage and drug-induced liver injury. Drug can be classified according to their potential for causing drug-induced liver injury (DILI). The DILI rank dataset is the largest publicly available annotated DILI dataset contains four groups (Most, Less, No and Ambiguous DILI concern).

The aim of this study was to determine the relationship between liver function and drugs used to treat Covid-19 patients.

Methods

Retrospective study included data from the medical records of 119 COVID-19 patients hospitalized in Riga East Clinical University hospital (April to November 2020). The mean age of patients was 59.8 ± 14.32, 52.9% (n=63) were females. The diagnosis was confirmed by positive RT-PCR for SARS-CoV-2 nucleic acids in a nasopharyngeal swab.
Abnormal liver function was defined as ALT>40 U/l, liver injury was defined if 3 times upper limit of normal level.

Results

More than **65 drugs** listed in different DILI rank groups have been used to treat hospitalized COVID-19 patients (Figure 1, 2, 3, 4). Most commonly used drugs were *Ceftriaxonum, Acidum ascorbinicum, Enoxaparinum, Doxycyclinum, Bromhexine, Paracetamolum, Dexamethasonum* and *Metamizolum.*

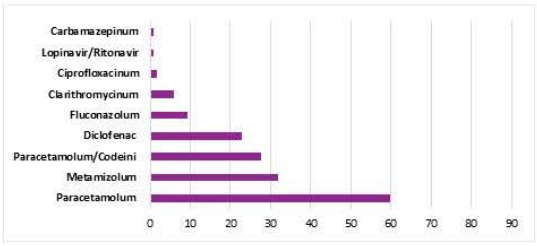

Figure 1. *Most-DILI-concern* drugs in COVID-19 patients (%)

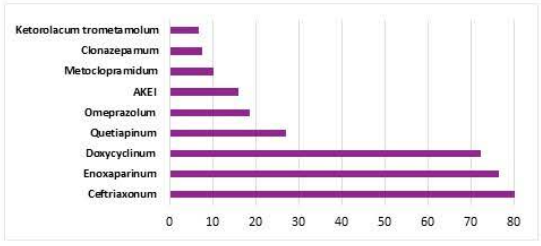

Figure 2. *Less-DILI-concern* drugs in COVID-19 patients (%)

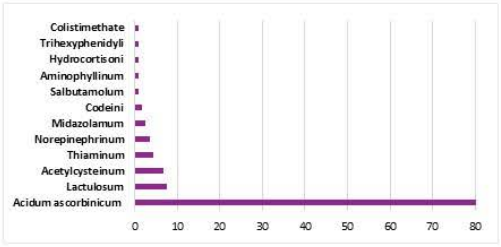

Figure 3. *No-DILI-concern* drugs in COVID-19 patients (%)

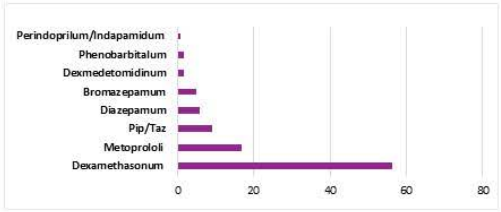

Figure 4. *Ambiguous-DILI-concern* drugs in COVID-19 patients (%)

The median amount of drugs used in the hospital period was 7 (IQR: 5-9). More than half of hospitalised COVID-19 patients received 5-8 drugs (Figure 5). No statistically significant association and relationship were found between the number of drug used and liver function, p=0.424 and p=0.812.

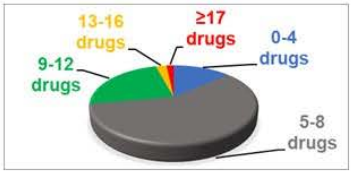

Figure 5. Number of drugs in COVID-19 patients

A significant association with hepatic function was observed for *Diclofenac*, *Ceftriaxonum*, *Enoxaparin*, *Dexamethasone* and *Remdesivir* (Table 1).

Table 1. Liver function and drugs used in COVID-19 patients

Frequency of use of the drugs	Liver function			p value
	Normal (n=33)	Abnormal (n=43)	Liver injury (n=16)	
Diclofenac, % (n)	12.1 (4)	39.5 (17)	18.8 (3)	0.001
Ceftriaxon., % (n)	75.8 (25)	97.7 (42)	100 (16)	0.003
Enoxaparin., % (n)	78.8 (26)	86 (37)	87.5 (14)	0.005
Dexamethas., % (n)	51.5 (17)	65.1 (28)	75 (12)	0.045
Remdesivir, % (n)	12.1 (4)	30.2 (13)	37.5 (6)	0.002

Conclusions

Ceftriaxone, *Enoxaparin*, *Dexamethasone*, and *Remdesivir* related to the liver injury were not in the Most-DILI-concern drug group. Therefore, their use should be evaluated case-by-case to assess all possible benefits and risks.

MANAGEMENT OF NURSING CARE FOR THE ELDERLY WITH COVID-19 IN INSTITUTIONAL CARE

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[1]Catholic University, Faculty of Health in Ružomberok, Slovak Republik
[2] Military Hospital- Faculty Hospital in Ružomberok

The disease is very dangerous in the elderly over 65 years of age, often requiring hospitalization and critical care. The fatal form can be the pulmonary form (Sivaraman et al, 2020). The mortality of hospitalized patients with COVID-19 over the age of 80 is up to 54% in international studies (Wirth, 2021). Multimorbid seniors and immunocompromised seniors are particularly at risk.
According to Fathi, Gavalier (2021), seniors with comorbidities such as arterial hypertension, chronic lung, liver, kidney disease and cancer have a worse prognosis. The infection can be atypical in the elderly and is often diagnosed late. Pharmacological treatment is also complicated, because prescribed drugs such as antibiotics, corticosteroids, antiparasitics, NSAIDs have adverse side effects for seniors and threaten drug interactions (e.g. Ivermectin and Warfarin). In hospitalized seniors, it is therefore very important that treatment is started early and provided to interdisciplinary teams following standardized procedures (Alexander, et al). The continuity of care and, if possible, the aftercare of the senior is also important, which reduces the risk of complications and stabilizes the health condition of the senior. In the case study, we describe the course of care and nursing intervention in a senior with COVID-associated pneumonia treated at the Military Hospital- Faculty Hospital Ružomberok. Acute care was provided at the Department of Infectious Diseases and sub acute care at the Aftercare Department.

Case description

90-year-old multimorbid patient admitted to the Infectious Diseases Clinic of the Military Hospital in Ružomberok. In **22.1.2021** for dehydration, refusal of orally admission with COVID-19 associated pneumonia. The patient has been diagnosed chronic diseases - Arterial hypertension, Ischemic heart disease, Monotropic atrial tachycardia, Gonatrosis, hepar steatosis. There were interstitial inflammatory changes in both lung wings on the chest X-ray. Empirically used antibiotic (Medoclav), corticoids, vitamin, symptomatic treatment, rehydration, continuous oxygen therapy.
In **8.2.2021** Repeated X-ray, progression of the finding, laboratory adjustment of the internal environment, decrease in inflammatory parameters, afebrile patient. Ivermectin was added in the treatment, control PCR test negative.
18. 2. 2021, she was admission to the Aftercare Department for further treatment and rehabilitation. On the day of admission, she was conscious, had difficulty communication, cooperated, oriented only by a person, blood pressure 95/60, pulse 86, respiration 18, body temperature 36.5, saturation O2 87, she had peripheral venous catheter, Barthel Scale-ADL was 5 points. She was immobile, incontinent. She was prescribed O2, enteral nutrition, parenteral hydration, treatment of the oral mucosa.
Nursing interventions were focused on monitoring health status, physiological functions, saturation monitoring, application and control of nutrition, hydration, emptying care, hygiene, dressing, application of nursing rehabilitation, satisfaction of needs, therapeutic communication, application of pharmacological treatment.
Implemented interdisciplinary care in cooperation with doctor-nurse-physiotherapist-nursing assistant.

Figure 1 Management of institutional care for the elderly at the Military Hospital

Table 1 The course of care

A date	Intervention
22.2.2021	Laboratory-confirmed **hypoalbuminuria, mineral imbala**nce, Monitored fluid intake and expenditure, Monitored excretion, skin condition, Implemented rehabilitation on the bed, passive, seated with the help of two people, sitting passive, standing, walking uncontrollable, Phlebitis in an intravenous cannula confirmed sonographically.
1.3.2021	Consultation examination (dermatologist) - inguine area erythema, maceration - Dg. Regional intertrigo, decubitus regio in the gluteal area
10.3.2021	Collection of urine for cultivation
12.3.2021	Proven urinary tract infection
29.3.2021	Ddiarrhea, stool collection, confirmed Clostridium diff., initiated Vancomycin treatment
6.4.2021	Applied transfusion for anemia progression, pyretic reaction after the second transfusion
In the further course of care, decompensation of the health condition - shivering, febrile with blood pressure drop. Implemented Echocardiography to exclude infectious endocarditis, infection not confirmed.	

The patient was **16.4. 2021,** after almost 2 months (58 days), released to the Nursing Home in a slightly improved condition. ADL was 0 points. During hospitalization, interventions focused on continuous monitoring of health and mental health. Physiological functions and saturation were monitored and recorded regularly. The care was especially focused on nutrition, hydration, assistance in self-service activities, rehabilitation in cooperation with a nurse-physiotherapist and prevention of complications. Pharmacological and non-pharmacological treatment were applied.
The patient's therapy was associated with risks (90 years), multymorbidity, geriatric syndromes, malnutrition, dehydration, polypharmacy ... And as the Table 1 showed, the course of treat ment was complicated. Even during the relatively long hospitalization, there was no significant adjustment in health. What is the risk in the treatment of a frailty geriatric patient and prescribed antibiotic treatment (Jovic, 2020). The patient had the same problems as in foreign studies ... *her health condition can be destabilized despite treatment and there is a risk of complications* (Brunelo et al, 2020).
However, coordinated and team care was a benefit for her. Complications were identified in time and treatment was adequately started even after the deterioration of health in the 40th day of hospitalization.

Nepartrauktā hemofiltrācija kombinācija ar ECCO2R filtru smagiem Covid-19 pacientiem

Dr.Kaspars Kivlenieks, Dr.Anda Grigāne, Prof. Voicehovska, Dr.Eva Bormane, Dr.Dace Trumpika, Dr. Regīna Baufāle, Dr. Evita Skruļa, Dr. Emīls Kokars,Dr.Vineta Antiņa Dukule, Dr.Kristiāna Ulme

Ievads

Covid-19 pandēmija nozīmē lielu skaitu pacientu ar pneimoniju, kas bieži izraisa smagu akūtu respiratorā distresa sindromu (ARDS), dažiem no viņiem ir refraktāra hiperkapnija un hipoksēmija, kam nepieciešama mehāniskā plaušu ventilācija (MPV). Šinī gadījumā ir iespējams izmantot CO2 adsorbciju (ECCO2R) ,kas ļauj samazināt hiperkapniju izmantot MPV saudzējošākā režīmā, kas samazina transpulmonāro spiedienu un ļauj izvairīties no ventilācijas izraisītas plaušu traumas.

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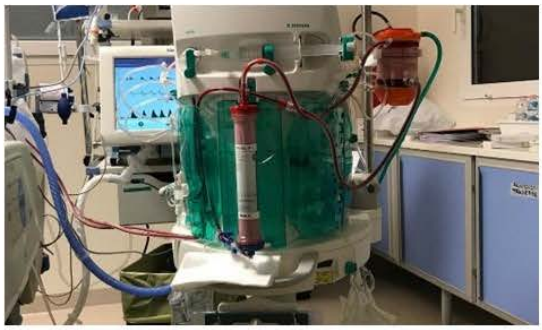
Gadījuma apraksts

Pacients 56 gadi blakusslimības PAH II pakāpe. Pacients stacionēts 3. slimības dienā ar febrilu temperatūru, nespēku, vājumu, sausu klepu un caureju. RTG abpuseja Covid 19 pneimonija. Pacients terapijā saņem Remdesaviru, taču dinamikā pasliktinās elpošanas mazspēja, progresē klepus. Pacients tiek pārvests uz intensīvās terapijas nodaļu. Tiek veikts CT plaušām, kur 100% plaušu bojājums. Pacients tiek intubēts tiek uzsākta MPV, taču saglabājas hiperkapnija un hipoksēmija, pievienojas nieru bojājums. Pacientam pēc vitālām indikācijām tiek uzsākta ECCO2R (CVVH nepārtraukta hemofiltrācija kombinācijā ar ar ECCO2R filtru). Pacientam samazinās hiperkapnija. Terapija turpinās nepārtraukti 59 stundas. Pacients paralēli saņem specifisku pretvīrusu terapiju, antibakteriālo terapiju. Stāvoklis pakāpeniski stabilizējas. Saglabājas nespēks, elpošanas mazspēja pie kustībām ko nosaka fibrotiskas izmaiņas plaušās. Turpina ārstēšanu rehabilitācijas klīnikā



Ilgums /Laboratorija	1. DN	2.DN Therapy begin	3. DN	4. DN Therapy end	5.DN	6. DN
pH	7.473	7.474	7.478	7.473	7.46	7.473
pCO^2	56	58.1	55.3	57.1	51.2	53.5
pO^2	57	45.9	59.9	44.5	57.3	53.5
Laktāti	3.7	3	2.1	32	2.6	3
O^2	92	90%	94%	94%	94%	94%

Secinājumi

Kritiski smagiem pacientiem uzsākot ECCO2R pie hiperkapnijas un hipoksijas ir novērojams pozitīvs efekts, tiek samazināts pCO2 līmenis asinīs un palielināts O2 līmenis. Kombinācijā ar CVVH kas noņem iekaisuma marķierus – interleikīnus un citokīnus un citus toksiskus faktorus, lieko šķidrumu, koriģē elektrolītu disbilancu. Kopumā tas ļauj stabilizēt šādus pacientus. Līdz ar to ir mērķtiecīgi pielietot šo metodi un tā uzlabo pacientu prognozi.

NAT nav tikai nieru aizstājējterapija, bet arī arvien vairāk attīstāma multiorgānu aizstājējterapija, kur ir iespējama vairāku filtru un procedūru savienojamība, kuru pielieto vairāku orgānu disfunkcijas gadījumā, sirds, plaušu, nieru, elektrolītu acidozes/alkolozes korekcijai. Šis metodes ir pilnīgi jaunas, lai izvērtētu efektivitāti un 30 dn izdzivotību, būtu jaizvērtē pie vairākām patoloģijam ar dažādam procedūrām.

Izmantotā literatūra:

https://pubmed.ncbi.nlm.nih.gov/33932971/https://www.frontiersin.org/articles/10.3389/fmed.2021.654658/full

https://renalcare.baxter.com/sites/g/files/ebysai1471/files/2020-01/GLBL_MG1_17-0001_Role%20of%20Low-flow%20ECCO2R%20in%20LPV%20Strategies%20Brochure_FINAL.pdf

Orthopaedic trauma characteristics during COVID-19 crisis

Ruta Jakusonoka, Andris Jumtins, Andris Vikmanis, Ivans Krupenko

Actuality / The Goal

The COVID-19 crisis has affected the hospital's work, including effect on orthopaedic trauma characteristics and orthopaedic surgery.
The aim of the study was to evaluate trauma management during COVID-19 crisis and before that in polytrauma orthopaedic unit.

Methods

Retrospective study in polytrauma orthopaedic unit from 14 March, 2019 until 14 April, 2019, and from 14 March, 2020 until 14 April, 2020 was performed. This period was the most critical for hospitals, including orthopaedic trauma management, because state of emergency due to COVID-19 was announced. Data included all patients', admitted during this period, demographics, trauma mechanism, diagnosis, type of surgery, and time interval between admission and surgery, as well as lengths of hospital stay. Trauma mechanism was classified as high-energy or low-energy trauma according to the criteria derived from the Advanced Trauma Life Support guidelines.

Results

The number of patients, comparing the mentioned periods from 2019 and 2020, admitted in the polytrauma orthopaedic unit, decreased from 42 to 27.
The mean time interval from admission to surgery decreased from 2.8 ± 4.3 (range 0–15) to 0.9± 1.4 (range 0–19), $p<0.05$.
The number of pelvic ring, acetabulum, proximal segment of tibia and tibial shaft fractures, which were caused by high-energy trauma decreased during COVID-19 crisis (Fig.1.).
The number of surgeries decreased from 52 t0 43 (Fig.2.).
The mean length of stay in hospital decreased from 12.5±8.0 (range 1–30) to8.2 ±4.8 (range 2–18) $p<0.05$.
Non-operative treatment was not used for definitive management of patients. During COVID-19 crisis elective cases were postponed in the polytrauma orthopaedic unit.

Fig.1.High-energy injuries in polytrauma orthopaedic unit during COVID-19 crisis and before that

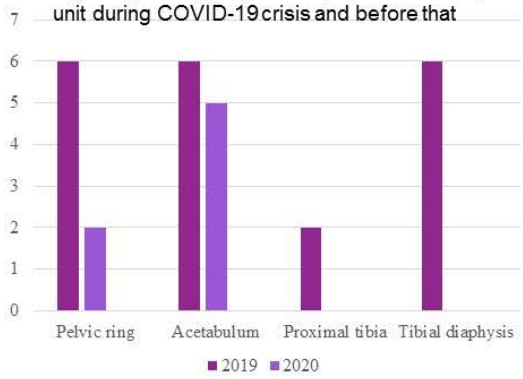
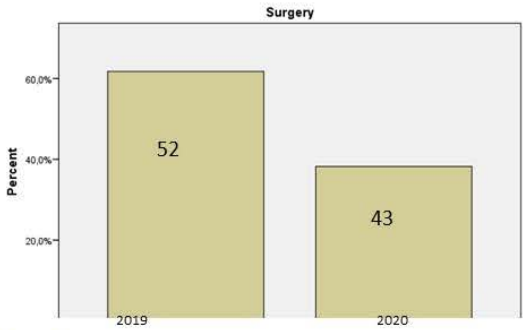


Fig.2.Surgeries in the polytrauma orthopaedic unit during COVID-19 crisis and before that



Conclusions

The proportion of polytrauma patients with orthopaedic injuries admitted in the polytrauma orthopaedic unit and the number of surgeries were decreased by one-third, the mean length of stay in hospital and mean time interval from admission to surgery was significantly decreased. The number of high-energy injuries seem to be less during COVID-19 crisis, which might have been because of a lower number of road traffic accidents during COVID -19 state of emergency.

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Overview and outcomes of patients hospitalised with Covid-19 pneumonia in Riga East University Hospital.

Overview and outcomes of patients hospitalised with Covid-19 pneumonia in Riga East University Hospital.

R.Rugājs, A.Ivanovs, L.Vīksna, M.Madelāne

Actuality / The Goal

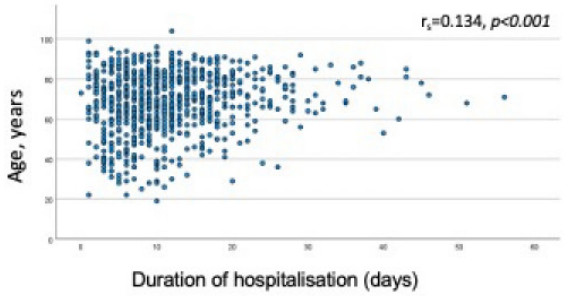
The ongoing Covid-19 pandemic is still a burden to the global health care system.
We aimed to analyse COVID-19 patients' duration of hospitalisation and disease outcome in association with comorbidities, age, gender, treatment and vaccination status.

Methods

Cross section study included 802 patients with Covid-19 pneumonia who were hospitalised over a one-year period from November 1, 2020, in Riga East University Hospital clinic «Gaiļezers». Patients were divided according to the age, gender and whether the specific treatment with *Remdesivir* was received. Then using *IBM SPSS Statistics software*, it was analysed if those factors have an association with hospitalisation duration and mortality. In addition comorbidities (primary arterial hypertension, coronary artery disease, type 2 diabetes, chronic kidney disease, cerebrovascular disease, neurodegenerative disease, oncological disease, bronchial asthma, COPD, obesity) and their association with disease outcome was analysed. The impact of vaccination status was analysed as well, although data is collected from shorter period of time since vaccination was introduced later in research period.

Results

Of total 802 patients, 44,3% (355) were male patients, and 55,7% (447) were female with median age of 71 (IQR = 60-81).
There was a weak correlation between the age and hospitalisation duration with older patients having a longer hospitalisation (r_s=0.134, p<0.001).

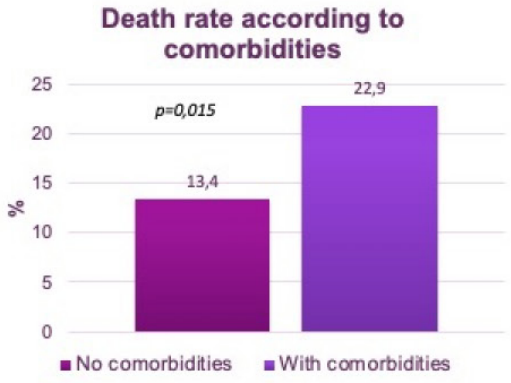


A significant differences were found in age and disease outcome – the median age of patients who died during hospitalisation was 79 (IQR = 71-85) while discharged - 68 (IQR = 58-79) (p<0.001).

There was no significant association between the disease outcome and type 2 diabetes (p=0.550), oncological disease (p=0.199) and obesity (p=0.407).

There was a significant association between the chronic kidney disease and worse disease outcome – 24.6% and 12.7% (p<0.001).

No significant differences in disease outcome were found whether patients had one ore more comorbidities. However, there was a significant difference in death rate comparing a group with no comorbidities and at least one of them (p<0.015).



There was a statistically significant difference in disease outcome in patients treated with *Remdesivir*. Out of the patients who survived, 32,6% received *Remdesivir* therapy, while those who died - only 12,3% (p<0.001).

It was observed that the patients who received initial vaccination course compared to non-vaccinated had shorter length of hospitalisation - Me=8 days (IQR = 5-13) and Me= 10.5 (IQR = 6.0-15.8), however it was not statistically significant (p=0.067).
Vaccination did not have association with disease outcome (p=0.550).

Conclusions

Older patients tend to have longer hospitalisation period.
Specific antiviral treatment with *Remdesivir* resulted in better disease outcome.
Out of all comorbidities, chronic kidney disease has the most significant role in mortality.

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Pilnībā vakcinēto un nevakcinēto stacionārā ārstēto pacientu ar plaušu bojājumu slimības gaita un iznākumi

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slimnīca
RĪGAS AUSTRUMU KLĪNISKĀ UNIVERSITĀTES SLIMNĪCA

Aktualitāte / Mērķis

Salīdzināt pilnībā vakcinēto un nevakcinēto pacientu plaušu bojājuma smagumu, mirstību, ferritīna, kā smagas slimības gaitas prediktora līmeni pa vecuma grupām COVID-19 Delta paveida uzliesmojuma laikā. Noskaidrot, kā vakcinācija ietekmēja slimības gaitu un norisi COVID-19 Delta paveida uzliesmojuma laikā.

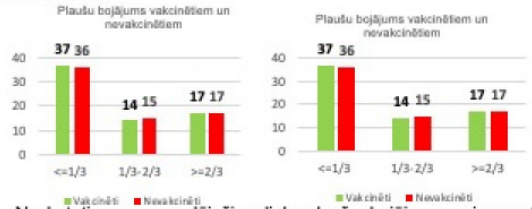
Metodes

Retrospektīva, nejauši atlasīto, stacionārā RAKUS ārstēto pacientu (68 pacienti - pilnībā vakcinēti, 68 pacienti - nevakcinēti) medicīniskas dokumentācijas analīze par 2021 g. novembri un decembri.

Rezultāti

Šajā pētījumā tika ietverti 136 pacienti, kas tika hospitalizēti ar pamatdiagnozi "COVID-19 pneimonija" 2021 gadā novembrī un decembrī. No kopēja pētījumā ietverta pacientu skaita 68 bija pilnībā vakcinēti un 68 nevakcinēti. Vakcinēto pacientu grupā ir 31 sieviete un 37 vīrieši, savukārt nevakcinēto grupā 46 sievietes un 22 vīrieši. Vakcinēto un nevakcinēto pacientu vecuma grupās, kurās tika konstatēts vislielākais hospitalizēto pacientu skaits ir 60 - 89 gadi.

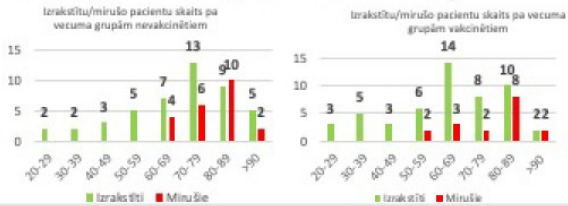
Analizējot slimības gaitu, tika konstatēts, ka COVID-19 pneimonija pārsvarā noritēja ar vidēji smagu un smagu gaitu vakcinēto un nevakcinēto pacientu grupās praktiski vienādi: (vidēji smaga gaita – 36 vakcinētiem, 34 nevakcinētiem pacientiem; smaga gaita – 29 vakcinētiem un 32 nevakcinētiem). Nozīmīga loma slimības norisē ir plaušu bojājuma pakāpei: šajā grafikā var redzēt, ka lielākām vakcinēto un nevakcinēto pacientu skaitām tika konstatēts plaušu bojājums līdz 1/3 no plaušu parenhīmas: 37 vakcinētiem un 36 nevakcinētiem.



Neskatoties uz prevalējoši nelielu plaušu bojājuma apjomu starp pētījumā ietvertajiem pacientiem, mirstība vakcinēto un nevakcinēto grupās ir augsta: 17 vakcinēti (12,5 % no kopēja pacientu skaita), 22 nevakcinēti (16% no kopēja pacientu skaita). No kopēja pacientu skaita no stacionāra izrakstīti 97 pacienti, no kuriem 51 (37,5%) vakcinēts un 46 (34%) nevakcinēti.

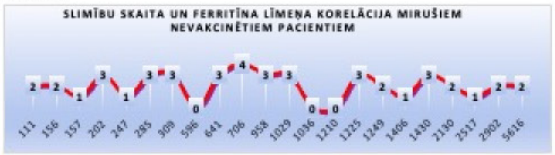
Analizējot pacientu mirstību, tika ņemtas vērā pacientu blakusslimības, kas var ietekmēt COVID-19 gaitu: cukura diabēts, adipozitāte, kardiovaskulārās slimības, hroniska nieru slimība, onkoloģiskās slimības anamnēzē. Vislielākais blakusslimību skaits konstatēts vecuma grupā 60 – 89 gadi. Tieši šajā vecuma grupā, gan vakcinētiem, gan nevakcinētiem pacientiem nāves gadījumu skaits ir vislielākais.

No iegūtiem datiem tika analīzēti ferritīna rādītāji, tai skaitā noteikts vidējais ferritīna līmenis vakcinēto un nevakcinēto pacientu vidū. No pētījuma datiem var secināt ka vidēji augstāks ferritīna līmenis prevalē vakcinēto pacientu grupā. Analizējot ferritīna līmeni saistībā ar blakussaslimšanu skaitu, netiek konstatēta korelācija.

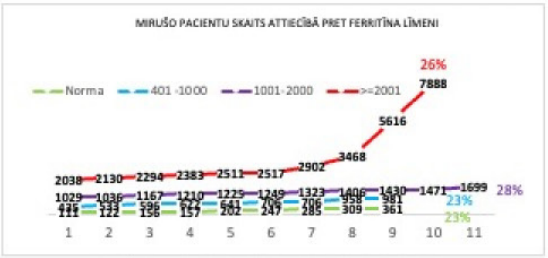


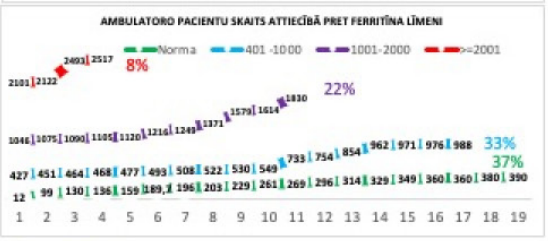
Abstract

The purpose of this study is to compare the severity of lungs damage, mortality, ferritin levels, which is a predictor of the severity of the disease in vaccinated and unvaccinated patients, divided by age groups. This study analyzed the medical records of randomly selected 68 fully vaccinated and 68 unvaccinated patients hospitalized with COVID-19 pneumonia at Riga East Clinical University Hospital in November and December 2021, during the Delta variant outbreak. The results of this study concluded that there is no significant differences between the severity of disease and mortality in vaccinated and unvaccinated patients groups. Our study showed that the main factors which determine severity and mortality of disease are age, severity of comorbidities, date of vaccination (mostly seniors were vaccinated in the end of the winter and during the spring of 2021) and booster vaccination absence.



Interesanti, ka izvērtējot ferritīna līmeni mirušo un no stacionāra izrakstītu pacientu vidū, tiek iegūta pozitīva korelācija starp paaugstinātu ferritīna līmeni un pacientu mirstību. Rezulatā, balstoties uz pētījumā iegūtiem datiem, paaugstināto ferritīna līmeni var sasaistīt ar smagāku slimības norisi un mirstību, bet blakussaslimšanu skaits neietekmē ferritīna līmeni.





Secinājumi

Pētījums tika veikts, analizējot datus par 2021 g. novembri un decembri, kad sabiedrības skepse pret vakcināciju bija diezgan ievērojama, kas rezultātā ietekmēja vakcinēto un nevakcinēto hospitalizēto pacientu daļu: ņemot vērā SPKC datus, vakcinēto pacientu daudzums bija ievērojami mazāks, salīdzinot ar nevakcinēto pacientu grupu.

Senioru vakcinācijai un balsts vakcinācijai ir galvenā loma. Pētījumā netika konstatētas atšķirības slimības gaitā, mirstībā starp vakcinēto un nevakcinēto pacientu grupām; cēlonis tam ir tie faktori un riski (vecums, blakusslimību skaits anamnēzē, balsts vakcinācijas iztrūkums un laiks pēc vakcinācijas: seniori, kas ir veikuši vakcināciju 2021.gada ziemas beigās un pavasarī, piem. pansionātu un sociālu aprūpes centru iemītnieki), kuriem pacienti tika pakļauti pirms saslimšanas ar COVID-19, un hospitalizācijas, kuri pamatā noteica slimības smagumu un mirstību.

Ferritīna līmenis var kalpot, kā papildus kritērijs COVID 19 gaitas un norises novērtējumā.

PLAUŠU PATOLOĢISKĀS IZMAIŅAS PACIENTIEM AR LETĀLU COVID-19 NORISI

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Aktualitāte / Mērķis

SARS-CoV-2 līdz 2022. gada martam ir inficējis vairāk nekā 474 miljonu cilvēku, no kuriem 6,1 miljons ir gājuši bojā. Šo pacientu nāves cēloņa verifikācijai nereti tiek veiktas autopsijas. Latvijā veikto autopsiju dati pētniekiem sniedz iespēju analizēt COVID-19 izraisītās morfoloģiskās izmaiņas mirušo pacientu iekšējos orgānos. Datu par pārmaiņām plaušās aizvien ir relatīvi maz. Sākotnējie morfoloģiskie pētījumi liecina par klasisku vīrālu pneimoniju atradni, kuru svarīgākās raksturiezīmes ir difūzs alveolārs bojājums (DAD) un asinsvadu trombozes. Morfoloģiskā aina ir vitāli svarīga, lai izprastu COVID-19 patoģenēzi, bet ticamu slēdzienu iegūšanai nepieciešams analizēt lielu gadījumu skaitu. Šī pētījuma mērķis ir papildināt pasaulē pieejamo datu klāstu par COVID-19 izraisīto plaušu bojājumu morfoloģisko raksturojumu ar Latvijā veikto autopsiju rezultātiem.

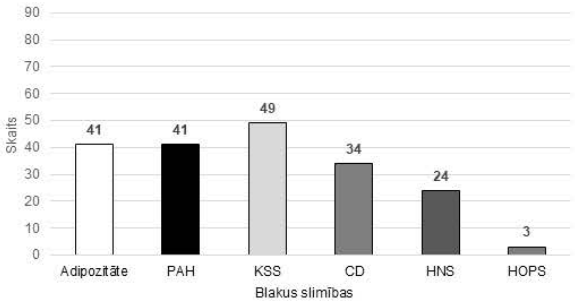
Metodes

Pētījuma ietvaros tika apkopoti anonīmi dati no 88 klīniski indicētām autopsijām, kas veiktas RAKUS stacionārā "Gaiļezers" COVID-19 pozitīviem mirušajiem pacientiem. Lai iegūtu pētnieciskos morfoloģiskos datus, visi plaušu audu paraugi tika atkārtoti izvērtēti ar gaismas mikroskopijas metodi, fiksējot oriģinālā anonīmā protokolā vairākus morfoloģiskos parametrus. Tika apkopoti nozīmīgi pacientu demogrāfiskie (vecums, dzimums), klīniskie (slimības ilgums, blakus slimības) un laboratoriskie (CRO un D-dimēru līmenis) parametri, kas hipotētiski varētu korelēt ar morfoloģisko atradni. Datu analīze tika veikta, izmantojot *IBM SPSS Statistics* (ražotājs *IBM, Armonk, NY, USA*) programmatūru.

Rezultāti

No 88 pētījumā iekļautajiem pacientiem, 56 bija vīrieši un 32 sievietes. Vecuma mediāna bija 64 gadi, bet vidējais vecums 62 gadi (diapazons 28 – 94; SD 15,6). Slimības ilguma mediāna bija 14 dienas un vidējā vērtība 15 (diapazons 0 – 47; SD 10,1). D-dimēru līmenis bija paaugstināts 93,4% pacientu, savukārt CRO 97,6% pacientu. Blakus slimību spektrs ir apkopots 1. grafikā.

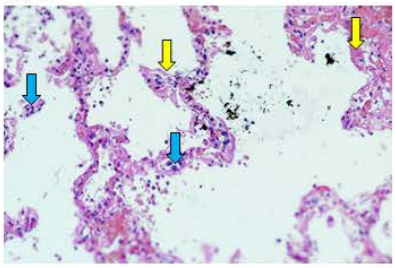
1. grafiks. Blakus slimību biežums pacientiem ar letālu COVID-19 norisi



Plaušu morfoloģiskajās izmaiņās tika izvērtēta difūza alveolāra bojājuma (DAD) klātesamība, ko konstatēja 94,3% pacientu. 43,2% DAD bojājums bija eksudatīvajā fāzē (1. attēls), savukārt 48,9% proliferācijas fāzē (2. attēls). Fibroze bija klātesoša 59,1% pacientu. Asinsvadu bojājumu novēroja 79,5% pacientu, asinsvadu trombozes 94,3% un plaušu artēriju trombemboliju 13,6% gadījumu (3. attēls). Hemorāģiskus infarktus konstatēja 30,7% pacientu.

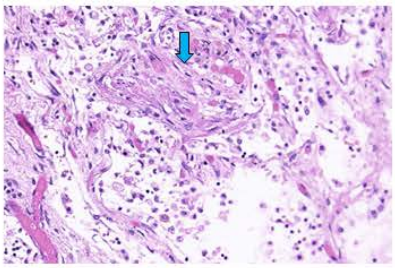
Statistiskai analīzei tika pielietots Manna-Vitnija U tests. Slimības ilguma un DAD fāzes atšķirība bija statistiski nozīmīga ($p < 0.001$). Savukārt hemorāģiska infarkta klātesamība nebija statistiski nozīmīga, salidzinot to ar slimības ilgumu ($p = 0.128$) un D-dimēru līmeni ($p = 0.273$).

1. attēls



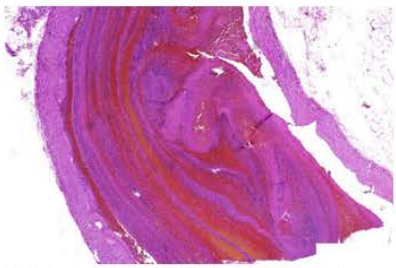
Difūzs alveolārs bojājums eksudatīvajā fāzē. Vizualizē hialīnās membrānas (dzeltenās bultas) un neizteiktu iekaisuma šūnu infiltrātu alveolu starpsienās un lūmenā (zilās bultas). Hematoksilīns – eozīns, x200.

2. attēls



Difūzs alveolārs bojājums proliferācijas fāzē. Alveolu starpsienas ir sabiezētas un to lūmenā veidojas fibrozi polipi (zilā bulta). Hematoksilīns – eozīns, x200.

3. attēls



Plaušu artēriju trombembolija. Redzama liela kalibra artērijas siena un iegarens trombs, kas aizņem gandrīz visu asinsvada lūmenu. Hematoksilīns – eozīns, x30.

Secinājumi

Plaušu audu autopsiju materiālā dominējošās morfoloģiskās izmaiņas bija difūzs alveolārs bojājums. DAD proliferācijas fāzē bija vairāk raksturīga pacientiem ar lielāku slimības ilgumu nekā eksudatīvā fāze. Atšķirība starp slimības ilgumu un DAD fāzēm bija statistiski nozīmīga ($p < 0.001$).

Morfoloģiski verificētas plaušu asinsvadu trombozes konstatēja gandrīz visiem pacientiem, savukārt gandrīz trešdaļai atklāja hemorāģiskus infarktus. Slimības ilgums ar trombožu ilgumu nekorelēja ($p = 0.128$).

Par trombozi arī liecināja paaugstināts D-dimēru līmenis, ko konstatēja 94,3% pacientu. Tomēr šī radītāja līmenis nekorelēja ar hemorāģiska infarkta biežumu ($p = 0.273$).

Iepriekšminētās pazīmes liecina, ka vaskulārs bojājums ir raksturīga morfoloģiska, patoģenētiska, laboratoriska un klīniska pazīme pacientiem ar smagu COVID-19 gaitu.

Pneumomediastinum pacientiem ar Covid-19: klīnisko gadījumu analīze par 2021.gadu

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1-RAKUS NMPUK vadītājs; RSU NMĀ rezidentūras programmas vadītājs; 2- RAKUS NMPUK neatliekamās palīdzības ārsts

slimnīca
RĪGAS AUSTRUMU KLĪNISKĀ UNIVERSITĀTES SLIMNĪCA

Aktualitāte / Mērķis

COVID-19 pandēmija pēdējos pāris gadus ir kļuvusi par lielu izaicinājumu veselības aprūpes sistēmā, jo īpaši neatliekamā medicīnā: pacientam attīstoties nevēlamām blakusparādībām, neatkarīgi no savlaicīgi veiktās adekvātas pacienta izvērtēšanas, šķietami vidēji smagās slimības gaitas, uzsāktās terapijas, var novest pacientu pie nevēlama iznākuma - nāves.
Spontāns pneumomediastinum ir viena no retākajām komplikācijām medicīnā, īpaši torakālā kirurģijā. Visā pasaulē pamatā aprakstīti atsevišķi klīniski gadījumi, pēc kuriem veikta tālāka datu analīze. Pamatā rodas 2 faktoru iespaidā: 1) barotrauma – traumatisks bojājums plaušu audu bojājums, fizikšas traumas gadījumā vai ventilatoru (neinvazīvā plaušu ventilācijā (NIV); mākslīgā plaušu ventilācijā (MPV)) asociēts, 2) plašs plaušu audu bojājums kādas saslimšanas gadījumā, pamatā intersticiālu plaušu slimību gadījumā, pie infekciju slimībām reti (ir aprakstīti daži gadījumi pie smagām gripas pneimonijām).
Kopš SARS-CoV-2 infekcijas sākuma klīnisko gadījumu skaits pacientiem ar spontānu pneumomediastinum ir kļuvis aizvien biežāk sastopams, īpaši ar t.s. "delta variantu", kas ievērojami pasliktina pacienta progonozi. Sākotnēji publicēti dati liecināja, ka pamatā saistīts ar MPV asociētajām blaknēm, bet vēlāk sastopamas publikācijas, kurās aprakstīti gadījumi arī gados jauniem pacientiem bez zināmām blakussaslimšanās, kā kas iepriekš nav saņēmuši papildus skābekļu atbalstu ne ar NIV, ne ar MPV.
Pētījumā mērķis ir izvērtēt cik sastopama šī komplikācijā ir bijusi starp Rīgas Austrumu Klīniskās Universitātes slimnīcas (RAKUS) stacionētajiem pacientiem ar COVID-19, kā arī tas ir ietekmējis to slimības gaitu.

Metodes

Tika analizēti dati no RAKUS medicīniskās informācijas, kas pieejama "Ārstu birojā". Pamatā aplūkoti COVID-19 pacienti stacionēti RAKUS "Gaiļezers" un "Tuberkulozes un plaušu slimību centrā" nodaļās 2021.gadā. Kopumā analizēti 13 klīniskie gadījumi, kur pacientiem tika konstatēts spontāns pneumomediastinum: 12 no tiem radioloģiski apstiprināts, 1 pacientam attīstījās zemādas efizēma, bet radioloģiskie izmeklējumu netika veikti stāvokļa smaguma dēļ.

Rezultāti

Pirmais gadījums
Paciente 74.g.v. saslimusi 7.10.21. - subfebrila temperatūra, klepus, vājums, progresējošs elpas trūkums. SARS-CoV-2 RNS pozitīvs kopš 10.10.21. Stacionēta 15.10.21. TPSC stāvokļa pasliktināšanās dēļ - sākotnēji veikts RTG thoracis - vidējas pakāpes izmaiņas, abpusēja pneimonija. Saņēmusi terapiju ar Remdesivir, O2 inhalācijas 15l/min, taču 27.10.21. (aptuveni 21.slimības dienā) konstatē desaturāciju, pieaug D-dimēri, veikts CTA plaušām - konstatē kreisās puses spontānu pneimotoraksu, pneimomediastinum, abu plaušu lejasdaivu artēriju PATE; plaušu bojājums ap 70%. Pacientei invazīva iejaukšanās nav nepieciešama, kontrole dinamikā. Terapijas fonā pacientei vērojama uzlabošanās, tiek izrakstīta 3.11.21.

Otrs gadījums
Pacients 53.g.v. saslimis 28.12.20. - sauss klepus, subfebrila temperatūra, kopš 2.01.21. SARS-CoV-2 RNS pozitīvs. Anamnēzē bērnu cerebrālā trieka. Prehospitāli lietojis azitromicīnu 3 dienas. 9.01.21. iestājies RAKUS NMPUK, jo parādījusies "sejas tūska" - pacientam izteikta kakla, sejas zemādas efizēma (aptuveni 12. slimības diena). CT krūšu kurvim konstatē - izteiktu pneimomediastinum, abpusēju pneimotraksu, plaušu bojājums ap 50%. Pacients stacionēts 85.BIF nodaļā, 9.01.21. izveidotas abpusēji torakostomas - evakuētas 19.01.21. Pacients apmierinošā stāvoklī 22.01.21 izrakstīts.

Trešais gadījums
Pacients 58.g.v stacionēts Jēkabpils slimnīcā 24.12.20, kur apstiprināts SARS-CoV-2 ar siekalu testu - stacionēts ar sūdzībām par klepu, febrilu tempratūru. 9.01.21. (~17.dienā) ar parādījušās izteiktās sāpes krūtīs, aizdusa, 10.01.21. pārvests uz RAKUS Toksikoloģijas un Sepses Klīnikā (TSK). NMPUK veikts CT plaušām, kur konstatē izteiktu pneumomediastinum, subtotāls plaušu bojājums. Pacients saņēmis terapiju NNAT ar citokīnu filtru, HFNC/NIV, kā arī MPV. O2 atkarīgs pārvests rehabilitācijai uz RC "Vaivari" 30.03.21.

Ceturtais gadījums
Pacients 49.g.v. iestājies TSPC ar sūdzībām par klepu, subfebrilu temperatūru 19.10.21. SARS-CoV-2 RNS pozitīvs kopš 10.10.21. Pacientam 22.10.21. Attīstās izteikti reiboņi, nestabilitāte, dubultošanās, pārvests, izmeklēšanai uz NMPUK, neirologa konsultācijai, CT - konstatē subākūtu išēmiju ACP sin et dx, PICA sin baseinos; CTA plaušām - abpusēja segmentāro zaru PATE, plaušu bojājums ~2/3. Stacionēts tālākai terapijai 86.BIF nodaļā. Pacienta stāvoklis terapijas fonā stabilizējas, saņem fizioterapiju, kā fonā jādomā attīstījies spontāns pneomomediastinum - konstatē kontroles CTA brahiocefāliem asinsvadiem 5.11.21. (~25.diena) Pacients šajā datumā apmierinošā stāvoklī izrakstīts.

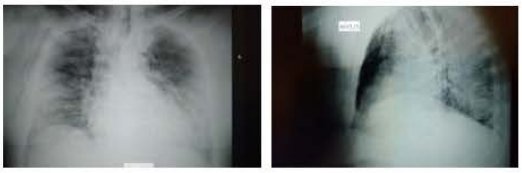
Piektais gadījums
Paciente 75.g.v saslimusi 24.12.20 - noģībusi, bijusi subfebrila temperatūra. Kopš 28.12..20 klepus, aizdusa - satcionēta PSKUS, konstatēta SARS-CoV-2 infekcija, pārvesta tālākai terapijai uz LIC 10.nodaļu 29.12.20., kur RTG konstatēta abpusēju pneimoniju, paciente O2 atkarīga. 9.01.21. (~16.diena) pacientei stāvokļa pasliktināšanās, pieaug elpas trūkums, konstatē supraklavikulāru zemādas efizēmu. 14.01.21 RTG izteikti negatīva dinaika, vēro kreisās puses pneimotoraksu, zemādas efizēmu, pārved tālākai diagnostikai uz NMPUK, kur CT thoracis - plašs pneumomediastinum, trahejas priekšējās sienas plīsuma CT aina, plaušu bojājums ap 90%. Paciente stacionēta TSK, no 18.01.21 uzsākta MPV, taču pacientei pievienojas sepse ar MODS, 3.02.21 exitus letalis.

Sestais gadījums
Pacients 57.g.v. saslimis kopš 11.10.21. ar febrilu temperatūru, klepu. Kopš 13.10.21 SARS-CoV-2 RNS pozitīvs. Stacionēts TPSC 21.10.21, jo pieturējusies febrila tempertūra. Iestājoties pacients O2 atkarīgs, plaušu bojājums CT līdz 2/3, saņem Remdesivir. Sākotnēji pacients uz HFNC, pēc tam vērojams stāvokļa labojums, bet kopš 1.11.21 izteikti subjektīvs elpas trūkums, desturācija, CT konstatē pneumomediastinum, plaušu bojājums ap 90%. 15.11.21. exitus letalis

Septītais gadījums
Pacients 47.g.v. sūdzas par klepu, elpas trūkumu kopš 11.09.21. SARS-CoV-2 RNS pozitīvs kopš 22.09.21, kad izsaucis NMPD, jo pasliktinājies veselības stāvoklis, izteikta aizdusa, elpas trūkums. CT plaušām ~2/3 plaušu bojājums, tālākai terapijai pārvests uz TPSC. Sākotnēji vēro stāvokļa uzlabojumu, pacients veic elpošanas vingrinājumus, bet 26.09.21 pacients atzīmē sūdzības par spiedošu sajūtu kaklā, "sapūstu sprandu". 27.09.21. RTG konstatē pneimomediastinum, labās puses pneimotoraksu. Exitus letalis 27.09.21.

Abstarct

COVID-19 in the resent years has come to be to most challenging experience in medical field, especially in emergency medicine. Spontaneous pneumomediastinum is considered to be one of the rarest complications of respiratory disease. Usually associated with barotrauma or patients with previous pulmonary disease. Since there has been increase of COVID-19 delta variant, also has increased reports of spontaneous pneumomediastinum in patients with no prior pulmonary disease. Medical documentation of patients hospitalized with COVID-19 at Riga East University Hospital in 2021 was analyzed. There were 13 case series of spontaneous pneumomediastinum reported of whom 7 where non ventilation associated. Patients from case reports mostly presented symptoms such as subcutaneous emphysema, continuing or sudden worsening of dyspnea after 20th day of developing respiratory symptoms. Before in COVID-19 associated pneumomediastinum case studies was due to alveolar tissue damage, but considering one of our CT findings, where damage of tracheal wall was detected in patient without previous MPV, must concluded that the disease might cause tracheal tissue damage as well. Further research in this area must be concluded.



Pacienta RTG uzņēmumā redzams gaiss labā pleiras telpā atupveni 1cm, izteikta zemādas emfizēmā, kā arī pneimomediastinum (VII gadījums)

Kopumā 3 gadījumos spontāns pneumomediastīnum atzīmēts pacientiem ar NIV: 1) 70.g.v. vīrities stacionēts TSK 6.slīmības dienā (15.02.21), iestājies ar sūdzībās par elpas trūkumu, nespēku, subferilu temperatūru, NIV uzsākta no 15.02.21. Iestājoties plaušu bojājums ap 90%; pneimodiastinum konstatēts RTG 4.03.21. (~24.slimības dienā), ex.letalis 13.03.21.
2) Sieviete 70 g.v. stacionēta 25.03.21 TSK 10.slimības dienā. Atzīmē subfebrilu temperatūru, mokošu klepu. Irestājoties plaušu bojājums ~2/3, uzsākta NIV. 6.04.21 (~24.diena) konstatē CT abpusēju pneimotoraksu, masīvu pneimomediastinum. Ex.letalis 13.04.21.
3) 61.g.v. vīrietis stacionēts ITK 26.11.21, ar sūdzībām par klepu, elpas trūkumu, subfebilu temperatūru pēdējās 2 nedēļas. Iestājoties CT plaušu bojājums ~2/3, uzsākta NIV. 5.12.21 (~21.diena) CT konstatē labās puses pneimotoraksu, pneimomediastinum, izveido torakostomu. 18.12.21.exitus letalis

3 gadījomos pacientiem papildus smagam COVID-19 plaušu bojājumam, tika uzsākta MPV, kuras fonā attīstījās sponatāns pneimomediastinum: vienam pacientam paralēli tika konstatēts arī abpusējs pneimotorakss (~60.diena), Pārējiem pneumomediastinum fiksēts pēc 20.saslimšanas dienas. Visu pacientu gadījumā iznākums letāls.

Pacients stacionēts (III gadījums) 10.01.21 no Jēkpalis slimnīcas, CT vēro pneimomediastinum, subtotālu plaušu bojājumu

Secinājumi

- Spontāns pneumomediastinum sastopamības biežums ievērojami palielinās, ja pacients ir SARS-CoV-2 RNS pozitīvs, neatkarīgi vai pacientam iepriekš ir bijusi zināma plaušu patoloģija
- Vairums no diagnosticēto gadījumu plaušu bojājums sasniedz aptuveni 2/3 un vairāk plaušu bojājuma pakāpes
- Spontāns pneumomediastinum novērojams no fiksētiem gadījumiem vienādi gan pacientiem ar NIV un MPV, kā bez tās, lai gan iznākums ievērojami labāks pacientiem, kuri pirms pneumomediastinum rāšanās, nav saņēmuši nekādu no PV atbalstiem, kā arī pamatā pneumomediastinum no visiem apskatītiem gadījumiem attīstījušies pēc 20.saslimšanas dienas
- Pēc iepriekšējiem literatūras avotiem aprakstīts alveolu audu bojājums, kā rezultātā varētu rasties pneumomesdiastinum, tomēr pēc 2021.janvārī fiksētā CT gadījuma, kur var spriest par trahejas priekšējās sienas plīsumu, pacientam kurš pirms tam nav saņēmis invazīvas manipulācijas, ne MPV, jādomā, ka vienlīdz COVID-19 gadījumā tiek ietekmēta kā traheju veidojošie audi, tā arī plaušu alveolu audi, bojājot to struktūru, tomēr precizēšanai būtu nepieciešama tālāki pētījumi un diagnostika

POST COVID-19 SYMPTOM PROFILE IN CHILDREN TESTED FOR SARS-CoV-2

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Actuality / The Goal

The most common course of SARS-CoV-2 infection in children is short-term and with no or mild symptoms. However, more and more recent studies suggest that children continue to have persistent symptoms after SARS-CoV-2 infection, known as "long COVID". The post-COVID19 program for children is created also in Latvia, however, the availability of the service is limited, thus a mobile screening application and online survey was developed.

The goal of the study and the development of the online survey was to screen for those paediatric patients with long COVID who need to see a specialist as soon as possible.

Methods

The study design is prospective cohort, data from starting point. From 1st of November 2021 to 27th of March 2022 two hundred twenty paediatric patients (age 1.5-18 years) at least 4 weeks after SARS-CoV-2 infection and their parents were enrolled in the study. All enrolled patients and parents participated voluntarily and self-reported data through online survey freely available in Latvia. Before starting the screening tool, participants or their parents provided the consent for their data to be analysed and used in the research. Afterwards the children or their parents answer questions and noted the symptoms that have appeared after the child became ill with COVID-19. The symptoms were divided into three categories according to their severity - green, yellow and red. If a patient developed at least one red symptom after acute SARS-CoV-2 infection, it was recommended that they apply for consultation in post-COVID19 program. Descriptive statistics were used to present the data.

Results

A total of 220 children with a laboratory-confirmed SARS-CoV-2 infection were included in the study. From all the patients included in the study 56.8% (n=125) were girls and 43.2% (n=95) were boys. Respondent median age was 8 years.

Symptoms after SARS-CoV-2 were analysed in 4 age groups:

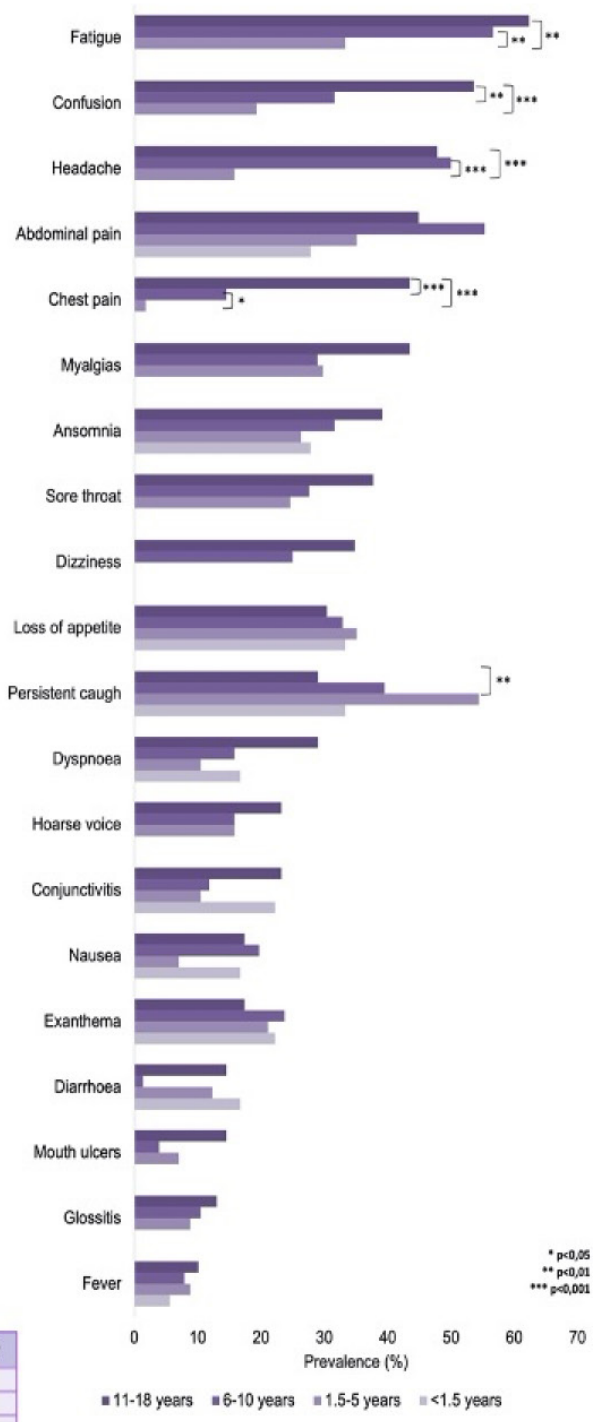
1. <1,5 years (8.2% (n=18) from all respondents);
2. 1,5 – 5 years (25.9% (n=57) from all respondents);
3. 6 – 10 years (34.5% (n=76) from all respondents);
4. 11 – 18 years (31.4% (n=69) from all respondents).

Figure 1 represents COVID-19 symptom distribution in different age groups. In older children, the most prevalent persistent symptoms were fatigue, confusion, headache and chest pain, compared with younger children (see Table 1 and Figure 1).

Table 1. Most frequent symptoms in each age group

Age group	Symptom	Frequency in age group
<1.5 years	Irritability	50%
	Mood swings	50%
	Persistent caugh	33,3%
	Loss of appetite	33,3%
1.5-5 years	Persistent caugh	54,4%
	Mood swings	43,9%
	Irritability	42,1%
6-10 years	Fatigue	56,6%
	Abdominal pain	55,3%
	Headache	50%
	Mood swings	50%
11-18 years	Impaired physical activities	66,7%
	Fatigue	62,3%
	Drowsiness	62,3%

Figure 1. Prevalence of symptoms in all age groups



Conclusions

The online survey is a great way to reach today's paediatric audience and their parents on healthcare issues and according to the findings guide the patient for adequate medical support in a health care system.

SARS-CoV-2 infection affect children's physical health with a wide range of symptoms for at least 4 weeks after an acute infection.

Pulmonary embolism in a patient with COVID-19

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Introduction

Acute infections are associated with a transient increased risk of venous thrombo-embolic events. COVID-19 infection is extremely related to pulmonary embolism. Clinically, it manifests with a very high incidence of thrombosis, particularly in the pulmonary system, whereas bleeding complications are infrequent We present a case of geriatric patient who suffered of severe COVID-19 disease, bilateral pneumonia and had a complication of pulmonary embolism.

Case description

A 85 years old COVID-19-positive woman was hospitalized for severe bilateral pneumonia. The patient had previous record of hypertension, ischemic heart disease and heart failure. The patient's condition was severe. She had dyspnoea, cough, myalgias, and subjective fevers for 5 days. At the hospitalization day her heart rate was 80 bmp, she had a higher than normal blood pressure 150/90 mm/Hg and was saturating around 66% on room air, respiratory rate was 22. She was treated with continuous oxygen therapy. After receiving 15 l/min O2 (via an oral mask with reservoir) she was saturating around 95%. C-reactive protein was mildly increased (peak value of 56,4 mg/L) with no leucocytosis. D-dimer level was performed first day of hospitalization although it was normal 0,91 (0-0,5) µg/mL. In 4 days D-dimer test was performed once more and this time D-dimer level was >20 µg/mL. CTA scan of the chest was performed which revealed small branches embolus (S9-10) in both lungs along with the previously seen pneumomediastinum. In addition, there were widespread peripheral ground-glass opacity and areas of consolidation suggestive of COVID 19 infection. The patient received anticoagulation treatment. In 9 days D-dimer lever dropped to 5,47 µg/mL. Situation was complicated due to hypocoagulation. Patient was diagnosed with posthemorrhagic anemia. The location of internal bleeding was not determined after further examination.

Her hemaglobin levels droped from 121 g/l to 89 g/l in 12 days. 2 units of erythrocyte mass and 2 units of plasma was transfused.
However, patient's condition became worse and pulmonary insufficiency progressed. Patient died after 19 days of hospitalization.

Conclusions

This case demonstrate that Pulmonary embolism is a very dangerous complication of COVID-19 disease. Treatment of these patients demands goal-directed therapy by diligent laboratory monitoring. Healthcare professionals should be aware that PE can occur as a late complication of COVID-19 [1]. Clinicians should perform CT angiography scans and anticoagulation therapy in COVID 19 infected patients, taking into consideration the severity of the illness and D-dimer levels. [2] D-dimer levels are significantly higher in patients with COVID-19 who have PE. In this case patient D-dimer levels increased after 4 days and sudden patient's condition got worse. Pulmonary embolism in COVID-19 is more commonly located in peripheral than in central pulmonary arteries, which suggests local thrombosis to play a major role. D-dimer assessment may help to select patients with COVID-19 for CTPA, using D-dimer cutoff levels of at least 1 µg/mL. [3]. Although knowledge of the mechanisms of thrombosis formation has increased considerably since the pandemic, we need more data on the appropriate anticoagulant therapy for the prevention of thrombosis during COVID-19 infection as well as more further studies regarding COVID-19 associated PE is awaited . [4]

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SARS COV2 kombinācijā ar smagu akūtu ķirurģisku saslimšanu – totālu strutainu peritonītu, sepsi un septisku šoku.

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Sepse tiek definēta kā dzīvību apdraudoša orgānu disfunkcija, ko izraisa organisma disregulēta atbilde uz infekciju.[1] Savukārt multiorgānu disfunkcijas sindroms jeb MODS tiek definēts, kā divu vai vairāk orgānu mazspēja ar vai bez homeostāzes traucējumiem.[2]
Attīstoties MODS, mirstība intensīvās terapijas nodaļā var sasniegt līdz pat 80-90%, turklāt augstāka mirstība ir novērota tieši pacientiem, kuriem MODS skar plaušas un attīstās akūts respiratora distresa sindroms jeb ARDS.[3]
Šajā klīniskajā gadījumā tiek izskatīta paciente, kurai kombinējas divas smagas un potenciāli letālas patoloģijas – SARS COV2 infekcija ar abpusēju pneimoniju un sepse ar septisku šoku, totālu strutainu peritonītu sakarā ar zarnu perforāciju, MODS (nieres, aknas, plaušas, miokards).

Gadījuma apraksts

Paciente 53 gadus veca, 7 dienas slimo ar SARS COV2 infekciju. Pēc 7 dienām pievienojas sāpes vēderā, slikta dūša, caureja, stāvoklim pasliktinoties paciente tiek hospitalizēta. Pirms tam bijusi praktiski vesela.
Uzņemšanas nodaļā – TA 97/60 mmHg, SF – 100x/min.
CT vēdera dobumam – dobā orgāna perforācijas CT aina. Brīvs šķidrums vēdera dobumā.
CT krūškurvim – abpusēji pneimoniska tipa infiltrāti (dxt>sin), atbilst Covid-19 pneimonijai.
Asins analīzēs – **Leu – 9.53, Kreatinīns – 192.17 mkmol/L, GFA – 25.11 ml/min, ALAT – 72.50 U/L, CRO – 325.32 mg/L, Prokalcitonīns – 69.71 ng/ml,**
Pēc vitālām indikācijām tiek veikta neatliekama laparatomija, transversostomija, sanācija, drenāža. Operācijas laikā konstatē totāli strutainu peritonītu.
Tālākā ārstēšanās intensīvās terapijas nodaļā. Pēc pirmās diennakts pacientei **SOFA skala – 15 punkti**.
Pacientes vispārējais stāvoklis ļoti smags, ko nosaka **sepse, septisks šoks ar MODS (nieres, aknas, plaušas, miokards).**
Slimnieces hemodinamika tiek stabilizēta ar noradrenalīna un adrenalīna infūzu, turpinās MPV.
Asins analīzes pirms NNAT: **Leu – 17.31, Kreatinīns – 342.93 mkmol/L, GFR – 12.91 ml/min, CRO – 494.55 mg/L, Prokalcitonīns 84.15 ng/ml, IL-6 106 pg/ml**
Tiek lemts par NNAT – **nepārtrauktu veno-venozu hemofiltrāciju ar augstas plūsmas membrānu un citokīnu adsorbcijas filtru,** kopējais procedūras ilgums 72h. Pēc tam tiek nolemts pāriet uz IHD, un kopumā veikti 3 seansi – kopā terapijas ilgums 12h.
Kontroles CT krūškurvim – COVID19 pneimonija ar negatīvu dinamiku, plaušu bojājums ap 50%.
Ilgstoši nepieciešama MPV, tāpēc paciente arī traheostomēta.
Dinamikā pacientes vispārējais stāvoklis pakāpeniski uzlabojas, tiek atvienota no MPV, dinamikā vērojama nieru funkcijas uzlabošanās, mazinās COVID19 pneimonija.
Analīzes izrakstoties: - **Leu 7.39, Kreatinīns 56.16 mkmol/L, GFA – 103.80 ml/min, CRO – 12.91 mg/L.**
RTG krūšu kurvim – Pārmaiņas plaušās ar uzlabošanos dinamikā.

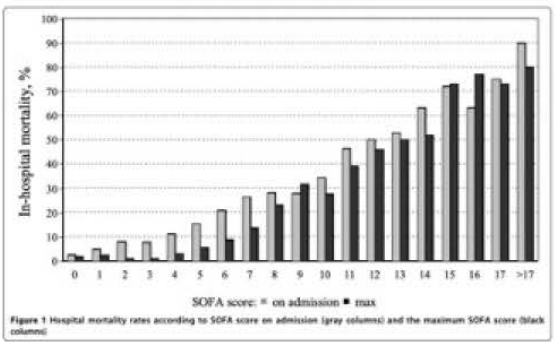

Figure 1 Hospital mortality rates according to SOFA score on admission (gray columns) and the maximum SOFA score (black columns)

1. Attēls Mirstībā slimnīcā atkarībā no SOFA skalas iestāšanās dienā un augstākā SOFA rādītāja *(Sakr Y et al 2012)*

	Pirms *Cytosorb* kursa	Pēc *CytoSorb* kursa
SOFA SKALA	15 punkti	12 punkti
APACHE II	28 punkti	19 punkti

1. Tabula SOFA un APACHE II pirms un pēc *CytoSorb* pielietošanas

Pacientu **mirstība** intensīvās terapijas nodaļā sepses un septiska šoka ar vai bez MODS gadījumā vēl joprojām saglabājas **ļoti augsta**. Aprakstītajā gadījumā pacientes vispārējo smago stāvokli noteica arī SARS COV2 infekcija, jo bija attīstījusies abpusēja pneimonija, kas dinamikā progresēja.
Pasaulē arvien pieaug pierādījumu, ka kritiski smagiem COVID19 pacientiem bieži vērojama vīrāla RNSēmija kopā ar disregulētu imūno atbildi, ar hiperiekaisumu, kas izpaužas kā **citokīnu vētras** vai **citokīnu atbrīvošanas sindroms (CAS),** kas veicina augsto mirstību.[4]
Lai gan labaratoriski pacientei nav vērojama citokīnu vētra, ņemot vērā COVID19, sepsi un septisko šoku ar progresējošo MODS, augstiem iekaisuma rādītājiem, tika nolemts uzsākt agrīni NNAT un pievienot citokīnu adsorbējošu filtru – CytoSorb, kas palīdz adsorbēt tādus iekaisuma citokīnus kā **TNF, IL-6, IL-8, C5a** u.c.
Ruiz-Rodríguez et al apraksta, ka CytoSorb pielietošana smagiem COVID19 pacientiem ar septisku šoku un ARDS mazina nepieciešamību pēc vazopresoriem, uzlabo **SOFA vērtējumu**, kā arī uzlabo **PaO_2/FiO_2 attiecību.**[4]
Viens no sepses ārstēšanas stūrakmeņiem ir **agrīna infekcijas perēkļa atpazīšana**, kas šajā gadījumā bija strutains peritonīts, resnās zarnas perforācijas rezultātā. Nepieciešams agrīni pacientu stabilizēt, ja nepieciešams uzsākt **vazopresoru atbalstu**, kas šajā gadījumā bija uzsākti jau operācijas zālē. Šai pacientei grūti diferencēt, kas noteica ARDS smagumu, jo ar COVID19 bija ārstējusies ambulatori, taču **lielā plaušu bojājuma dēļ** bija nepieciešama ilgstoša MPV.
Neskatoties uz pacientes prognozēto slikto prognozi gan pēc **SOFA**, gan **APACHE II** skalas (skat. 1. Tabulu), aktīva iesaiste un rīcība no dažādiem speciālistiem – ķirurgiem, anesteziologiem/reanimatologiem, nefrologiem veicināja to, ka dinamikā mazinājās COVID19 pneimonija, tika reducēts septisks šoks, mazinātś MPV atbalsts, kā arī atcelta NAT un izrakstīšanās brīdī bija arī atjaunojusies normāla nieru funkcija.

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SARS-CoV-2 antibody and T cell interferon-γ release response in patients with chronic lymphocytic leukemia

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Actuality

Patients with chronic lymphocytic leukemia (CLL) are at increased risk of infections, including SARS-CoV-2. Additionally, response to vaccination is reduced due to immune dysregulation. The aim of our study was to evaluate both B cell response as antibody levels and T cell response as interferon gamma (IFN-γ) release in CLL patients following SARS-CoV-2 vaccination.

Methods

Blood samples from SARS-CoV-2 vaccinated healthy controls (HC) and CLL patients were collected. CLL patients were divided in two groups – untreated (newly diagnosed and watch-and-wait patients) and with current chemotherapy (wihout monoclonal antibodies).
Serum levels of SARS-CoV-2 immunoglobulin (Ig) G class antibodies were determined with Abbott chemiluminescent microparticle immunoassay with cut-off level 50 AU/mL.
For indirect T cell response evaluation QuantiFERON SARS-CoV-2 kit was used. Briefly, after 20 h whole blood in vitro stimulation with SARS-CoV-2 specific peptides plasma was collected and interferon gamma (IFNγ) level determined with a cut-off of 0.15 IU/mL. We used two different stimulations: Ag1 for T helper cells and Ag2 to elicit both T helper and T cytotoxic immune responses.
Flow cytometry was used to detect the CLL malignant clone ($CD5^+$ B cells) (Figure 1). Data analysis was done with GraphPad Prism software version 9.2.0.
The study was approved by the Ethics Committee of the Riga East Clinical University hospitals Support Foundation (no. 7-A/21).

Table. Study cohort characteristics.

Variables	HC (n = 5)	CLL (n = 10)
Age (in years)		
Median	62	67
Range	60-64	58-77
Sex		
Male	2	5
Female	3	5
Therapy		
Untreated	-	6
Current therapy	-	4

Results

Data from five HC and ten CLL patients were analyzed (Table). The untreated CLL group consisted of three newly diagnosed and three watch-and-wait patients. Median time since last vaccination was 3 months in both groups (range in the HC 1-6 and in the CLL group 1-8 months). Four persons in the HC group and seven of the CLL patients had received the booster vaccination. In the HC group all persons had anti-SARS-CoV-2 IgG levels above the cut-off. In the CLL group one patient (watch-and-wait) had anti-SARS-CoV-2 IgG below cut-off, although this patient had an IFN-γ response to Ag1 and Ag2 (Figure 2a and Figure 3). In our preliminary CLL cohort, there was no correlation between the frequency of $CD5^+$ B cells and anti-SARS-CoV-2 IgG levels (Figure 2b). Among HCs one individual had Ag1 response below the cut-off; this was also the case for three CLL patients. All study participants elicited a response to Ag2 (Figure 3). While statistical analysis did not show a significant difference, there was a trend in the untreated CLL group to have lower antibody levels and higher cellular immune responses than HC.

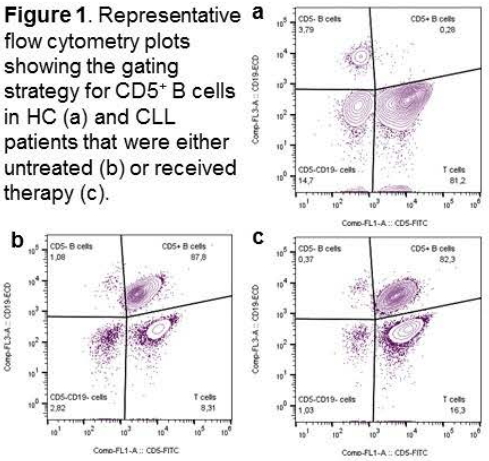

Figure 1. Representative flow cytometry plots showing the gating strategy for $CD5^+$ B cells in HC (a) and CLL patients that were either untreated (b) or received therapy (c).

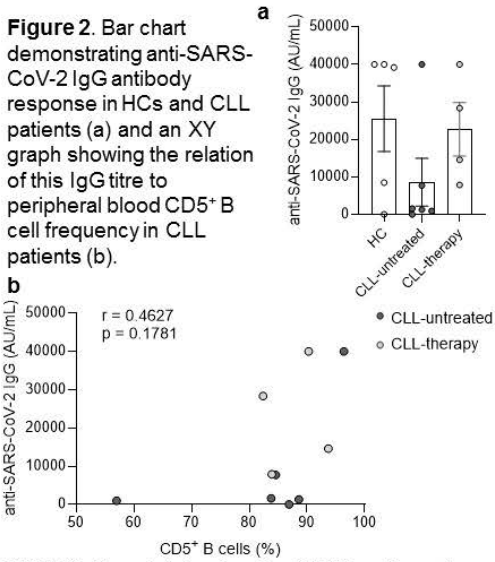

Figure 2. Bar chart demonstrating anti-SARS-CoV-2 IgG antibody response in HCs and CLL patients (a) and an XY graph showing the relation of this IgG titre to peripheral blood $CD5^+$ B cell frequency in CLL patients (b).

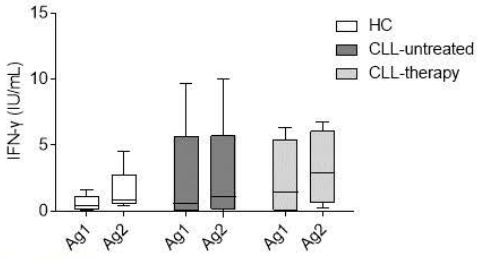

Figure 3. Box plot showing T cell IFN-γ release in response to peptides that stimulate T helper cells only (Ag1) or T helper and cytotoxic T cells (Ag2).

Conclusions

Our preliminary data suggest that CLL patients have altered response to SARS-CoV-2 vaccination. In cases of reduced antibody levels determination of cellular immune response can give valuable additional information. We plan to extend these findings on the protective effect of increased cell-mediated immunity to larger cohorts of CLL patients.

SARS-CoV-2 Omicron (B.1.1.529) varianta un to subtipu izplatības dinamika Latvijā

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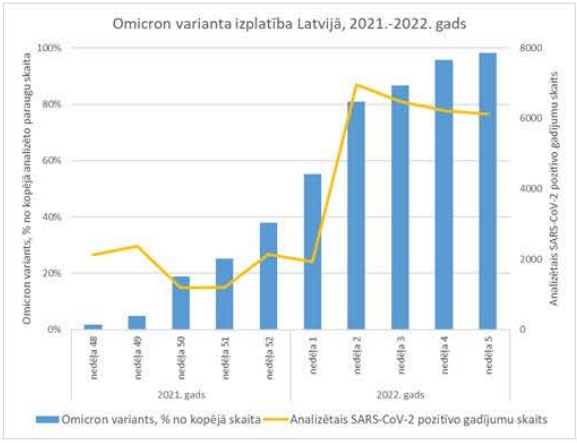
2. **Rīgas Stradiņa universitāte, Infektoloģijas katedra**

Aktualitāte / Mērķis

Līdz ar jaunā SARS-CoV-2 Omicron varianta (B.1.1.529) straujo izplatību Latvijā 2021. gada beigās/2022. gada sākumā ir radusies nepieciešamība noteikt šī varianta epidemioloģiskās izplatības dinamiku populācijā un pirms tam dominējošā SARS-CoV-2 Delta varianta (B.1.617.2) nomaiņu.

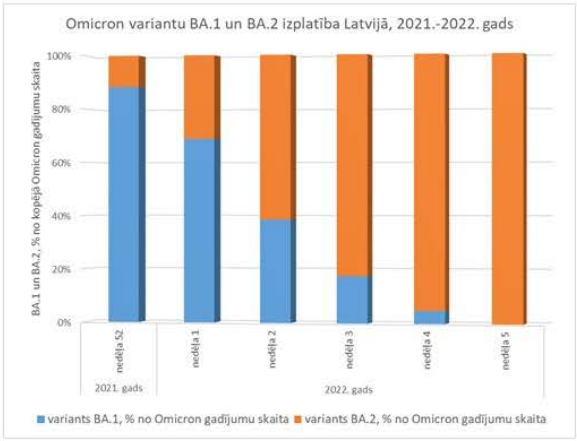
Pētījumā mērķis bija noteikt jaunā Omicron varianta izplatību Latvijā, salīdzinot ar citiem populācijā cirkulējošiem SARS-CoV-2 variantiem, kā arī diferencēt atklāto Omicron gadījumu piederību BA.1 subtipam (variants B.1.1.529.1) vai BA.2 subtipam (variants B.1.1.529.2).



SARS-CoV-2 vīrusa klātbūtne nazofaringeālajās un orofaringeālajās iztriepēs tika noteikta, veicot vīrusa RNS izdalīšanu un reverso transkripciju ar tam sekojošu reālā laika polimerāzes ķēdes reakciju (RT-PĶR).

Kopumā 36 719 paraugiem tika veikts SARS-CoV-2 Omicron variantam raksturīgo mutāciju (E484A, N501Y un delēcijas 69/70del) skrīnings. Tas tika veikts, izmantojot automatizēto RNS izdalīšanai iekārtu Seegene NIMBUS ar STARMag 96 X 4 Universal Cartridge Kit (Seegene Inc.) nukleīnskābju izdalīšanas komplektu. RT-PĶR tika izmantots *Novaplex™ SARS-CoV-2 Variants VII Assay* (Seegene Inc.) testēšanas komplekts.

Izmantotā testsistēmā ietvertās E484A un N501Y mutācijas ir SARS-CoV-2 vīrusa Omicron varianta specifiskas, delēcijas 69/70del klātbūtne ļauj izšķirt testēto paraugu piederību Omicron subtipiem BA.1 (ar delēciju) vai BA.2 (bez delēcijas).



Rezultāti

SARS-CoV-2 Delta varianta (B.1.617.2) nomaiņa Latvijā 2021. gada beigās/2022. gada sākumā uz SARS-CoV-2 Omicron variantu (B.1.1.529) notika 10 nedēļu laikā ar izplatības pieaugumu no 2 % testēto paraugu 2021. gada 48. nedēļā uz 98 % testēto paraugu 2022. gada 5. nedēļā. Visstraujākais pieaugums konstatēts 2022. gada 1. – 2. nedēļā ar 17 % SARS-CoV-2 Omicron varianta (B.1.1.529) pieaugumu. Pie tam SARS-CoV-2 Omicron (B.1.1.529) subtipu nomaiņa no BA.1 uz BA.2 notika 6 nedēļu laikā. BA.2 subtipa izplatība 2021. gada 52. nedēļā konstatēta 12 % līmenī, savukārt % 2022. gada 5. nedēļā sasniedza gandrīz 100 %. BA.2 subtips konstatēts kā dominējošais subvariants 2022. gada 2. nedēļā.

Secinājumi

SARS-CoV-2 Omicron variants (B.1.1.529) Latvijas populācijā 2021. gada beigās/2022. gada sākumā kļuva par dominējošo variantu. Strauja Omicron varianta izplatība tiek saistīta ar vīrusa augsto infekciozitāti.

Selenium, Selenoprotein P and Oxidative Stress Levels in SARS-CoV-2 Patients During Illness and Recovery

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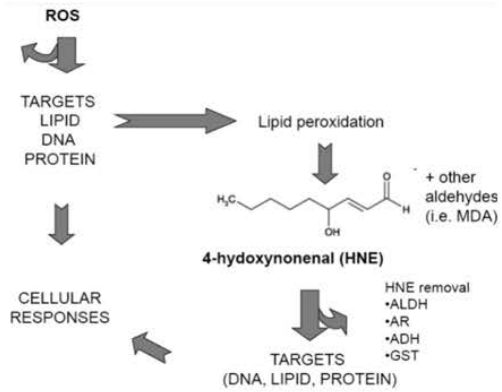
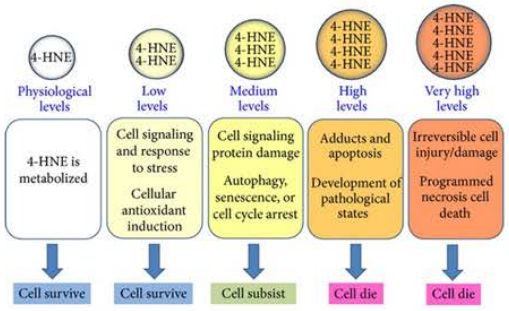
Actuality / The Goal

This study aimed to detect levels of Se, Selenoprotein P (Sepp1), malondialdehyde (MDA) and 4-hydroxynonenal (4-HNE) adducts in the acute period. First, in patients hospitalized in Pauls Stradiņš Clinical University Hospital in the COVID-19 department or intensive care unit, and patients 2 months following their discharge from the hospital. Thus, several hypotheses would be tested, including Se deficiency may reduce immunity and thus contribute to the high incidence of COVID-19; the degree of Se and/or Sepp1 deficiency may be directly related to the severity and prognosis of the disease; oxidative stress directly affects the incidence and severity of the disease.

Methods

The study was conducted with 80 post-COVID-19 disease patients and 40 acutely ill patients. Content of selenium in blood plasma was detected by a fluorometric method with diaminonaphthalene using acidic hydrolysis. Sepp1, MDA and 4-HNE adducts and their metabolite adducts were evaluated by spectrophotometric methods using commercial assay kits.





Results

Obtained results showed that selenium content in blood for post-COVID-19 disease patients was of a similar lower norm for Latvian inhabitants. Selenium and selenoprotein P content for acute patients was significantly decreased compared with post-COVID-19 disease patients

Conclusions

In conclusion, COVID-19 involves induction of antioxidant systems – in case of severe disease, patients have significantly low concentration of selenium, selenoprotein P and higher level of oxidative stress, which, in turn, confirms the more intense formation of free radicals in the body.

Parameter	Acute, N = 40	Spring-summer wave, N = 40	Summer-autumn wave, N = 40	p-value
Se	69,7 (20,8)	84,6 (20,7)	88,2 (27,2)	0,001
Sepp1	4,5 (2,4)	5,5 (2,2)	6,8 (2,3)	<0,001
MDA	26,6 (10,8)	31,0 (18,6)	26,6 (10,8)	0,268
4-HNE Add	5,1 (2,4)	3,4 (1,9)	3,9 (1,8)	<0,001

Short-term outcomes in children after multisystem inflammatory syndrome (MIS-c) associated with SARS-CoV-2 infection

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Actuality

Multisystem inflammatory syndrome (MIS-c) associated with the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a relatively new acute and life threatening childhood condition reported worldwide. It is an immune-mediated hyperinflammatory state causing multiorgan involvement and dysfunction. Since the first reported MIS-c cases in April 2020, considerable effort has been made in order to understand the pathophysiology and risk factors for acute MIS-c as well as to develop diagnostic criteria and best treatment possibilities for this condition. However, data about long-term health effects and persistent organ damage is lacking.

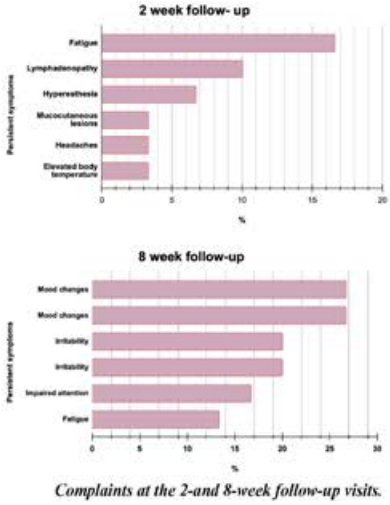
Methods

This was a prospective cohort study with the aim to identify and describe 6-month outcomes of multisystem inflammatory syndrome in children. From January 2021 to January 2022 thirty MIS-c patients admitted to Children's Clinical University Hospital were enrolled in the study. To identify the short-term outcomes, all patients were evaluated in face-to-face visits 2 weeks, 8 weeks, and 6 months after admission using clinical assessment, as well as laboratory testing and cardiological examination.

Results

Thirty MIS-c patients were enrolled in the study. The median age was 9 years [Interquartile range (IQR), 5–8 years; range, 1 −18 years], 53.3% (N = 16) of patients were boys. Four children (13,3%) had known pre-existing comorbidities. At the time of hospital admission only 56,7% (N=17) of children had confirmed SARS-CoV-2 infection in the past. 57% (N=17) of children in acute MIS-c phase were admitted to Paediatric Intensive Care Unit (PICU) due to hemodynamic instability or shock. During the two-week follow up visit 26,6% (N=8) of children had subjective complaints about symptom persistence. The most common complaints were about persistent fatigue (16,6%, N=5), lymphadenopathy (10%, N=3) and hyperesthesia (6,7%, N=2). The frequency of reported persistent complaints increased with subsequent follow-up visits, reaching the peak at 8-week follow-up (63.3%, N=19). Most often reported symptoms at 8-week cut-off point were cognitive sequelae, including mood swings (26,7%, N=8), irritability (20%, N=6), impaired attention (16,6%, N=5) as well as anxiety/depression (10%, N=3) and difficulties to concentrate (10%, N=3). In addition, complaints about weight gain (26,6%, N=8), fatigue (13,3%, N=4), and myalgia (10%, N=3) were also reported. Notably these symptoms were primary reported (81,4%) by teenagers (aged 12-18 years). Twenty children (66,7%) were followed-up at six months. At this time point seven children (35%) had symptom persistence with most frequent complaints about cognitive sequalae with mood swings (25%, N=5) and irritability (15%, N=3) being the most common ones.

Laboratory testing showed that 90% (N=27) of children had abnormal complete blood cell counts and platelet counts at two weeks. Eighteen (60%) of 30 children had abnormal inflammatory parameters (D-dimers, ferritin, C-reactive protein (CRP), lactate dehydrogenase (LDH), interleukin-6 (Il-6). Significant improvement of hematologic and inflammatory parameters was seen at 8-week and 6-month follow-up. In addition, electrocardiograms were abnormal in 18 (60%) of 30 patients at two weeks, but echocardiograms were abnormal in 4 (13.3%) patients at two weeks, including two patients with diagnosed coronary artery involvement and two children with insignificant mitral regurgitation. In subsequent follow-up visits at eight weeks and six months all patients had normal cardiological findings.



Complaints at the 2-and 8-week follow-up visits.

Conclusions

MIS-c is a new challenge in paediatrics with unknown long-term impact on children's well-being. Our research showed that significant abnormal clinical, laboratory and cardiological findings were seen in majority of patients two weeks after acute phase of multisystem inflammatory syndrome with subsequent improvement in the following weeks. In addition, reported long-term symptoms were mild and without serious organic damage. In our cohort, cognitive sequalae was major problem in teenagers, especially at eight week cut-off point, indicating that reported symptoms may be "pandemic associated", thus making it difficult to distinguish direct MIS-c caused complains from symptoms caused by "pandemic associated" restrictions (i.e., restricted socializing, school closures), which have been shown to have negative effects on the well-being and mental health of children and adolescents. However, these symptoms need to be taken in consideration in all cases. Further in-depth research about these long-term outcomes are needed in order to provide timely and and patient-centered treatment and rehabilitation possibilities.

SIGNS, SYMPTOMS AND CLINICAL FINDINGS OF MULTISYSTEM INFLAMMATORY SYNDROME IN COMPARISON WITH KAWASAKI DISEASE AND TOXIC SHOCK SYNDROME IN CHILDREN

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Actuality / The Goal

Multisystem inflammatory syndrome in children (MIS-C) is recently introduced clinical syndrome that is caused by late immune response to SARS-CoV-2 virus. Recognition of MIS-C is frequently complicated as it resembles clinical picture of Kawasaki disease (KD) and toxic shock syndrome (TSS). The goal of this study was to analyze signs and symptoms of MIS-C and to compare them with clinical picture of KD and TSS. Analysis includes clinical findings in instrumental investigations.

Methods

This retrospective study was conducted at the Children's Clinical University Hospital in Riga, Latvia, and involved children <18 years old who were hospitalised during the period from 2012 to 2021 with MIS-C, KD or TSS. Clinical data and results of instrumental investigations were collected from medical records and analysed using descriptive parametric and non-parametric statistics. A statistically significant difference between groups was assumed where *P*-value was <0.05.

Results

- ✓ A total 81 patients were included in this study: 39 (48.1%) with KD (mean age 3.9 years; 59% boys), 29 (35.8%) with MIS-C (mean age 9.8 years; 55.2% boys) and 13 (16.1%) with TSS (mean age 11.3 years; 38.5% boys).
- ✓ Complete KD criteria or incomplete KD criteria fulfilled all KD patients, 27 (93.1%) MIS-C patients and only 4 (30.8%) patients with TSS.
- ✓ More than a half of patients with MIS-C (51.7%) and 69.2% of patients with TSS were admitted to an intensive care unit, which was higher than for KD (15.4%, *P*<0.001). There were no deaths among patients with MIS-C, KD or TSS.
- ✓ Comparison of clinical characteristics among KD, MIS-C and TSS patients is summarized in **Figure 1**. Several signs and symptoms had similar prevalence among all the groups: changes in oral cavity, polymorphous exanthema, edema and/or desquamation in palms and feet and cough.
- ✓ **KD patients** in comparison with MIS-C and TSS group **had higher prevalence of conjunctivitis** (P=0.01), **cervical lymphadenopathy** (*P*=0.006) and **musculoskeletal symptoms** - arthralgias and synovitis (*P*<0.001).
- ✓ **Patients with MIS-C were more likely to have gastrointestinal symptoms such as abdominal pain** (*P*<0.001) **and diarrhea** (*P*=0.003) than in other two research groups. They more often presented with **headache** (*P*=0.003), **shortness of breath** (*P*=0.02) and had pleural effusion recognized in ultrasound or thoracic x-ray. In comparison with KD and TSS group, MIS-C patients had **higher prevalence of cardiovascular involvement.** Findings in thoracic x-ray, ultrasound, and echocardiogram are shown in **Table 2**.

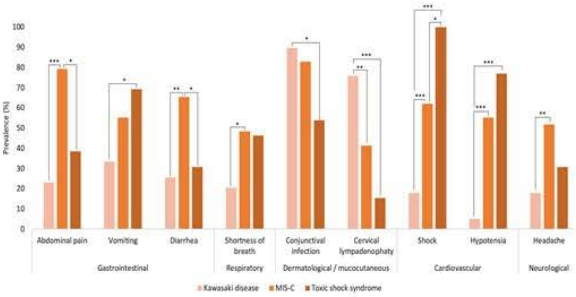

Figure 1. Clinical characteristics of patients with KD, MIS-C and TSS (* (*P* < 0.05), ** (*P* < 0.01), *** (*P* < 0.001))

- ✓ Cardiac involvement was detected in all MIS-C patients and was observed in distinctive extent.

ECG analysis showed, that 26 (89.7%) of patients with MIS-C had non-specific changes in ST-segment, and 6 (20.7%) patients had atrioventricular conduction disturbances that may indicate inflammatory changes in myocardium. KD patients had significantly lower prevalence of ST-segment changes (n=5; 19.2%, *P*<0.001). Such signs on ECG were not recognized in TSS patients.

Majority (82.8%) of MIS-C patients had pathological changes in echocardiography. Most prevalent signs were valvular insufficiency (n=21; 72.4%), pericardial effusion (n=12; 41.4%) and pleural effusion (n=22; 75.9%). In 8 (27.6%) MIS-C patients reduced systolic function was detected.

Compared with KD group, both MIS-C and TSS patients had high rates of shock and hypotension (*P*<0.001). Because of haemodynamic instability 11 (37.9%) MIS-C and 6 (46.2% TSS) patients demanded inotropic agents that was significantly more often than in KD group (n=1; 2.6%, *P*<0.001).

Table 2. Findings in instrumental investigations

Variable	KD	MIS-C	TSS	Total	*P*-value
Thoracic x-ray Pneumonia	6 (15.4)	10 (34.5)	4 (30.8)	20 (24.7)	0.17
Thoracic x-ray or ultrasound Pleural effusion	9 (23.1)	22 (75.9)	5 (38.5)	36 (44.4)	<0.001
Pathological changes in electrocardiogram (ECG), n (%)	12 (30.8)	28 (96.6)	1 (7.7)	41 (50.6)	<0.001
Echocardiography findings					
Pathological changes, n (%)	5 (12.8)	24 (82.8)	0	29 (39.7)	<0.001
Valvular insufficiency, n (%)	3 (7.7)	21 (72.4)	0	24 (29.6)	<0.001
Pericardial effusion, n (%)	0	12 (41.4)	0	12 (14.8)	<0.001
Systolic dysfunction, n (%)	0	8 (27.6)	0	8 (9.9)	<0.001
Coronary artery changes in acute phase, n (%)	4 (10.3)	1 (3.4)	0	5 (6.2)	0.46

Conclusions

Despite MIS-C, KD and TSS shares several clinical similarities, there are significant differences among these groups. Additional instrumental investigations are useful for making final diagnosis.

Skin lesions in patients after COVID-19 infection

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Actuality / The Goal

Severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2), is still an alternating challenge for medical professionals. Dermatologists of Clinic for Dermatology and Venerology, Riga 1st hospital are consulting patients with extrapulmonary, in particular, skin signs associated with COVID-19. The associated cutaneous manifestations are often supported by complaints of patients concerning diffuse constant hair loss. Aim of the current study is to determine particular patterns of virus induced shin rash in patients after COVID-19 illness.

Methods

Dermatologists of Clinic for Dermatology and Venerology, Riga 1st hospital in consulted 292 patients who presented with different skin conditions after COVID-19 illness during 26 months period of COVID-19 pandemic from January, 2020 till February 2022. In total data of 186 female and 106 male patients were analyzed. Descriptive statistics methods have been applied to summarize the answers concerning multiple different cases.

Results

In 26 months period in total 292 patients with lesions after COVID-19 were consulted at least once by dermatologists of Clinic for Dermatology and Venerology, Riga 1st hospital. The process of differential diagnosis revealed the fact that not all conditions that patients considered to be caused by SARS-CoV-2 appeared to be induced by the illness. In 15-20% of cases the differential diagnosis was condition caused by allergy to medicines, infection of the skin and its appendages, lichen, frostbite, and artificially caused skin lesions. 107 patients presented with urticaria and angioedema that indeed can be triggered by viral and bacterial agents, confluent erythematous or maculopapular or morbilliform rash had 48 patients, papulovesicular exanthem had 32, livedo reticularis was found in 47 patients, purpuric vasculitis-like rash in 58 patients. Constant hair loss reported 54 patients, 32 female and 22 male patients. Telogen effluvium is the process when more hairs than normal enter the telogen phase of the hair growth lifecycle at the same time. Telogen effluvium is a challenging issue as the hair regrowth is slow, can be incomplete nevertheless applied all recommended treatment modalities. A fever or illness, emotional stress can force more hairs into the shedding phase that can last for six to nine months before it stops.

Understanding the possible mechanism of development of pathological skin condition has to be supported by results of investigations. Timely diagnostics and availability of proper investigations are crucial to set correct diagnosis of skin lesions after COVID-19.

Patient's opinion concerning skin lesions is to be proved by anamnesis, clinical and laboratory evaluation, and data from histological, immunohistochemical analysis of biopsy tissue.

Virus-induced endothelial damage, obliterative microangiopathy and coagulation abnormalities are suspected to be mechanisms involved in the pathogenesis of these lesions. Vasculitis lesions may evolve gradually into hemorrhagic blisters. Chilblain-like acral lesions associated with COVID-19 could be depicted as erythematous-violaceous patches or plaques predominantly involving the feet, less the hands. Dermoscopy of purpuric lesions revealed the presence of papules with incomplete violaceous rim and a central yellow globule.

Different pathogenetic hypotheses, including increased interferon release induced by COVID-19 and consequent cytokine-mediated inflammatory response, have been suggested. The consequences after COVID-19 infection, hair loss and persistent skin lesions are challenging as there is no treatment, that is pathogenetic. Symptomatic remedies, systemic and topical, are effective while administered. Analyzing reports in medical files, systemically used antihistamines show minor effect. Corticosteroid treatment - intravenous, peroral and topical is the treatment of choice prescribed on purpuric lesions that may be generalized, often localized in the intertriginous area or arranged in an acral parts. Administration of corticosteroids is limited by potential side effects and limited recommended duration of treatment.

Conclusions

After severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2) ilness, dermatological patients present with polymorphic nature of COVID-19-associated cutaneous manifestations particularly, urticarial rash, confluent erythematous or maculopapular or morbilliform rash, papulovesicular exanthem, chilblain-like acral pattern lesions, livedo reticularis, purpuric vasculitis-like rash, extensive diffuse hair loss. The consequences resembling as skin lesions after COVID-19 infection are alarming as there is no pathogenetic treatment.

MICROCIRCULATION MONITORING IN COVID-19 PATIENTS

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Actuality / The Goal

Skin microcirculation monitoring can be applicable for bedside use in critically ill patients. For COVID-19 patients signs of endotheliitis have been reported suggesting microvascular dysfunction which may lead to tissue hypoxia out of proportion with systemic oxygenation. The objective of this case series was to investigate the relationship between skin microvascular oxygenation and systemic oxygenation values.

Methods

3 patients with COVID-19 infection who met Berlin criteria for severe ARDS were compared with 10 healthy volunteers. Fibrooptic spectrometry was performed for 3 ICU patients with COVID-19 and severe ARDS and 10 healthy volunteers, to calculate microcirculatory oxygen saturation from relative oxy/deoxyhemoglobin concentration. We analyzed association between microcirculatory and systemic oxygenation in COVID-19 patients and compared them with values of healthy volunteers.

Results

There were 3 patients with COVID-19 infection and severe ARDS enrolled in this case series (two males, mean age 68,3 years, mean PaO2/FiO2 – 74,4). Microcirculatory oxygen saturation was significantly lower in COVID-19 patients than healthy volunteers (61; (50;70) vs (32.9 (0–100) %, and 85.0 (81.0–89.0) %; $p < 0.001$). There was no association between arterial partial oxygen pressure and microcirculatory saturation (rho= -0.12)(p=0.3).

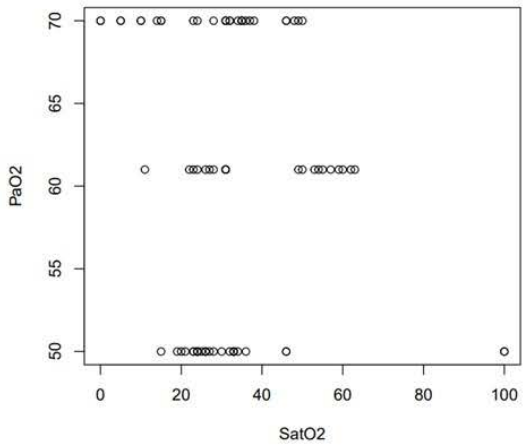

Figure 1. Relationship between arterial oxygenation and skin microcirculatory saturation

Figure 2. Fibrooptic spectromoter

Conclusions

Patients with COVID-19 and severe ARDS have significantly lower microcirculatroy oxygen saturation than healthy volunteers. In this case series hypoxic patients with similar arterial partial oxygen pressure values had varied tissue SpO2 measured by fibrooptic spectrometry.

Surveillance of patients with skin pigmented lesions during Covid-19 pandemic

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Actuality / The Goal

Dermoscopy is a powerful tool for diagnostics of suspicious skin lesions in the hand of experienced dermatologist. Dermatologists of Clinic for Dermatology and Venerology, Riga 1st hospital provide qualified diagnostics applying total body mapping with MoleMax system, digitally assisted dermoscopy and manual dermoscopy with HEINE DELTA 20T dermatoscope, although the availability to apply these methods has been influenced by an unpredictable factor. The period of Covid-19 pandemic during 2020-2022 has diminished the possibility for patients to access visits in Clinic for Dermatology and Venerology both - due to their personal, or illness of doctors. This situation has lead to disappointment of patients and more intensive use of "green corridor" referring skin cancer patients to surgeon oncologist to Riga East University Hospital, Oncology Centre of Latvia. Aim of the current study is to determine correctly the efficacy and outcome of delayed diagnostics of melanoma and non-melanoma skin cancer during period of COVID-19 pandemic.

Methods

In total 34 clinic dermatologists were interviewed concerning factors influencing the timely diagnostics of pigmented and non-pigmented skin lesions within 26 months period of COVID-19 pandemic from January, 2020 till February 2022. 398 patients with suspected skin cancer were investigated by dermatologists. Interview results were evaluated according the main criterion – duration in weeks that passed from the first notice of the suspicious skin lesion by patient till the moment when proper diagnosis has been set. Other criteria as number of cancelled visits for a patient due to COVID-19 because of doctor's or patient's illness were taken into account. Descriptive statistics methods have been applied to summarize the answers concerning multiple different cases.

Results

All personnel of Clinic for Dermatology and Venerology, Riga 1st hospital is vaccinated against COVID-19, already with boost 3rd vaccine for January, 2022. Although, most of the doctors experienced COVID-19 illness at least once during pandemic period. In 26 months period in total visits for 304 patient's complaining for suspicious lesions for melanoma and non-melanoma skin cancers were cancelled due to COVID-19 illness, out of them 62% were cancelled due to illness of patients.

The important role played the fact that the diagnosis of skin cancer mostly affects elderly patients, but the number of those patients who were not vaccinated against COVID-19 was particularly in this age group.

23 patients were consulted and got recommendations from dermatologists to receive vaccine against COVID-19 in Riga 1st hospital.
Currently there is a rise in cases of delayed diagnostics both for melanoma and for non-melanoma skin cancers. In total 42 basal cell skin cancer, 16 squamous cell skin cancer and 19 melanoma patients including 3 non-pigmented melanoma skin cancer were referred for further treatment to surgeon oncologist in Oncology Centre of Latvia, Riga East University hospital.

The mean calculated delay between the 1st planned but cancelled visit to dermatologist till actual visit date was 7 weeks. The time included waiting period for the next visit due to ques. COVID-10 actualized problem of lack of dermatologists with good experience in digital and manual dermoscopy method. Mean period of COVID-19 illness or quarantine of a dermatologist was 4,5 weeks.

Timely diagnostics performed by dermatologists, experts in dermoscopy method to diagnose melanoma and non-melanoma skin cancers was a serious problem during the COVID-19 pandemic in the period of January, 2020 till February 2022. The delayed start of treatment, especially, in melanoma skin cancer, lead to suffering of patients, significant disfigurement due to excision scars and risk of development of metastasis.

THE MANAGEMENT OF MULTIPLE PREGNANCY (TRIPLETS) WITH SEVERE COVID-19 INFECTION. CLINICAL CASE PRESENTATION

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INTRODUCTION

The multiple pregnancies associated with COVID-19 is a new and difficult condition to manage. These are associated with an increased number of complications and most of the time represent a challenge for the obstetric team. Until now, there is still limited scientific evidence of the potential impact of the SARS-CoV-2 virus on pregnancy evolution.

CASE DESCRIPTION

A 32-year-old pregnant primipara was admitted to the Reanimation unit, 3rd level Perinatal Center, Institute of Mother and Child.

Diagnosis: Pregnancy 24 weeks of gestation (w.g.). G1P1. Triplets. Placenta praevia lateralis in 1st fetus. Complicated gynecological history by cystectomy (2015), bilateral tubectomy (2019). Positive test for SARS-CoV-2 infection. Acute bronchitis. Iron deficiency anemia of 2nd degree. Congential heart abnormality, IH I-II NYHA. Systemic scleroderma. Cystic fibrosis of the breast. The pregnancy was obtained by the fourth in vitro fertilization attempt.

Complains at the time of admission:

- ✓ General weakness
- ✓ Dyspnea on effort
- ✓ Loss of appetite
- ✓ Dry cough
- ✓ Sore throat and
- ✓ Sever (37.6°C)

The general condition of medium severity. The uterus enlarged in size corresponds to the gestational age, FHR_1 138 b/min; FGR_2 142 b/min; FHR_3 144 b/min.

The patient's **condition was complicated by**

- ❑ Bilateral pneumonia mixed virus-bacterial etiology, with severe evolution (lung damage 25-30%)
- ❑ Multiple organ dysfunction syndrome (MODS)
- ❑ Respiratory insufficiency of 1st degree
- ❑ Dysmetabolic heart disease
- ❑ Hepatic dysfunction with cytolytic syndrome
- ❑ Reactive pancreatitis
- ❑ Anemia of 2nd degree.

Management:

- ✓ Assessment of maternal and fetal parameters (SPO_2, RF, BP, Ps, FHR, cardiotocography).
- ✓ Antibacterial, antipyretic, anticoagulant, respiratory and broncholysis therapy; O_2 therapy with mask; hepatotective, antisecretory, vitamin therapy, probiotics, tocolysis, glucocorticotherapy, and transfusion therapy.

After 2 weeks with negative COVID-19 PCR test, the patient was transferred to the ward. After 5 days, the patient was discharged, in a good condition, with specific recommendations.

The patient was admitted repeatedly with

- ❑ Vaginal hemorrhage and
- ❑ Lower abdominal pain at the 28th w.g.

It was decided to perforne an emergency caesarean section under general anesthesia. All children were extracted without complications weighting:

I	II	III
1148 g Apgar 6/7	932 g Apgar 6/7	836 g Apgar 6/7

COVID-19 tests were negative in all children; they were intubated and admitted in the NICU due to prematurity and signs of respiratory failure; they were isolated.

On the 14th day postpartum, the condition of the first child worsened and despite the resuscitation measures taken, he died. The other two children are still admitted in the premature unit for new-borns, having a favorable prognosis.

CONCLUSIONS

- ❑ Multiple pregnancies are associated with increased complications, most of them representing a challenge in decision-making process
- ❑ A comprehensive approach and a multidisciplinary teamwork (obstetrician, anesthesiologist, neonatologist) are required, to prevent perinatal complications.

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THE NEEDS OF A PATIENT WITH COVID-19 DISEASE

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Dyspnoea is a very stressful symptom for the patient. The main goal of nursing care is to reduce the impact of dyspnoea on a person's life and to implement activities that lead to its alleviation. For effective nursing care, the nurse must work with other members of the multidisciplinary team.
The main aim of the paper was to analyze the needs of a patient with COVID-19 disease with extensive dyspnoea.

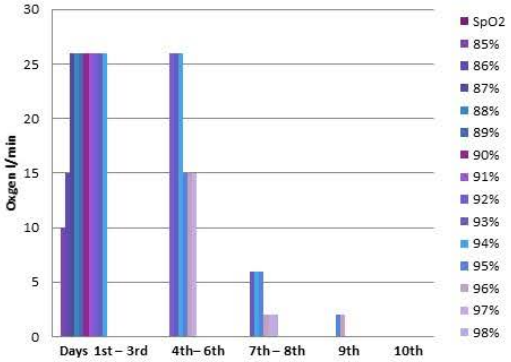
Case description

A 29-year-old patient hospitalized in the Covid ward with a diagnosis of extensive bilateral COVID-19 bronchopneumonia, hyposaturation (85%) and hypoxemic respiratory insufficiency. Patient tested positive for the COVID-19 disease on November 26, 2021. The clinical picture was dominated by febrility up to 39 ° C, dry irritating cough, back and chest pain, loss of smell and taste. She felt weak. The patient was treated by a general practitioner on an outpatient care. After a temporary improvement, the health condition deteriorated. On December 8, 2021, she was transported to the emergency room in the morning.
This is a patient with severe exogenous obesity (BMI 46.1), hypothyroidism, and no other more serious pre-disease. She did not receive the vaccination against COVID-19. Values of vital functions at blood pressure: 95/72 mmHg, P: 95 / min., B: 21 / min., SpO_2 : 90% - oxygen therapy during transport 10 l / min.
Prescription of drugs were administered. Ordinated calm on the bed and pronation position, laboratory monitoring, lower limb bandage, fluid balance, respiratory rehabilitation with a physiotherapist. Regularly monitored ECG and vital signs, the patient's general condition or the occurrence of complications. SpO_2 : 84% - 90% - 93%, oxygen applied to the face mask with a flow rate of 15 l / min - 26 l / min. (keep SpO_2 above 94%) (Graf 1 Oxygenoterapy). We measured the oxygen saturation in the blood with a pulse oximeter.
We assessed Dyspnoea on the Borg's scale of dyspnea (Tab.1). Dyspnoea already present with minimal physical exertion. Barthel's test of 56 points of moderate degree dependence. The patient has increased intrapsychic tension, survives anxiety, negatively tuned. Contact with the family through a nurse and a doctor. The care of a patient with dyspnoea was comprehensive. We provided hygienic care on the bed, regular positioning, feeding, administered drugs intravenously, care for i.v. cannula, permanent catheter. Ensured satisfaction of spiritual needs. On the 1st – 3rd day SpO_2 was 88% - 90% - 93%, oxygen applied to the face mask with a flow rate of 15 l / min - 26 l / min. On the 4th-6th days the dyspnoea was present only during active exercises during rehabilitation, she engaged in self-service activities,SpO_2: 92% - 98 %. On the 7th-8th day she realized breathing exercises, practice walking around the room. Oxygen was prescribed only in the morning with a flow rate of 6 l / min, than reduced rate of 3l/min. The 9 th day: prescribed complete abolition of oxygen therapy, she realized breathing exercises, practice of walking up the stairs, after which a shortness of breath was present, applied oxygen 2l / min, SpO_2 : 95% - 98%. On the 10th day, the patient was released to home care, without the need for oxygen therapy.

Tab. 1 Borg's scale of Dyspnea

Degree of dyspnea	Intensity of dyspnea	The days of the hospitalization
0	Absent shortness of breath	
0,5	Completely insignificant shortness of breath	The 9th – 10 th of the hospitalization
1	Very mild degree of shortness of breath	The 7th -8 thday of the hospitalization
2	Easy degree of shortness of breath	The 7th to 9th day of the hospitalization
3	Medium degree of shortness of breath	The 4th to 6th day of hospitalization
4	Masting severe shortness of breath	
5	Heavy degree of shortness of breath	The 1st to 3rd day of hospitalization
6	Transition between 5.-7. degree of shortness of breath	
7	Very severe degree of shortness of breath	
8	The transition between 7.-10. degree of dyspnea	
9		
10	Maximum degree of dyspnoea	

Graf 1 Oxygenoterapy



COVID-19 affects all age groups. Symptoms range from asymptomatic to acute respiratory distress syndrome (ARDS), acute inflammatory lung disease, or multiorgan failure. The most common symptoms include fever, sore throat and headache, cough, fatigue, myalgia. In more severe cases, the disease can progress to pneumonia, respiratory failure or death. These are mostly patients with other comorbidities. According to the authors Turčan, Dzianová, Bacmaňáková (2020), the development of dyspnoea occurs within 5 days from the onset of symptoms, the need for hospitalization within 7 days and the development of ARDS occurred on approximately day 8. Intensive care was required in 25-30% of patients. The improvement in health begins at the 2nd - 3rd week. The average length of hospital stay in cured patients was 10 days.
Firement (2020) argues that in patients with COVID-19, oxygen therapy should be started when blood oxygen saturation drops below 92%. Oxygen is administered by inhalation using a Hudson's or Venturi mask with a flow rate> 5 l / min. according to the doctor's office.
Marshall (2020) states that breathing exercises are the most appropriate techniques for alleviating dyspnoea. They aim to reduce the effort required to breathe and have a significant relaxing effect. Promoting deeper breathing leads to a normal breathing frequency and promotes shortness of breath.
Caring for patients with COVID-19 is challenging in terms of meeting basic living needs. The self-sufficiency and mental state of patients is significantly impaired.
Bajwach (2020) states that anxiety associated with shortness of breath, social isolation and fear is to some extent present in all patients who have COVID-19.
With the right care and empathic approach, we can help the patient cope with the critical period and help them return to normal life.

Typical presenting characteristics of severely ill COVID-19 patients hospitalized in an ICU at Pauls Stradins Clinical University Hospital

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Actuality

Coronavirus disease 2019 (COVID-19) infections present with various manifestations. Information on admission characteristics and outcomes of coronavirus disease 2019 (COVID-19) patients in Latvia is limited. As one of the tertiary hospitals to admit COVID-19 patients, we aimed to collect data in order to describe the typical clinical characteristics and outcomes of patients who required intensive care unit (ICU) admission and invasive mechanical ventilation (IMV). The goal of this study was to examine these clinical characteristics upon admission to hospital, as they could potentially serve as prognostic indicators, especially in high-risk groups.

Methods

A retrospective single-center observational study was conducted in an intensive care unit (ICU) in Pauls Stradins Clinical University Hospital in Riga, Latvia between 1st October 2020 and 30th April 2021. Data was collected on 51 adult patients (age ≥18 years) admitted with confirmed COVID-19 infection and receiving invasive mechanical ventilation. Demographics, comorbidities, presenting symptoms, laboratory data upon admission, as well as mortality data were collected from patient's files and analysed. Multivariate regression analysis was carried out to identify any significant indicators for early recognition of severe COVID-19 cases.

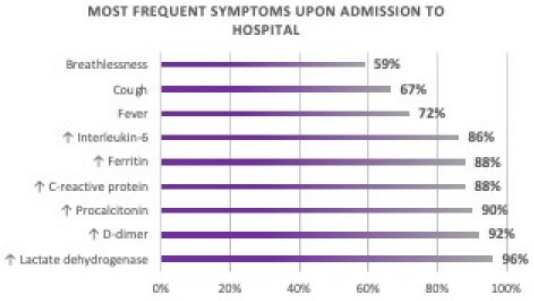
Results

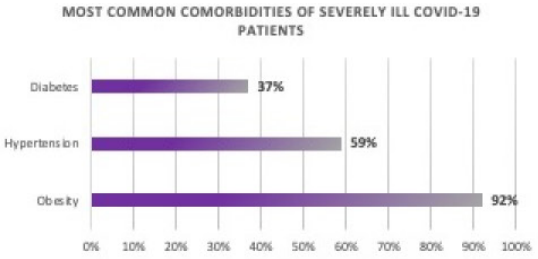
A total of 51 individuals tested positive for SARS-CoV-2 by real time reverse transcriptase polymerase reaction (RT-PCR) from October 1, 2020, to April 30, 2021, were included in the study. 40 (67%) of them were male. The median age was 64 [IQR 56-70]. The median time of onset of symptoms prior to hospitalization was 8 days [IQR 4-9]. Younger patients presented slightly earlier compared with older patients (median of 5 vs. 7 days). Time to admission was also shorter in females than males (median of 6 vs. 7 days) and in patients without any comorbidities, compared to one with at least one chronic illness (median of 6 vs. 7 days).

The most frequently reported symptoms at admission were fever (72%), cough (66.7%) and shortness of breath (59.4%). Upon admission, 47.1% of patients had a respiratory rate greater than 24 breaths/minute, and 74.5% received supplemental oxygen. Forty-three (84%) patients met the criteria for ARDS upon admission to hospital, with the median Pao_2/Fio_2 of 94 [IQR 60-207] and a median SOFA score of 3. The aforementioned symptoms were common but not conclusive of the outcome of infection.

Laboratory tests commonly showed elevated lactate dehydrogenase (96.1%), D-dimer (92.2%), procalcitonin (90.2%), C-reactive protein (88.2%), ferritin (88.2%) and interleukin-6 (86.3%) levels.

Six (11.8%) patients had a bacterial co-infection at the time of admission. The most common co-morbidities were obesity (92%), hypertension (58.8%) and diabetes (37%). The overall mortality for those requiring mechanical ventilation was 82.4%. However, further analysis revealed that no specific presenting symptoms, laboratory tests, age, comorbidities, or time between first symptoms and admission to hospital were significantly associated with mortality.





Conclusions

This study presents baseline clinical characteristics upon admission to a tertiary care hospital for severely ill COVID-19 infected patients, later requiring ICU admission and invasive mechanical ventilation. During a continuous COVID-19 pandemic, the knowledge of such clinical predictors can help to anticipate the progress of the disease and triage patients more effectively. Identification of indicators for COVID-19 severity and mortality could also help in the development of preventive strategies to encourage people who belong to high-risk groups to take more cautious preventive measures, or, if infected, look for medical interventions more early in the disease course, potentially improving the outcome. This way, more effective management strategies can be developed. It could also help to reduce the overall burden of disease on health care infrastructure.

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IEVADS

VAI COVID-19 IR PALĪDZĒJIS DIAGNOSTICĒT HIV INFEKCIJU?

HAS COVID-19 HELPED TO DIAGNOSE HIV INFECTION?

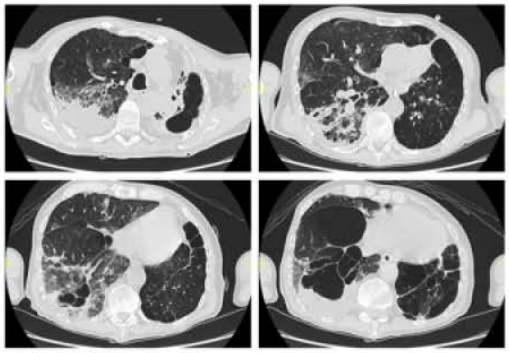
Description of a clinical case in which a man had severe Covid 19 infection with serious complications such as bilateral pneumonia, myocarditis, pulmonary embolism and stroke. During the illness HIV infection was primarily detected which allowed to start treatment and prevented the addition of opportunistic infections.

GADĪJUMA APRAKSTS

- Vīrietis 64 gadi, pensionārs, dzīvo Rīgā.
- Anamnēzē HOPS. Bulloza emfizēma. 1995. gadā pārslimota TB. Ikdienā lieto *inh. indacaterolum/ glycopyrronium* (Ultibro).
- Nav vakcinēts pret Covid-19.
- 2021. gada novembrī 3 ned. ilgs klepus, temperatūra, parādās apziņas traucējumi, lēnāka runa, izsaukta NMP. Tās etapā SpO_2=83%, tahipnoe.
- 25.11. Ir atrasta SARS CoV-2 RNS (E, RdRP/S, N gēni)
- Stacionārā O_2 atbalsts, uzsāka th ar *S. Remdesivir.*
- 26.11. DT plaušām: Labās puses pneimonija. Kreisā pusē posttbc pārmaiņas. Emfizēmas bullas.
- 26.11. notiek izteikta pasliktināšanās - desaturācija spiedošas sāpes krūtīs. Atkārtotas asinanalīzes:

	Leik.	CRO	LDH	Trop.	PCT	Ferit.	D-dim
24.11.	4,4	69	393	9,17	0,18	1117	2,45
26.11.	12,7	225		622	0,18	814	8,11

- 26.11. veic koronorogrāfiju, kur ateroskleroze. LAD proksimālas daļas bifurkācijas zonā 5-60% stenoze. Tālākai terapijai stacionēts ITP, uzsāk O_2 atbalstu ar HFNC.
- 20 dienas ITP, kur sākotēji stāvoklis kritiski smags ir attīstījies miokardīts, PATE, ARDS un kombinētas ģenēzes šoks. MRI galvai - išēmisks CI ACP dx.
- EhoEKG - EF KK ~30-35%, KK izsviedes tilpums tikai 23 ml. Dif dg. Miokardīts? TakoTsubo sindroms?
- 27.11. pirmreizēji abstiprināta HIV 1 infekcija. CD 4 šūnu skaits 128.
- Izmeklēts uz biežākajām oportūnisku infekcijām: *Aspergilla Ag, Cryptrococcus Ag, Pneumocystis jirovecii* DNS, *Treponema pallidum* IgM un IgG, MTB DNS, likvora un asins uzsējumi.
- 28.11. SARS CoV-2 IgM - pozitīvs (3,04 S/C) un IgG-pozitīvs (2,63 S/C).
- 03.01. kontroles CT plaušām, kur pozitīva dinamika. Pacientam nepieciešams respirators atbalsts ar nazālām kanilēm 3-4 l/min.
- 11.01.22. saņemti 2 atkāroti negatīvi SARS CoV-2 RNS testi, tiek pārvests uz Latvijas Infektoloģijas centru.
- Epidanamnēze: ir vairāki gadījuma seksuāli kontakti.
- Uzsākta antiretrovirāla terapija (ART) ar *Dolutegravir/ Lamivudine.*
- 17.02. Kontroles nolūkos veikta NFI ir atrasta SARS CoV-2 RNS (Orf1a gēns)
- 04.01. HIV vīrusa RNS slodze 4.01 E4 kop/ml un 28.02. 129 kop/ml.
- 24.02. Ir stabils CD4 šūnu pieaugums (CD4 = 601), nav indikācijas turpināt oportunisko slimību profilaktisko terapiju, medikamentu blaknes neatzīmē. Turpina rehabilitāciju Nacionālālajā rehabilitācijas centrā.
- Izrakstoties nav skābekļa atkarīgs.



09.12.2021. CT plaušām

KLĪNISKĀ DIAGNOZE

Atkārotas Covid-19 infekcijas (klīniski, SARS CoV-2 RNS pozitīvs 25.11.2021 un 17.02.2022), kritiski smagu gaitu.
Abpusēja pneimonija.
Akūta elpošanas nepietiekamība.
HFNC (25.11.-05.12.2021).
Akūts miokardīts.
PATE kreisā galvenajā plaušu artērijā.
ARDS. Kombinētas ģenēzes šoks (26.11.2021)
KSS. Akūta KG (26.11.2021). LAD stenoze 50-60%.
Ātriju undulācijas paroksizms 26.11.2021.
Akūts CI ACP dx (13.12.21)
Pirmreizēji diagnosticēta HIV 1 infekcija, A3 stadija.
HOPS B pakāpe.
Bulloza emfizēma.
St. pēc pārslimotas TB 1995. gadā.
Mērana pulmonāla hipertensija.
Labās puses hidrotoraks.
Hipoproteīnemija un hipoalbuminēmija.
Jauktas ģenēzes encefalopātija.

SECINĀJUMI

Pateizējie pētījumu dati neuzrāda saistību starp Covid-19 infekciju un paaugstinātu nāves vai smagas slimības attīstības risku pacientiem ar HIV, lai gan hospitalizācijas risks ir lielāks.[1]

Ir lietderīga HIV testēša visiem pacientiem ar Covid-19.

Terapija ar ART ir jāuzsāk pēc iespējas ātrāk, lai gan pilnībā atbrīvoties no HIV vīrusa nav iespējams, bet var ilgstoši aizkavēt slimības attīstību un progesiju.

SPKC dati liecina, ka Latvijā ik gadu sarūk jauntklāto HIV infekciju skaits, taču Covid-19 pandēmijas ēnā šis skaitlis neizskatās vien pēc pozitīvas tendences, bet arī pēc slimības gadījumiem, kas nenonāk veselības aprūpes sistēmā. Tabulā dati no SPKC.[2]

Gads	2016	2017	2018	2019	2020	2021
Jaunatklāti HIV	365	393	326	295	257	212

1. Danwang, C., Noubiap, J.J., Robert, A. *et al.* Outcomes of patients with HIV and COVID-19 co-infection: a systematic review and meta-analysis. *AIDS Res Ther* **19**, 3 (2022).
2. https://e.infogram.com/15d5b298-14bb-4905-bf54-2e8f909ef3ea?src=embed

Vakcinācija pret Covid-19. Klīnisko gadījumu analīze

Jeļena Kulakova, RSU rezidents-eksperts

IEVADS

Covid-19 infekcija vēl turpinās un, joprojām ir nepieciešams izsargāties no infekcijas. Vislabākā aizsardzības metode pret Covid-19 ir vakcinācija. Šobrīd Eiropas Savienībā ir reģistrētas vakcīnas pret Covid-19: Pfizer-BioNTech ražotā vakcīna Comirnaty, Moderna ražotā vakcīna Spikevax, AstraZeneca un Oksfordas universitātes izstrādātā vakcīna "Vaxzevria", Janssen izstrādātā vakcīna un Novavax. Taču pasaulē aizvien norit darbs pie aptuveni 200 vakcīnām. Eiropas Zāļu aģentūra (EZA) izvērtē vakcīnas kvalitāti, drošumu un efektivitāti. Šis process garantē, ka Eiropas Savienības valstis, tostarp Latvija, vienlaicīgi saņem kvalitatīvas, drošas un efektīvas vakcīnas pret Covid-19. Zāļu valsts aģentūra (ZVA) informē, ka tāpat kā pēc visu vakcīnu un jebkuru zāļu lietošanas, arī pēc Covid-19 vakcīnu saņemšanas, var tikt novērotas blakusparādības, bet ne visi cilvēki ar tām saskaras. Tomēr ir ļoti būtiski, ka blakusparādību, ko rada vakcīna, nav vairāk un tās nav smagākas kā Covid-19 simptomi un pati slimība, no kuras šīs vakcīnas pasargā.

Man bija unikāla iespēja visā epidēmijas laikā novērot vakcinācijas procesu, Covid -19 infekcijas gaitu un ar to saistītos veselības traucējumus.

INTRODUCTION

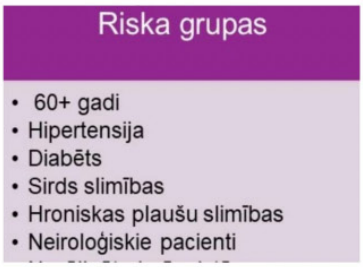
Covid-19 infection is still ongoing and it is still necessary to protect yourself from infection.
The best method of protection against Covid-19 is vaccination.

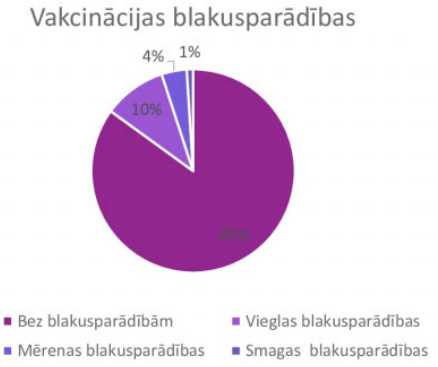
MĒRĶIS

Pierādīt, ka vakcinācija pret Covid-19 ir vislabākā un visdrošākā metode kā sevi pasargāt no Covid-19 infekcijas, neskatoties uz iespējamām blakusparādībām.

METODES

1. Anketēšana - datu ievākšana un rezultātu analīze
2. Literatūras avotu izpēte un analīze
3. Konstatējošais eksperiments





Gadījumu apraksts

Klīniskais gadījums Nr. 1.

Siev. 86 g.v. Vakcinēta ar Vaxzevria pirmo devu 2021. gada martā. Pēc vakcinācijas novērota vidēji smaga alerģiska reakcija, kas izpaužas ar izsitumiem pa visu ķermeni un mokošu niezi. Pēc ārstēšanas, alerģijas parādības izzūd 3 dienu laikā. Pirms otrās vakcīnas devas, paciente lieto antihistomīna līdzekļus un alerģiska reakcija pēc otrās potes netika novērota. Funkc. traucējumi vērtējumi kā viegli.

Klīniskais gadījums Nr. 2.

Siev. 62 g.v. Pilna vakcinācija tika veikta ar Moderna vakcīnu 2021. gada novembrī. Pēc trim nedēļām, paciente stacionēta ar dziļo vēnu trombozes ainu un kritisku kreisās kājas išēmiju, pēc kuras veikta kājas amputācija virs ceļa locītavas. Funkc. traucējumi tiek vērtēti kā smagi, bet nav pierādīts, ka tromboze ir vakcinācijas sekas.

Klīniskais gadījums Nr. 3.

Siev., 79 g.v. Pilna vakcinācija ar Phizer vakcīnu š.g. februārī. Pēc divām nedēļām, paciente tiek stacionēta ar miokarda infarktu. Pēc ārstēšanas tiek izrakstīta no stacionāra apmierinošā stāvoklī. Šobrīd paciente atrodas ģimenes ārsta uzraudzībā. Funkc. traucējumi vērtējami kā mēreni.

Secinājumi

Skatoties uz tabulu, mēs secinām, ka vakcinācija bez blakusparādībām, vidēji ir 85% pacientu. Vakcinācija ar vieglām blakusparādībām, vidēji ir 10% pacientu. Vakcinācija ar mērenām blakusparādībām, vidēji ir 4% pacientu, bet smagas vakcinācijas blakusparādībās, vidēji ir 1% pacientu. Kopumā vakcinācijas process norīt bez komplikācijām, bet, protams, tiek konstatēti arī smagi vakcinācijas komplikācijas gadījumi.

Neskatoties uz iespējamām komplikācijām, vakcinācija ir un būs vislabākā metodē, lai pasargātu pacientus no smagas slimības norises un nāves.

Līdz 2022. gada 31. martam ZVA izvērtējusi 30 Covid-19 vakcīnu blakusparādību ziņojumus, kuros sniegta informācija par letāliem gadījumiem, kas ir notikuši vairāku dienu vai vairāku mēnešu laikā pēc vakcinācijas. No tiem 29 gadījumos nav apstiprināta saistība ar vakcināciju pret Covid-19, viens letāls gadījums ir ticami saistāms ar vakcīnas Vaxzevria (iepriekš zināma kā Covid-19 vakcīna AstraZeneca) lietošanu. Izvērtējot ziņoto gadījumu, ZVA secinājusi, ka patologanatomiskā ekspertīzē konstatēto pārmaiņu cēloniskais sakars ar vakcīnas Vaxzevria lietošanu ir vērtējams kā ticams, un šai gadījumā ir konstatēta iespējama vakcīnas Vaxzevria ļoti reti sastopama blakusparādība - trombozes un trombocitopēnijas sindroms (TTS).

Ikviens ziņojums par Covid-19 vakcīnas blakusparādībām tiek rūpīgi izvērtēts. Ziņojumus izvērtē gan ZVA (atsevišķos, būtiskos gadījumos konsultējoties arī ar Imunizācijas valsts padomi, Veselības Inspekciju un dažādiem atbilstošās medicīnas jomas klīniskiem speciālistiem), gan Eiropas Zāļu aģentūru, kā arī ar Eiropas Zāļu aģentūras speciālistiem un vakcīnu reģistrācijas institūciju.

Saskaņā ar ES izstrādāto, nepārtrauktu Covid-19 vakcīnas drošuma uzraudzības plānu, šo vakcīnu uzraudzība tiek veikta ievērojami intensīvāk nekā citām zālēm, lai nodrošinātu lielāku drošumu un informācijas ātru identificēšanu, apkopošanu un analīzi. Šie pasākumi arī ļauj normatīvā regulējuma iestādēm ātri izvērtēt jaunākos datus no dažādiem informācijas avotiem un nepieciešamības gadījumā veikt visas nepieciešamās, reglamentējošās darbības, sabiedrības veselības aizsardzībai.

Vestibular neuritis as a possible COVID-19 complication during III trimester pregnancy: a case report.

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[5] LOR klīnika, Latvia
[6] GK neiroklīnika, Latvia

Discussion points

- Vestibular neuritis is usually caused by viral infection, that is why we believe that in this case vestibular neuritis is a COVID-19 complication. There are very few cases like this described in the literature.
- Disease-specific treatment for vestibular neuritis in pregnant women is controversial, there are only few case reports.

Introduction

Vestibular neuritis is a disorder that affects the nerve of the inner ear called the vestibulocochlear nerve, it is most likely caused by viral infection (e.g. the reactivation of latent HSV infection). In our case patient is experiencing typical symptoms of vestibular neuritis as vertigo and balance difficulties 5 days after tested positive for COVID-19. Vestibular neuritis is not that often seen in pregnant women and treatment can be challenging due to pregnancy as there are no guidelines for treatment during pregnancy and first-line medication (glucocorticoids) for non pregnant is not recommended during pregnancy.
In this case report we report a patient in her 3rd pregnancy trimester with vestibular neuritis as a possible COVID-19 complication.

Case description

We present a 38 year old female patient in the 38th week of her pregnancy, who complained about persistent vertigo accompanied by vision and gait disturbances and one vomiting episode 5 days after testing positive for COVID-19. Patient had a mild form of COVID-19 disease. She had been vaccinated against COVID-19 with two doses of Pfizer, last dose was received on 11.06.2021.

Patient was referred to an otorhinolaryngologist and on objective examination had difficulties performing the Romberg test. While testing oculomotor function with a horizontal and vertical tracking test we observed unidirectional nystagmus. The head impulse test was abnormal and the test of skew was negative. A video head impulse test was performed (Figure A) which shows that eye movements do not compensate for left impulse head movements. The established diagnosis was left side vestibular neuritis.

Medical treatment was not administered. Instead Cawthorne-Cooksey exercises were recommended.

Another condition that our patient developed during COVID-19 isolation was preeclampsia (increased blood pressure and protein creatinine ratio) so labour was induced on 39th week of pregnancy on 13th day after testing positive for COVID-19. Vertigo was still present when the patient was admitted to the hospital, but patient noticed that symptoms disappeared after stronger uterine contractions started. 10 days after giving birth the patient returned to the otorhinolaryngologist's office, and also objectively her balance had improved and she no longer had vertigo, a video head impulse test was performed once again (Figure B and Figure C) which also showed some improvement. Otorhinolaryngologist recommended continuing Cawthorne-Cooksey exercises.

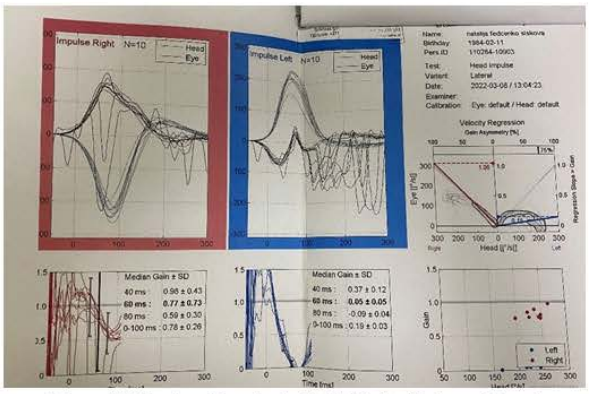


Figure A. Video head impulse test (vHIT) in the first appointment.

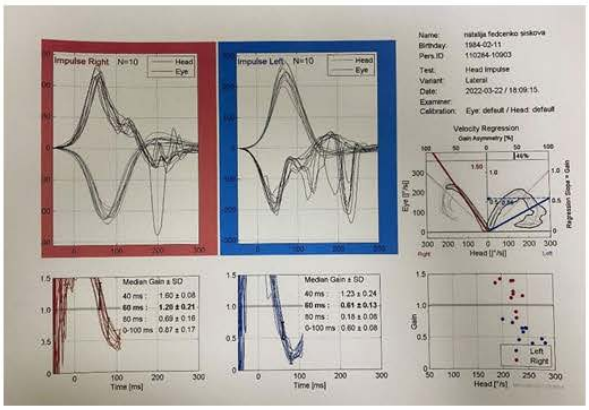


Figure B. Video head impulse test (vHIT) in the second appointment.

Figure C. Performing a video head impulse test (vHIT).

Conclusions

This case report describes vestibular neuritis as possible complication after COVID-19 infection.
During the 3rd trimester of pregnancy it is possible to successfully manage vestibular neuritis without medical treatment if the patient is adherent. Interestingly, obvious improvement occurred when contractions started giving an idea that there could be possible association between uterine contractions and vestibular neuritis symptomatic improvement. The exact pathophysiology remains unclear and need further studies to clarify it.

ANATOMY TEACHING IN THE TIME OF COVID-19: PLASTIC PHYSICAL MODELS VS. DIGITAL MODELS?

Dzintra Kažoka, Māra Pilmane

Department of Morphology,
Institute of Anatomy and Anthropology,
Rīga Stradiņš University, Latvia

Actuality / The Goal

Coronavirus disease-2019 (Covid-19) **disrupted** all classical **teaching formats in** medical education, including **Human Anatomy** course.

The availability of **plastic physical models** and the implementation of the **digital models for tutors required** a strong foundational **understanding in their use and possibilities**, including visualization skills.

Due to the COVID-19 pandemic period, **teaching methodologies have been revolutionized** with more reliance on innovative models to further consolidate and enhance the learning experience but at the same time **several advantages** were **detected for anatomical models**.

The **present study compared plastic anatomical models versus digital models** to investigate their impact on practical experience **in visualization of anatomy teaching during the Covid-19**.

Mainly, **it explored which** of them **were perceived as more useful for the teaching of Human Anatomy** at the Department of Morphology.

Methods

This **study is a descriptive and reflective part** on **different adaptations** that facilitated and enabled the **teaching of Human Anatomy** during the COVID-19.

It considers the **roles of plastic physical models and digital models** from educational innovations and how these models used to achieve teaching objectives with optimal outcomes at the Department of Morphology.

The data compiled for this study were acquired for the academic **periods of April 2020 – February 2022**.

Results

The use of **different anatomical plastic physical models, software** and **the app,** including **"Complete Anatomy"** by "3D4 from Elsevier" and **"Anatomy Next"**, were **deployed to facilitate effective teaching of Human Anatomy** in basic medical studies.

Plastic physical anatomical models were:

- the **most commonly used** materials **by tutors** in process of anatomical teaching;
- usually **formed in several removable pieces**, making them even more useful as teaching aids;
- **with content of a large number of details** which allowed them to be moved precisely into an infinite number of positions;
- **with** also **visible distributions** of the blood vessels, lymphatic vessels and nerves.

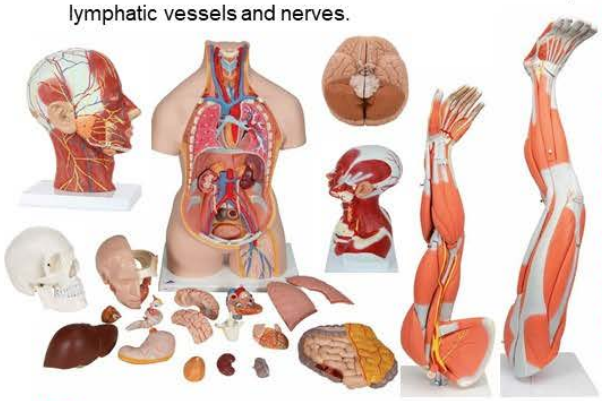
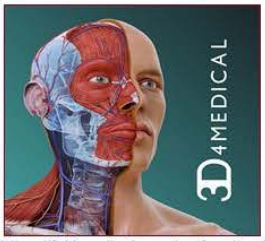


Fig. 1. Several plastic physical models that were used in teaching.

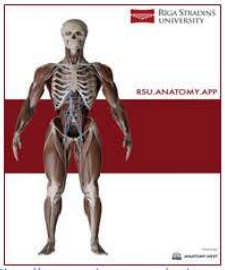
Plastic models **showed the internal organs of different regions and systems**, and offered a **useful tool** for **teaching gross anatomy** due to their easy accessibility and educational effectiveness, hence contributing to a better anatomical teaching experience **by familiarising with surface landmarks**.

One way of achieving effective teaching was the use of the anatomical models with **high spatial visualization**.

Part of the physical anatomical models **had several limitations** in their use, **because** of their **sizes** or **decreased possibility to show some deep structures and/or levels** of them.



https://3d4medical.com/professional



https://rsu.anatomy.app/category/1

Fig. 2. Digital models software and the app that were used in teaching.

Software "Complete Anatomy" by "3D4 from Elsevier" and the app "Anatomy Next" were:

- used for **the teaching of systemic** and **regional Human Anatomy** and **different functions**;
- helpful for tutors in providing **an ideal view to assist in visualization of the some complicated structures** and their **relationships**.

Tutors rotated and manipulated **structures from various views** to identify anatomical structures for students, allowing to see **details from any point of view** and **very fast** in an easier and more effective way.

The impact on the **using digital models** was likely **dependent on topic, presentation** and **tutors teaching styles and skills**.

The availability of the **digital models reduced the need for physical anatomical models just in part** of the practical classes.

Conclusions

Anatomical **plastic physical models were one of the general tools** to develop an accurate understanding of Human Anatomy, and **this type** of the teaching **was** extremely **useful for teaching anatomy** and it was **accessible to all tutors during pandemic period**.

Overall, plastic models in modern medical education seemed to be **still of interest for teaching on anatomical structures** and **their locations, relationships**, being **integrated with other** and **digital teaching tools** to improve knowledge and skills **in Human Anatomy**.

Digital models were **modern educational tools** to integrate teaching anatomy **in conjunction with traditional methods and plastic models**, and they **helped to maximize the identification** and **location of the structures**.

During Covid-19 all of these **models were important and useful for teaching normal Anatomy**, enabling tutors to improve visualization of structures, especially those of the skeletal, muscular, circulatory and nervous systems.

Covid – 19 izplatības kriminoloģiskie aspekti

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Kriminoloģiskā pieeja Covid – 19 kontekstā ir saistīta ar noziedzības un ar to saistīto sociāli nelabvēlīgo parādību stāvokli un tendencēm un to ietekmi uz sociāli ekonomiskajiem, politiskajiem un tiesiskajiem procesiem.

Referāta mērķis ir, balstoties uz atsevišķu pētījumu rezultātiem, atsegt ar kriminalitāti saistītās likumsakarības Covid – 19 apstākļos. Referāts ir balstīts empīriska rakstura **materiālu** izmantošanu; kriminālās statistikas datu un pētījumu rezultātu analīzi. Pētījuma gaitā ir izmantotas deskriptīvā un salīdzinošās analīzes **metodes.**

Pētījuma rezultāti.

Analizējot Covid – 19 ietekmi uz noziedzību, detalizētāk pieskarsimies diviem aspektiem: pirmkārt, pandēmijas ietekmei uz kopējo noziedzības stāvokli un tendencēm; otrkārt, pandēmijas ietekmi uz atsevišķiem noziegumu veidiem.

2019. gadā Latvijā tika reģistrēti 36880 noziedzīgie nodarījumi. 2020. un 2021. gadā bija vērojama reģistrēto nodarījumu samazināšanās (2020. gadā par 2% un 2021. gadā par 16,8% attiecībā pret 2019. gadā reģistrēto noziegumu skaitu). Absolūtajos rādītājos reģistrēto nodarījumu lejupslīde sastādīja 6090 noziegumus. Analoģiskas tendences bija fiksētas arī citos analītiskajos materiālos. E.E. Nivette vadītā pētnieciskā kolektīva pētījuma kurš tika veikts 2020. gadā 23 valstīs, 27 pilsētās aptverot aptuveni 126, 25 miljonus iedzīvotājus, rezultāti liecināja par to, ka pētītajos reģionos noziedzība samazinājās par 37%. Minētais bija saistīts ar to, ka tika ierobežota cilvēku uzturēšanās sabiedriskā vietās. Samazinot nosacījumus uzturēties mājās, reģistrētā noziedzība pieauga. Analizējot pandēmijas ietekmi uz atsevišķiem noziedzīgo nodarījumu veidiem ir iespējams konstatēt, ka Covid – 19 ietekmē Latvijā pieauga kiberkriminalitāte. Tā, 2021. gadā, salīdzinot ar 2020. gadu noziedzīgie nodarījumi Interneta vidē pieauga vairāk kā četras reizes (no 202 nodarījumiem 2020. gadā līdz 875 nodarījumiem 2021. gadā). Tai skaitā pieauga patvaļīga Interneta vietnēm, datu un sistēmu darbības traucēšana. Covid – 19 izraisītās ekonomiskās krīzes ietekmē, pieauga nelegālā preču, it īpaši akcīzes preču (alkohola, tabakas izstrādājumu) aprite. Parādījās jauns kriminālo izpausmju fenomens – pretlikumīga fiktīvu Covid – 19 sertifikātu izsniegšana un iegūšana Pēc Valsts policijas datiem vairāki simti Latvijas iedzīvotāju nelikumīgi ir ieguvuši Covid – 19 vakcinācijas sertifikātu. Ir konstatētas vairākas organizētās grupas. Kuras specializējās minēto kriminālo aktivitāšu jomā. Vidējā nelikumīgi iegūtā sertifikāta cenā bija no 200 līdz 400 eiro. Arī E.E. Nivette vadītā pētnieciskā kolektīva pētījuma rezultāti liecina par to, ka Covid – 19 apstākļos samazinājās noziedzīgie nodarījumi, kuri bija saistīti ar īpašumu. Slepkavību skaits palika gandrīz nemainīgs.

Ar ko varētu būt saistīta reģistrētās noziedzības samazināšanās? Pirmkārt, cilvēku uzvedības modeļa izmaiņas (biežāka uzturēšanās mājās; ierobežota sabiedrisko objektu apmeklēšana); otrkārt, kriminālī tendēto personu aktivitāšu pārvietošanās uz digitālo vidi; treškārt, latentās noziedzības palielināšanās. Kāda tendences varētu būt noziedzības tendences samazinoties Covid – 19 izplatībai? Cilvēku pārvietošanās ierobežojumu atcelšana, tradicionālo uzvedības modeļu atjaunošanās, var sekmēt kriminālo aktivitāšu palielināšanos. Var pieaugt kā savtīgā, tā arī vardarbīgā noziedzība, saglabājoties iepriekšējam kiberkriminalitātes trendam.

Secinājumi. Covid – 19 pandēmija nosacīti bija, iespējams arī paliek, kā dabisks eksperiments, kurš deva iespējas analizēt starptautisko un nacionālo politiku, individuālos uzvedības modeļus netradicionālos epidemioloģiskos apstākļos.

Kopējā reģistrētā noziedzība Covid – 19 apstākļos samazinās, kas ir saistīta ar cilvēku uzturēšanās sabiedriskās vietās un pārvietošanās ierobežojumiem. Cilvēku funkcionālā vide (nodarbinātība, komunikācija, hobiju un interešu īstenošana) transformējās uz digitālo sfēru, sekmēja kriminālo aktivitāšu ekspansiju kibertelpā. Covid – 19 ietekme palielināja kriminālo aktivitāšu transnacionālo raksturu, paaugstināja noziedzīgo struktūru tehnoloģiskās iespējas.

Annotation

The aim of this report is to reveal the regularities related to crime under the conditions of the COVID-19 pandemic, based on the results of separate studies. The results of the above-mentioned studies have shown that the total registered crime rate during the COVID-19 pandemic has been decreasing, which is related to the restrictions on people's staying in public places and their movement. The human functional environment has transformed into the digital sphere, which facilitated the expansion of criminal activity in cyberspace.

Covid 2019 and the threat of corruption in Public Procurement

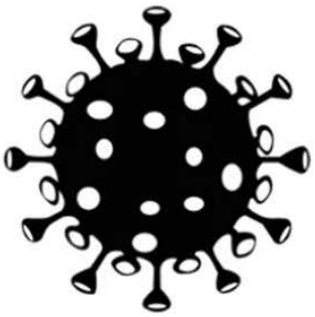
Anatolijs Kriviņš, Daugavpils University

The Covid 2019 pandemic has highlighted the problem of corruption in public procurement. Guidance from the European Commission on using the public procurement framework in the emergency situation related to the COVID-19 crisis focusses especially on procurements in cases of extreme urgency, which enable public buyers to buy within a matter of days, even hours, if necessary. Precisely for a situation such as the COVID-19 crisis which presents an extreme and unforeseeable urgency, the EU directives do not contain procedural constraints. However, even in such circumstances, attention must be paid to anti-corruption controls.

Case description

No deviations from the provisions specified in the draft contract or other procurement documents are permitted at the stage of conclusion of the contract. Like in the case with verification of notification of the results of public procurement, the procurement contract shall be thoroughly examined by an official of commissioning party who was not involved in performing of the procurement before actual conclusion of the contract. This method would diminish risk, that text of the contract as a result of corrupt actions would differ from the draft contract, which was initially included in documents of public procurement.

Particular attention should be paid to cases when the selected applicant refuses to conclude a procurement contract and next applicant is put forward for concluding of the contract. All such instances should be recorded and it should be verified whether refusal from entering into contract has appeared as a result of corrupt agreement of several applicants, corrupt agreement of applicant and the commissioning party or neither. Therefore an obligatory verification should be performed in order to find out whether choice of the next applicant would not harm financial interests of the commissioning party and an approval of an independent higher authority should be received.



After concluding of the procurement contract execution of all conditions of the contract should be controlled -whether procurement contract is implemented in due time period and in good quality. At this stage there exists a risk that the contractor would bribe representatives of the commissioning party in order to gain undeserved privileges. Monitoring of the contract execution cannot be delegated to a person who has performed the procurement. Implementation of all conditions of the contract, such as observing deadline of contract execution, supplying of services and goods of full value shall be controlled while monitoring of the contract execution. All deviations from the contract shall be substantiated and recorded.

Particular attention should be paid to any alterations or potential alterations to the procurement contract, because alterations provide wide opportunities for corruption. There exist a risk that during the period of contract implementation the commissioning party would change essential requirements in the notice regarding the contract (for example, the subject matter, contract price) or alter other conditions of the contract that were announced to suppliers before submission of the tenders (performance term, amount of sanctions, payment terms etc.). Approval of any 'equivalents' that do not conform to requirements of the public procurement specification, thus actually changing the subject matter is inadmissible during execution of the contract. From the perspective of fight against corruption the commissioning party at the stage of implementation of the contract has also no right to refuse from imposing contractual penalty for failure to fulfil contractual liabilities, if the conditions for imposing sanctions have appeared.

Access to information shall enable the applicants who have not won and the society to ascertain that the winning applicant executes his public procurement tender. Information concerning executive process of the procurement contract and imposed contractual penalty or substantiation for not imposing of penalty shall also be published on the internet.

COVID-19 Impact on Patient Experience in Latvia: Limitations and Opportunities In Socio-Anthropological Perspective

Mārtiņš Daugulis, RSU Political Science Department, Latvia
Ilze Mileiko, Patient Experience COE, Latvia
Elīna Vrobļevska, RSU Political Science Department, Latvia

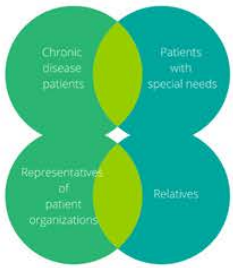
Actuality / The Goal

The COVID-19 pandemic has served as a catalyst for the challenges and also for their resilience in the healthcare system. The pressures of a pandemic affect all parts of the healthcare ecosystem. The patient's experience in such circumstances becomes a resource to identify limitations as well as an improvement opportunities. The socio-anthropological perspective offers an analysis of patients' experiences based on individual perceptual phenomena - the understanding of time in the treatment process. The speed of a visit as a systemic benefit differs from the understanding of the doctor's and patient's needs. To unveil how COVID-19 puts pressure on the patient's experience and the perspective of time (access speed to specialists, time-in-communication with therapist, sense of time in healing from illness and disease) is the goal of particular research.

RESEARCH PARTICIPANTS& METHODS

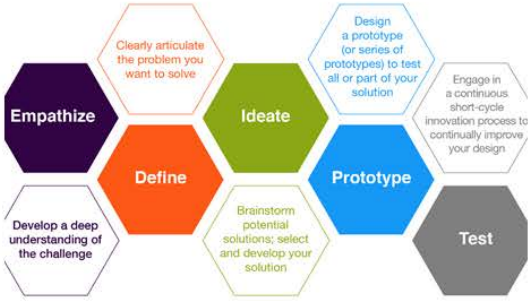
80 PARTICIPANTS
80 HOURS OF 1:1 INTERVIEWS

4 DESIGN THINKING WORKSHOPS
32 HOURS IN DESIGN THINKING WORKSHOPS (15 PARTICIPANTS PER GROUP)



Methods

A qualitative research method was used to reveal the patient's experience - focus group interviews. (Participant and Method chart in the picture at the right-top). Data from focus group interviews were obtained using a derived research method - design thinking workshops. During design thinking participants were pushed to think in direction of possible improvements in the system thus unveiling their understanding on limitations and opportunities. (Design thinking method chart, in the picture at the right). Focus group participants were segmented into the following groups: 1) Chronic disease patients (including patients with oncological diseases); 2) Representatives of patient organizations; 3) Relatives of patients; 4) Patients with special needs. A total of 80 focus group participants were interviewed, with a total number of hours - 32 (8 hours for each design thinking workshop, 15 participants per group). All groups were organized according to the criteria necessary for the objective selection of respondents throughout Latvia. Additionally 1 hour 1:1 interview with each participant was delivered (80 hours together).



Results

1. All groups of patients acknowledged a specific feeling of "lack of time" when interacting with the health care system - lack of time to establish a therapeutic relationship with a doctor. With therapeutic relationships, patients understand the conversation with the doctor, the opportunity to "become seen", not just "treated on paper."
2.Patients are willing to reduce the time of interaction with all interfaces of the healthcare system, except for the mentioned therapeutic relationship with the doctor. By significantly increasing access time to physicians, COVID-19 has been shown to reduce patient compliance in further recovery.
3. Patients empathetically experience the administrative burden on the doctor as one of the predominant problems in the healthcare system, as it is seen as a major "time thief".
4. Patients organically accept the possibilities provided by telemedicine, because the contact with the doctor is direct, as well as significantly reduces the time spent getting to the doctor.
5. Patients feel that time is of the essence in the problem of social inequality - people at social risk do not have "extra time", which significantly threatens the consistency and continuity of their treatment.
6. Patients state that COVID-19 has confirmed their belief that the length of visits required by national law is no longer appropriate to current needs, especially in the context of primary health care. As a solution, more choice is given to health care professionals, determining the time of the visit for the needs of specific patients.
7. Finally, patients perceive most painfully the time taken from treatment via the patient being tossed between institutions due to various administrative requirements. The level of patient expectations for the digitalisation of health far exceeds the capacity of institutions to meet particular level.

Conclusions

Looking at the results obtained from the patient focus groups, it is possible to come to several important conclusions.
1.COVID-19 has opened up technological possibilities for patients to reduce "wasted time" and replace it with "therapeutic time". Telemedicine is the fastest way to "free up time" in the healthcare system for patients.
2. Time spent on treatment and recovery is an essential part of reducing social exclusion. Time to see a doctor means not only a queue in registration, but also logistical problems, geographical mobility and the availability of services.
3. Understanding the logic of patients' time gain and time loss, it is possible to find a universal approach to the prevention of health care challenges - time released for treatment is a key task both in innovating in digitalization and reducing the administrative burden on medical personnel.
4. COVID-19 has exacerbated the importance of time wasted and the importance of the doctor-patient relationship.
5. Patient experience research indicates that COVID-19 has also revealed opportunities for improvement by physicians and patients effectively circumventing existing regulations to ensure the treatment process. Which leads to the conclusion that the audit of the general regulatory framework is necessary in the interests of ensuring the therapeutic relationship between doctors and patients.

Covid-19 pandēmija: Grūdiens Atvērtās zinātnes prakšu ieviešanai

Edvards Francis Kuks,
Izglītības un zinātnes ministrija

Izglītības un zinātnes ministrija

Aktualitāte / Mērķis

Zinātnisks pētījums no izstrādes līdz publikācijai parasti aizņem vismaz pusgadu, nereti – vairāk nekā gadu. Covid-19 pandēmija aktualizējusi vajadzību ātri piekļūt pētījumu datiem un atziņām gan turpmākiem pētījumiem, gan zinātnē balstītas rīcībpolitikas veidošanai.

Balstoties Eiropas Komisijas vadlīnijās "Apvārsnis 2020" ietvarprogrammas Covid-19 projektu īstenotājiem, IZM sagatavoja Atvērtās zinātnes vadlīnijas Covid-19 pētījumiem, ļaujot repozitorijos publicēt datus un rakstu pirmspublikācijas (*preprint*) versijas.

Vienlaikus IZM ir strādājusi pie Latvijas Atvērtās zinātnes stratēģijas 2021.-2027. g., kuru 2022. g. 1. martā atbalstījusi valdība. Stratēģija ietver trīs pīlārus – atvērto piekļuvi zinātniskajām publikācijām, FAIR pētniecības datus un sabiedrisko zinātni.

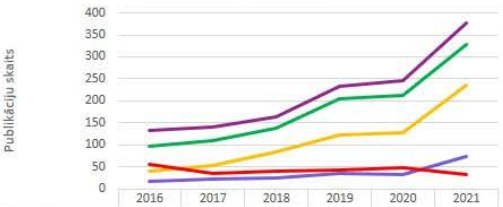
Lai gan ilgtermiņā Atvērtās zinātnes prakses piedāvā daudz ieguvumu, šo prakšu ieviešana var radīt sarežģījumus. **Kāds bijis Covid-19 pandēmijas radītais grūdiens Atvērtās zinātnes prakšu ieviešanai, un ko no tā varam mācīties?**

Metodes

Avotu analīze, tostarp Atvērtās zinātnes stratēģijas dokumentu, Atvērtās zinātnes vadlīniju C-19 pētījumiem, kontekstuālas informācijas, publicēto datu (Covid-19 Data Portal), Latvijas un starptautisko reakciju un pārspriedumu par Atvērtās zinātnes vadlīniju piemērošanu C-19 pētījumiem analīze.

Atvērtās piekļuves publikāciju dati iegūti ar SciVal rīku, atlasot publikācijas pēc laika, pētniecības jomas un piekļuves veida filtriem.

Atvērtās piekļuves publikācijas medicīnā ar Latvijas afiliāciju, 2016.-2021. g.



	2016	2017	2018	2019	2020	2021
Kopā	133	140	163	233	246	378
Zelta	40	52	84	122	128	236
Zelta hibrīda	18	21	24	34	32	74
Bronzas	56	35	40	44	49	32
Zaļā piekļuve	97	109	138	204	212	328

Avots: SciVal. Publikāciju kopskaits nesakrīt ar kategoriju summu, jo publikācija var vienlaikus tikt apzīmēta ar vairākiem atvērtās piekļuves tipiem.

Rezultāti

- C-19 pandēmija radījusi manāmu pieaugumu Atvērtās zinātnes prakšu īstenošanā
  - 2021. g pieaugums pār 2020. g. atvērtās piekļuves publikāciju skaitu medicīnā ar Latvijas afiliāciju – 53% (skat. tabulu)
  - 64 atvērtās piekļuves publikācijas par Covid-19 ar Latvijas afiliāciju
- Latvijas pētnieku atvērtie dati palīdzējuši starptautiskos pētījumos, tostarp ES SHARE programmas pētījumam par faktoriem, kas ietekmē vakcināciju 50+ populācijā
- Daļa publicēto datu – neviennozīmīgi vērtējama
- Atvērto datu publicēšana rada arī riskus, tostarp dezinformācijas riskus, nekorekti prezentējot un izmantojot datus

Secinājumi

- C-19 pandēmija veicinājusi publicēšanos atvērtajā piekļuvē, taču tendence pastāvējusi jau iepriekš
- Atvērtajā piekļuvē joprojām dominē «zaļās» atvērtās piekļuves forma
- C-19 pandēmijas radītais grūdiens Atvērtās zinātnes prakšu ieviešanai palīdz ātrāk diseminēt vērtīgus pētnieciskos datus un atziņas
- Kritiski jāizvērtē un jāuzlabo arī pētījuma gaitā radīto datu kvalitāte
- Jāturpina aktīvs darbs Atvērtās zinātnes principu un praktiskās īstenošanas skaidrošanā gan ar pētniekiem, gan plašāku sabiedrību

Epidemics Rise Among Perceived Impacts on Latvia: Successive Independent Samples in 2019, 2020, and 2021

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UNIVERSITY OF LATVIA

Actuality / The Goal

Perceived social context shapes person-environment interactions, including decision-making, planning, and adjustment processes (Nurmi, 2004; 2014). Recent studies confirmed a multilevel structure of perceived impacts on the social context at the national level (Kolesovs & Ruza, 2019; Kolesovs et al., 2021). It includes external threats, global actors (e.g., EU or US), political institutions, and personal and cooperative control over the situation. Unexpected short- and long-term impacts change individual views of the context and future expectations (Holman & Silver, 2005; Steyn et al., 2010).

The Goal

The present study assessed the relative position of the perceived impact of epidemics on Latvia in three successive independent samples of university students before (Spring 2019) and during the COVID-19 pandemics (Spring 2020 and 2021).

Methods

Three successive independent samples were involved in the study through a network of psychologists.

Spring 2019. Before the pandemics, 254 university students participated in the study (M = 24.8, SD = 6.3 years, 72.4% females).

Spring 2020. At the beginning of the COVID-19 pandemics in Latvia, 171 university students participated in the study (M = 25.6, SD = 7.4 years, 75.4% females).

During 2021, 170 university students involved in the study (M = 26.7, SD = 8.2 years, 77.1% females).

Perceived impacts on Latvia were assessed on a 7-point scale from 1 (no impact) to 7 (maximal impact) for *Cooperative Control* (personal impact, parents and relatives, friends, people of Latvia), *Political Control* (political parties and leaders, Saeima, the government of Latvia), *Global Actors* (the EU, the US, other countries), and *Epidemics* (one item regarding general threats of epidemics).

Participants answered questions online without a time limit. Data analysis was performed using the IBM SPSS program. Nonparametric tests were applied for data because of their deviance from the normal distribution.

Results

The distribution of participants' characteristics were similar in terms of gender, $\chi^2(2) = 1.23$, $p = .540$, and age, Kruskal-Wallis $\chi^2(2) = 2.32$, $p = .314$.

A nonparametric analysis was applied to assess the effects of year and impact source in students' views. The ANOVA-type statistic revealed the main effect of year, $F(1.9) = 56.20$, $p < .001$, the main effect of the impact source, $F(2.9) = 261.17$, $p < .001$, and the significant interaction of year and impact source, $F(5.6) = 70.32$, $p < .001$.

Accounting for the aim of the study, the *Post Hoc* comparisons were conducted for sources of impact on Latvia within each year of the study (Table 1). The comparison revealed the lowest topicality of epidemics in 2019, the second position in 2020, and the first position shared with *Political Control* over Latvia in 2021.

Table 1

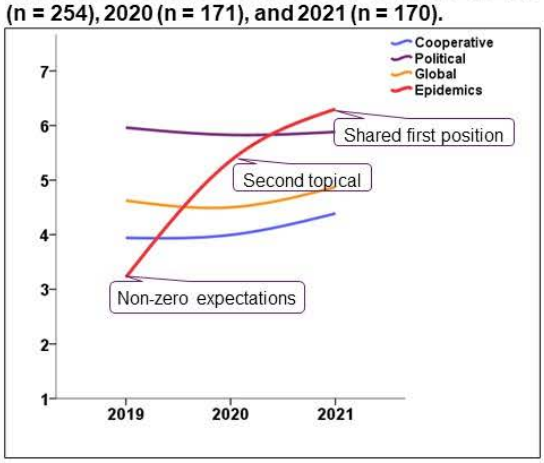
Epidemics among perceived impacts on Latvia.

Source	2019 Median [IQR]	2020 Median [IQR]	2021 Median [IQR]
Cooperative Control	4.0^{3} [2.8; 5.1]	$4.0^{3,4}$ [3.0; 5.0]	$4.5^{3,4}$ [3.3; 5.3]
Political Control	6.0^{1} [5.7; 7.0]	6.0^{1} [5.3; 7.0]	$6.0^{1,2}$ [5.3; 7.0]
Global Actors	4.7^{2} [3.9; 5.3]	$4.7^{3,4}$ [4.0; 5.3]	$5.0^{3,4}$ [4.3; 5.7]
Epidemics	**3.0^{4} [2.0; 4.0]**	**6.0^{2} [4.0; 7.0]**	**$7.0^{1,2}$ [6.0; 7.0]**
$\chi^2(3)$	362.77***	190.64***	222.23***

*** p < .001

Figure 1

Perceived impacts on Latvia in successive independent samples of university students in 2019 (n = 254), 2020 (n = 171), and 2021 (n = 170).



Conclusions

Before the COVID-19 pandemics, expectations of epidemics were not a zero level.

At the beginning of the pandemics, perceived threats increased. Simultaneously, the level of political control indicated confidence in the institutional regulation, but the sense of personal and cooperative control over the situation was relatively low.

In 2021, pandemics shared the first place with institutional regulation among perceived impacts on Latvia.

In general, the results confirm sensitivity to pandemic-associated impacts. As a regulatory resource, relatively lower personal and cooperative control can support psychological stress during this kind of change.

Evaluation of peripheral perfusion using remote photoplethysmography and automated capillary refill time technique in severe COVID-19 ARDS patients

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Actuality / The Goal

Severe COVID-19 patients with hemodynamic instability are likely to undergo aggressive fluid resuscitation and vasopressor therapy.

Accepted routine clinical tests for assess the fluid status, such as recapilarization test, lactate level are non-specific and operator- depended methods.

The Goal of present study is to characterize changes in peripheral perfusion for patients with severe COVID-19 infection using remote photoplethysmography and automated capillary refill time determination techniques.

Methods

Automatized Capillary refill time (aCRT) Capillary refill dynamic data:T90- 90% of capillary refill is over, Tst: time when capillary refill is fully over.

Photopletysmography (rPPG) using 540nm green light, was adopted for monitoring of blood volume changes in patient's palm

To predict fluid responsiveness passive leg raising test and intravenous fluid load of 10ml/kg over 60 min was performed

T1-T4 macrohemodynamic variables, cardiac output (CO), stroke volume (SV) manual and automatized CRT(T90,Tst), remote photoplethysmography (perfusion index)
T1 and T4 - lactate level

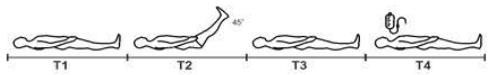

Fig1. Passive leg raising test T1- before PLRT, T2-During PLRT, T3- after PLRT, T4- after fluid expansion.

Results

Eight patients with COVID-19 ARDS infection were enrolled into single centre prospective study.

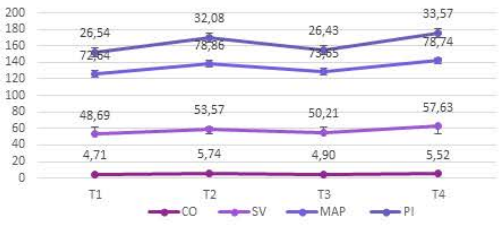

Fig 2Cardiac output (CO), stroke volume (SV),Mean arterial pressure (MAP),Perfusion index(PI) in the different time moments during passive leg raising test and after fluid expansion

Mean arterial blood pressure increased by 8% during PLR test and after fluid expansion (from 72.6 +/- 9 to 78.7 +/- 9).

CO increased by 21% during PLRT (4.7 +/- 1.0 to 5.7 +/- 1.0) while **after fluid expansion by 17%** (from 4.7 +/-1 to 5.5 +/- 1.2).

SV increased by 10% during PLRT (from 48.6 +/- 10 to 5.7 +/- 0.9) and by **18% after fluid expansion** (from 48.6 +/- 10 to 57.6 +/-12).

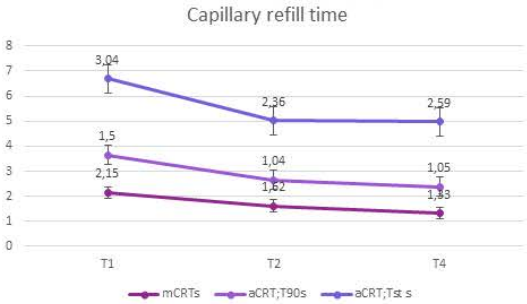

Fig 3. manual capillary refill time (mCRT,s), automated CRT (aCRT)T90,s,Tst s, during passive leg raising test (T1 and T2) and after fluid expansion (T4)

Mean mCRT decreased by 24% during PLRT (from 2.15 +/- 0.59 to 1.6 +/- 0.9) **and by 37% after fluid expansion** (from 2.15 +/- 0.59 to 1.33 +/- 0.5),

aCRT **T90 decreased by 30% during PLRT** (from 1.5 +/- 0.12 to 1.04 +/- 0.12) and after fluid expansion (from 1.5 +/- 0.12 to 1.05 +/- 0.1)
Tst decreased by 22% during PLRT (from 3.04 +/- 0.35 to 2.36 +/- 0.06) and by **14% after fluid expansion** (from 3.04 +/- 0.35 to 2.59 +/- 0.24).

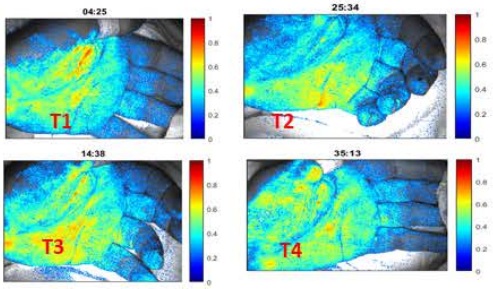

Fig.4.shows screenshots of the palm video in the different time moments

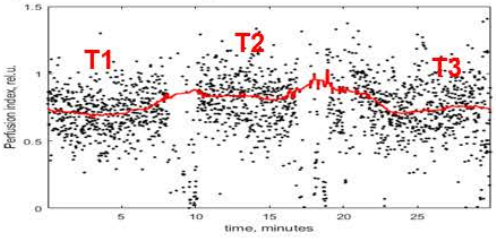

Fig 5.Perfusion index during passive leg raising test (T1-T3)

Perfusion index increased by 20% during PLRT (from 26.5 +/- 6.0 to 32.0 +/- 7.9) and by **26% after fluid expansion** (from 26.5 +/- 6.0 to 33.5 +/- 8.6).

Lactate level decreased by 15% after fluid expansion (from 2.27 +/- 1.0 to 1.9 +/- 0.75).

Conclusions

This study show that rPPG and aCRT techniques are promising tool for accurate evaluation of peripheral perfusion changes during fluid resuscitation.

Further studies are required to clarify potential clinical application of both methods.

Funkcionāla solidaritāte ģimenē izpausmes Covid-19 pandēmijā uzliesmojuma laikā, datu analīze

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Aktualitāte / Mērķis

Starppaaudžu solidaritātes ģimene un īpaši funkcionālā palīdzība starp bērnu un vecāku ir nozīmīgais faktors, kas stiprina ģimenes saites un veido pozitīvas attiecibas starp ģimenes locekļiem. Funkcionālā palīdzība vai funkcionāla solidaritāte ka jēdziens tika ieviests sociologiem Bengtson un Roberts, 1991.

Pētījuma mērķi: izpētīt funkcionālo palīdzību sniegšana Covid – 19 uzliesmojumā laikā pirmajā (2020.g.) un otrajā (2021.g.) vilnī starppaaudžu solidaritātes ģimenē kontekstā.

Metodes

Pētījumā par funkcionālo palīdzību sniegšanu un saņemšanu starp bērnu un vecāku analizēti dati, kas iegūti no Latvijas iedzīvotājiem vecumā 50+, 2020. gada un 2021. gada vasarā SHARE (The Survey of Health, Aging and Retirement in Europe) pētījumus, dati tika analizēti, ņemot vērā respondentu atbildes par palīdzību sniegšanu un saņemšanu starp bērnu un vecāku.

Rezultāti

Covid -19 uzliesmojuma laikā īpaši svarīgi saņemt un sniegt palīdzību saviem tuviniekiem, nodrošināt un iegūt pirmās nepieciešamības preces, piemēram, produktus ēdienam un medikamentus un palīdzēt personīgajā aprūpē (sk. tab. 1.)

Tab.1.

Funkcionāla palidziba sniegšana un saņemšana starp bērnu un vecāku pirmā Covid-19 vilni (2020.g.) un otrā Covid-19 vilni (2021.g.), %

	Palīdzības sniegšana (pirmā Covid-19 vilnī) (2020)		Palīdzības saņemšana (pirmā Covid-19 vilnī) (2020)		Palīdzības sniegšana (otrā Covid-19 vilnī) [2] (2021)		Palīdzības saņemšana (otrā Covid-19 vilnī) [2] (2021)	
Palīdzības veidi	Bērnu (n=1013)	Vecāku (n=996)	No bērnā (n=1013	No vecākā (n=996)	Bērnu (n=905)	Vecāku (n=329)	No bērnā (n=905)	No vecākā (n=329)
Iegūt pirmās nepieciešamības preces[1]								
Retāk	1.6	0.5	1.5	0.3	0.8	0	1.0	0
Apmēram tāpat	3.9	2.4	3.8	0.2	8.1	13.1	19.9	2.1
Biežāk	0.6	1.5	8.3	-	2.9	10.0	15.8	1.5
Personīgo aprūpi								
Retāk	0.5	0.1	-	-	0.8	-	0.1	-
Apmēram tāpat	1.5	0.8	-	-	2.9	8.5	1.1	-
Biežāk	0.2	0.8	-	-	0.4	8.2	4.4	0.6

[1]Salīdzinājumā ar to kā bija pirms koronavīrusa uzliesmojuma

[2]Salīdzinot ar pirmo pandēmijas vilni, pēdējo trīs mēnešu laikā

Rezultāti parada kā Covid-19 otra uzliesmojumā laikā (2021.g.) palīdzību ar pirmās nepieciešamības preces no bērnā saņēma 15,8% respondentu, salīdzinājumā ar Covid-19 pirmo uzliesmojumā laikā (2020.g.) – 8,3% respondentu.

Palīdzība ar personīgo aprūpe Covid-19 otrā uzliesmojumā laikā (2021.g.) savam vecākām sniedzat "biezāk" nekā Covid-19 pirmā uzliesmojumā laikā (2020.g.) – 8,2% un 0,8% attiecīgi.

Secinājumi

Funkcionāla solidaritāte ģimenē izpaužas ka palīdzības sniegšana starp bērnu un vecāku un Covid-19 uzliesmojumā laikā parāda ciešas saites starp ģimenes locekļiem, īpaši starp vecākiem un bērniem. Pētījumā iegūtie dati ļauj salīdzināt pētījumā iegūtos datus starptautiski un veicināt efektīvu pasākumu izstrādi, kas ļauj veiksmīgāk risināt ar Covid-19 uzliesmojumus saistītos jautājumus par palīdzību un aprūpe sniegšanas starp ģimenes loceklim.

GARĪGI TRAUCĒJUMI UN NOZIEDZĪBA: IEVADS KLĪNISKAJĀ KRIMINOLOĢIJĀ

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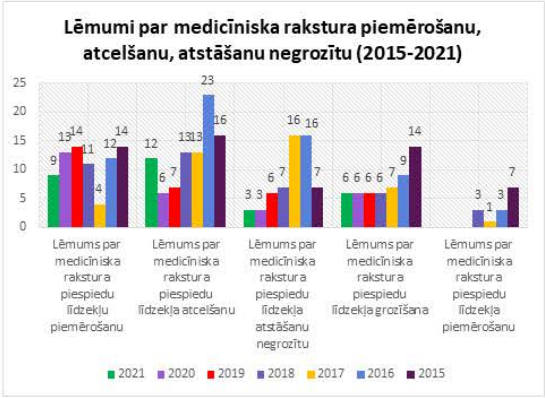
Aktualitāte / Mērķis

Pretdarbība noziedzībai nebūtu iedomāja bez kriminoloģijas zinātnes teorijām. Jau no zinātnes pirmsākumiem kriminologi cenšas izskaidrot saistību starp personību raksturojošiem datiem un kriminālo uzvedību, un, meklē paņēmienus kā mazināt un novērst kriminālās uzvedības izpausmes. Tiek atzīts, ka noziedzīga nodarījuma izdarīšanai varbūt dažādi cēloņi, dažkārt tie slēpjas aiz garīgās veselības problēmām, uzmanības deficīta un hiperaktivitātes traucējumiem (*angl. ADHD*), antisociālas uzvedības, kas neārstētas neļauj indivīdam socializēties sabiedrībā. Slimības traucējumiem ir jābūt tiešā saistībā ar nodarījumu. Vairākos pētījumos ir aprēķināts, ka ADHD ieslodzīto vīriešu vidū svārstās no 15% līdz 50% un pat 40% sieviešu vidū. Lielbritānijā veiktie likumpārkāpējumu pētījumi liecina, ka 14% sastopami ilgstoši, kas rada arī lielāku recidīva risku (Anker, Ginsberg & Heir, 2021). Pētījuma mērķis ir sniegt vispārēju ieskatu klīniskās kriminoloģijas saturā un pieejas noziedzības novēršanai.



Metodes

Pasaules valstu kriminoloģijas zinātnē ir uzkrāts plašs teorētisks un empīrisks materiāls, kas raksturo noziedznieka personības izpēti un sniedz preventīvos pasākumus noziedznieka resocializācijai. Lietderīgi citēt Izraēlas kriminologa G.Šlomi salīdzinājumu: kriminologu varētu raksturot kā karali bez bez valsts, jo viņa izpētes robežu plašums nav iezīmējams. Kriminoloģiskās realitātes parādību un likumsakarību izziņai tiek izmantotas vispārējās un speciālās juridiskās izziņas metodes: speciālās un juridiskās literatūras avotu referatīvā analīze; aprakstošā metode, detalizēti pētot pētījuma priekšmetu, statistiskā datu apstrādes metode. Pētījuma bāze ir dažādos pētījumos izdarītie secinājumi, zinātnieku un speciālistu atziņas.

Rezultāti

Klīniskā kriminoloģija kā kriminoloģijas zinātnisks novirziens, apvieno tradicionālo kriminoloģiju, psiholoģiju un socioloģiju. Tas neatspoguļo tradicionāro noziedzības novēršanas pieeju. Klīniskā kriminoloģija pamatota uz XIX.gs. izstrādāto koncepciju «noziedznieka bīstamais stāvoklis», tās autori R.Garofalo un E.Ferri noziedzību izskaidroja kā slimību (medicīnisku problēmu), norādot, ka noziedznieks ir nevis jāsoda, bet jālikvidē bīstamais stāvoklis. Nozīmīgi ir franču zinātnieka Ž.Pinatēla izstrādātie klīniskās iedarbības mēri noziedzniekiem (reāliem un potenciāliem). Ar dažādu aptauju palīdzību analizējot personību, kriminālo anamnēzi, attieksmi pret likumu, viņš piedāvāja novērtēt personību, atklāt "bīstamības stāvokli", sastādīt pāraudzināšanas plānu, kura rezultātā persona tiktu radikāli mainīta no sociāli bīstamas uz prosociāli orientētu (Mucchielli, 2017). Vēlāk mēģinājumos iedarboties uz personību un to mainīt zinātnieki, klīniskās kriminoloģijas piekritēji, pielietoja psihoanalīzi, elektrību, lobotomiju, talatomiju, ārstēšanu ar medikamentiem, kastrāciju. Persona palika ieslodzījumā, līdz ārstu komisija nekonstatēja bīstamā stāvokļa zudumu (Криминология, 2005). Atzīts, ka psihiski slimo un garīgi atpalikušo īpatsvars ir augsts. Psihiskie traucējumi un saslimšanas ir organisma unikālas īpašības, kas personu izceļ citu vidū (Loseviča un Losevičs, 2022). Dažādos pētījumos ir atklāts, ka līdz pat 58% noziedznieku bija diagnosticēti psihiska rakstura traucējumi (Robins & Helzer; Andrews & Bonta). Tiesu informācijas statistikas dati apkopojums redzams grafikā. Latvijā, no tiesu ekspertu psihiatru pieredzes ir zināms, ka veiktajās tiesu psihiatriskajās ekspertīzēs apmēram 75% ekspertējamo personu tiek konstatēti kādi psihiski traucējumi vai garīgā atpalicība (Strika, 2009).
Pandēmijas ietekmē cilvēku garīgā rakstura traucējumi biežums ir pieaudzis. Pētījumi rāda, ka Covid-19 slimība rada ilgtermiņa sekas, kas izpaužas kā garīga rakstura traucējumi, gan pandēmijas slogs kopumā palielina garīga rakstura traucējumu biežumu (Taquet&co, 2021).
Klīniskās kriminoloģijas mērķis ir noteikt kriminoloģisko diagnozi, kas izskaidro noziedznieka antisociālo uzvedību, lai iezīmētu ārstēšanu, kas palīdzēs pielāgoties dzīvei sabiedrībā. Pētījumi antikriminogēnas medicīnas jomā notiek joprojām (Loseviča un Losevičs, 2022). Kā nākotnes prespektīva kriminoloģijā tiek iezīmēts biomarķieris, kas izskaidro un prognozē noziedzīgas rīcības attīstību nākotnē. Kriminoloģiskajos pētījumos ir jāsekmē teorētisko atziņu pielietošanu praksē.

Secinājumi

1. Mūsdienu noziedzības globalizācijas apstākļos kriminoloģisko pētījumu nozīme tikai pieaug. Klīniskā kriminoloģija ir teorētiska un praktiska noziedznieka personības, kuras noziedzīgu nodarījumu izdarījušas nepieksaitāmības vai ierobežotas pieskaitāmības stāvokli, izpēte un prevencijas pasākumu un līdzekļu noteikšanas pieeja. Tās mērķis ir pētīt cilvēkus, kuri izdarījuši noziedzīgu nodarījumu, lai noteiktu viņu uzvedības diagnozi, piedāvātu prognozes, kā tas attīstīsies īsterminā un izstrādātu ārstēšanu, lai nodrošinātu viņu uzvedības diagnozi, kas persona atkārtoti neizdara noziedzīgu nodarījumu. Ir nepieciešamība, veicināt indivīda labklājības līmeni, iespējas realizēt savas spējas un dot ieguldījumu sabiedrības dzīvē. Secīga klīniska iedarbība pēc Ž.Pinatela piedāvātās metodes – diagnoze; prognozēšama; ārstēšana. Tātad balstīta uz nodarījuma prevencijas individuālo līmeni, nevis vispārējo novēršanu.
2. Recidīva prognozēšanas procesā varam izmantot divas pieejas:
   a) perspektīvo (saistīta ar izredzēm nākotnē) – tiek balstīts uz datiem par iepriekš aizturēto pārkāpēju raksturojumu;
   b) retrospektīvo (vērsts uz pagātni, pagātnes notikumu apskats) – pamatojas uz personības un tās uzvedības izpēti, kas veikta izmantojot, faktus un apstāklus par noziedzīgu nodarījumu.
3. Noziedzības kā sociāli negatīvas un tiesiskas parādības izpausmes ir plašas, kā arī sociālajām novirzēm varbūt pilnīgi atšķirīgas izpausmes. Noziedzīga nodarījuma gadījumā ir vērtējams sabiedriskā bīstamība psihiskas slimības vai garīgas atpilicības stāvoklis. Noziedznieka personības izpētes procesā jāizmanto kopveseluma pieeja – cilvēks un vide. Personības izziņas procesā sistematizēt ne tikai tiesiskos aspektus, bet informāciju kopumu par dzīves bioloģisko, psiholoģisko, sociālo, kultūras, garīgo vērtību un garīgo veselību. No tā izriet, apkopot informāciju par indivīda un vides mijiedarbību, savukārt kriminoloģiskajā tvērumā, formulēt tiesiska rakstura pasākumus kā palīdzēt, panākt, ka zūd bīstamības stāvokļa izpausmes. Bīstamības stāvokļa novēršanas (likvidēšanas, mazināšanas) procesā, veicināt sadarbību starp tiesībsargājošajām iestāžu darbinieku, medicīnas darbinieku un sociālo darbinieku.
4. Noziedzības veidošanās un novēršanas kontekstā būtu jāpēta Covid-19 pandēmijas seku novērtējums, lai savlaicīgi identificētu bīstamo stāvokli un apzinātu recidīva riskus.
5. Autore, iezīmējot nākotnes iespējas, norāda uz biomarķiera (*biomarkers*) perspektīvu kriminoloģijā – apzināt bioloģiskas saistības starp konkrētiem uzvedības stāvokļiem, kas var tikt izmantoti, lai indeksētu kriminālās uzvedības klātbūtni.

IMPACT OF THE COVID- 19 PANDEMIC ON THE IMPLEMENTATION OF THE TEACHING PROCESS IN THE FIELD OF NURSING AT FACULTY OF HEALTH CATHOLIC UNIVERSITY IN RUŽOMBEROK

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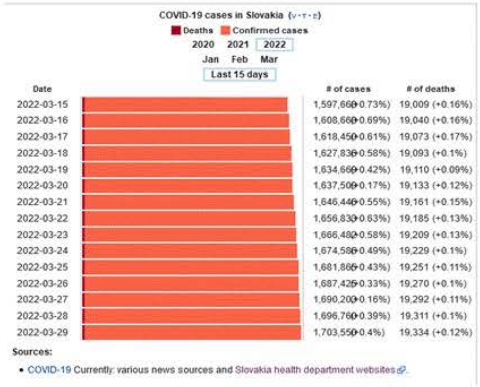
Actuality / The Goal

The pandemic hit the Slovak Republic in three waves. The first case was confirmed in Slovakia **6.3. 2020**. 16.3.2020 the **schools were closed**, and the state of emergency began, which lasted until 14.6. 2020. In the second wave, which began in October 2020, in the academic year 2020/2021, full-time teaching was interrupted from 12.10.2020 until the end of the year. Vaccinations began in the Slovak Republic on December 26, 2020, which was a benefit for the implementation of clinical practice and exercises in laboratory conditions.
In the calendar year 2021 and 2022, we continued in distance education of theoretical subjects and full-time education in exercises and clinical practices.

The aim of the paper is to describe the implementation of teaching, as well as the negative impact of measures on the socialization of students and the implementation of hobby activities and foreign mobility.



Methods

We used:
1. elementary thought procedures - comparison, analysis, synthesis,
2. empirical method and content analysis of the document (annual reports on the activities of the Department of Nursing and the Faculty of Health of the Catholic University in Ružomberok, website of the Department of Nursing).

Tab. 1 NUMBERS OF FACULTY STUDENTS - BACHELOR'S degree programs

Study program	1.	2.	3.	total number
Nursing	98	50	64	212
Radiological technique	32	28	33	93
Emergency Healthcare - Paramedics	47	41	45	133
Public health	11	5	3	19
Physiotherapy	31	22	32	85
Laboratory medicine	8	5	20	33
Total number	227	151	197	575

Results

In the results, we compare the implementation of teaching in the study field of Nursing at the Faculty of Health Care of the Catholic University in Ruzomberok in two academic years - 2020/2021 and 2021/2022.

Academic year 2020/2021
- ✓ The challenging epidemiological situation limited the teaching process, state final examinations, disrupted the plan of scientific research activities and Erasmus mobility. The Faculty of Health and its departments complied with the measures of the Public Health Office of the Slovak Republic and the Orders of the Rector of Catholic University (CU).
- ✓ The practical part of teaching had to be adjusted according to the epidemiological situation in individual health facilities.
- ✓ Students of all departments participated as volunteers in the implementation of anti-epidemic measures to prevent the spread of the new Coronavirus in the Military Hospital-Faculty Hospital in Ružomberok.
- ✓ Volunteers from the ranks of students also worked in the mobile sampling unit, helping with the operation of individual clinical workplaces according to current needs. Fifteen students of the Faculty of Health of CU were nominated to hand over a letter of thanks from the Rector of CU on the occasion of their volunteering in an emergency situation related to COVID-19. **The thank-you letter was handed over to 5 students of the Department of Nursing.**

Academic year 2021/2022
- ✓ The clinical practice of students in institutional facilities and primary care was carried out without restrictions.
- ✓ Theoretical teaching takes place in combination (online through Microsoft teams and contact in the classroom).
- ✓ Erasmus mobility of students and teachers was made possible while adhering to current anti-epidemiological measures.
- ✓ Extracurricular activities were carried out in a limited number of participants.
- ✓ The organization of international conferences with the student section was resumed, but most took place online.
- ✓ **In the summer semesters**, 8 students of the Nursing department took part in the Call of the Ministry of Health of the Slovak Republic **Strengthening teams in hospitals.**

Conclusions

The presented data point to the fact that the pandemic significantly affected the teaching process, extracurricular activities and was the reason for the reduction of student contacts within the field of Nursing.
At the beginning of the pandemic **- in 2020**, increased demands were placed on teachers who had to look for appropriate ways to communicate with students and collaborating institutions. They had to prepare study materials for online teaching. Scheduled conferences, internships and mobility have been canceled. Later the mobility took place online. The course of state examinations was also affected, especially practical examinations, which were carried out in laboratory conditions.
In 2021, the situation was adjusted. By changing the organization of the practice, clinical teaching could take place without restrictions. By supplementing educational materials and equipment, theoretical teaching has improved. Teachers have improved in the use of various online communication tools (Microsoft Teams, Google meet, Webex ...). At the end of the year, 3 important international conferences took place.
In the current **year 2022**, a combined form of teaching is still underway. However, the final state examinations will already take place at clinical workplaces.
The pandemic taught us the new management of work and, thanks to the focus of the field of study, also offered the opportunity to be directly involved in providing assistance to the sick in hospitals.

Izaicinājumi izglītības procesa nodrošināšanai Vispārīgās datu aizsardzības regulas kontekstā COVID – 19 pandēmijas laikā

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Aktualitāte / Mērķis

COVID – 19 pandēmija ir bijis ne tikai liels satricinājums sabiedrībai kopumā, bet tā kopumā ir mainījusi lietu kārtību un to kādā veidā tiek organizēti un apzināti iepriekš ierastie procesi. Kā viena no jomām, ko COVID – 19 skāra visvairāk, un prasīja pārmaiņas, kurām neviens iepriekš nebija gatavojies, bija izglītības nozare. Kā vienu no apstiprinošiem piemēriem izteiktajiem apgalvojumiem ir iespējams minēt Latviju, kad, piemēram, pirmo reizi COVID – 19 dēļ Latvijā tika izsludināta ārkārtas situācija 2020. gada 12. martā, taču jau sākot ar 13. martu visām mācību iestādēm bija jānodrošina mācības attālināti. Pētnieciskā darba mērķis ir identificēt problemātiku izglītības procesa nodrošināšanā Vispārīgās datu aizsardzības regulas kontekstā COVID – 19 pandēmijas laikā, kā arī sniegt priekšlikumus izglītības procesa nodrošināšanai, atbilstoši Vispārīgās datu aizsardzības regulā noteiktajām prasībām.

Metodes

Pētījuma mērķa sasniegšanai tiks izmantotas kvalitatīvā pētījuma metodes, tas ir, zinātnisko rakstu analīze, kā arī tiesību normu interpretācijas metodes, kas ļaus Darba gaitā tiks veikta starptautisko un nacionālo tiesību normu analīze.

Rezultāti

1. COVID – 19 pandēmija apgrūtina datu aizsardzības normu ievērošanu, jo mācību process bieži notiek nekontrolētās datu subjektu personīgajās telpās, jo tajās uzturas citi datu subjekti, tādējādi var notikt netīša personas datu nosūtīšana bez daru subjekta piekrišanas.
2. Lai nodrošinātu mācību procesu COVID – 19 pandēmijas laikā Izglītības iestādes bieži vien izvēlas nosūtīt personas datus ārpus ES vai EEZ valstīm, izmantojot dažādus videokonferenču rīkus, kas glabā datus ārpus ES vai EEZ, lielākoties ASV, kā piemēram, Zoom vai Microsoft Teams, pēc tam, kad 2020.gada 16.jūlijā Eiropas Savienības Tiesa pasludināja spriedumu lietā C-311/18 (*Schrems II*), kas atcēla Komisijas Īstenošanas lēmumu (ES) 2016/1250 (2016. gada 12. jūlijs) saskaņā ar Eiropas Parlamenta un Padomes Direktīvu 95/46/EK par pienācīgu aizsardzību, ko nodrošina ES un ASV privātuma vairogs par personas datu pārsūtīšano no ES uz ASV.
3. COVID – 19 pandēmijas laikā daudz grūtāk ir nodrošināt tehniskos un drošības pasākumus kā drukāta tā digitāla formāta materiāliem, kas tiek izmantoti vai saņemti mācību procesa laikā, kas var saturēt personas datus, jo ir iespējams, ka mācību procesa laikā dažādi materiāli tīši vai netīši tiek publicēti izglītojamajiem, piemēram, ar «dalīties» ekrānu funkciju videokonferenču platformās, kā arī digitālie rīki ne vienmēr spēj nodrošināt privātu komunikāciju starp izglītojamo un mācību procesa nodrošinātāju, tādējādi personas dati var tikt izpausti trešajām personām, kā arī var notikt personas datu pārnešana, piemēram, zibatmiņās vai citās iekārtās no izglītības iestādes uz privātajām iekārtām, ja mācības tiek nodrošinātas no vairākām iekārtām.

Secinājumi

1. Ņemot vērā straujo digitalizāciju izglītības jomā COVID-19 pandēmijas laikā, personas datu pārsūtīšana var notikt pašiem datu subjektiem to neapzinoties un nepiekrītot, kas ļauj secināt, ka tiek apdraudēta datu subjektu cieņa un neaizskaramība, kā arī ne vienmēr personas dati tiek apstrādāti, pamatojoties uz apstrādes likumīgumu vai Vispārīgās datu aizsardzības regulas 6. pantā noteiktajiem pamatojumiem.
2. Digitālo rīku kā Zoom vai MS Teams izmantošana pakļauj ES datu subjektu personas datus tiesību aktiem, kas vienmēr nenodrošina līdzvērtīgu datu aizsardzības līmeni kā ES.
3. Digitālo rīku izmantošana apgrūtina tehnisko un organizatorisko pasākumu piemērošanu izglītības iestādēs jeb Vispārīgās datu aizsardzības regulas 32. panta piemērošanu.

MONITORING OF CRITICALLY ILL COVID-19 PATIENTS ON MECHANICAL LUNG VENTILATION USING BREATH SENSOR TECHNOLOGY

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Background

Monitoring of critically ill COVID-19 patients being ventilated is essential for timely and improved management. We present a novel breath volatile organic compounds (VOC) sensor technology to be used in mechanical lung ventilation for monitoring critically ill COVID-19 patients. Sensor technology application for VOCs detection in human breath for disease monitoring is easy-to-use, non-invasive, fast and low-cost [1,2].
The breath sensor device with metal oxide (MOX) gas sensors and environment-controlling sensors was mounted on the exhaust port of the ventilation machine, ensuring additional safety since the device was placed outside the contour between the patient and equipment.
The sensors allowed stable registration of the signals for up to several weeks for altogether 10 patients; a proportion of patients got intubated during the evaluation period. We suppose that such technology allows patient monitoring in real-time for timely identification of deterioration potentially requiring some change of management.

Methods

Sensor Device

Figure 1. (A) Clear-Guard MIDI breathing filter with Luer port; **(B)** Sensor device adapted for use in mechanical lung ventilation machine; embedded in the breathing filter, a sensor signal registration device (Raspberry Pi), and a power adapter; **(C)** Sensor board connected to a micro-USB cable.

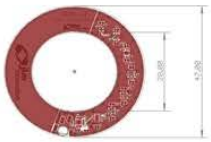

Figure 2. Technical design of the sensor device (dimensions in mm). The sensors are on the right side.

- designed by JLM Innovation GmbH (Tübingen, Germany)
- comprises environmental sensors that measure temperature, pressure and humidity, and a set of MOX gas sensors with different specificities measuring VOCs present in patient's breath
- incorporated into the lung ventilation machine and evaluated in real conditions on COVID-19 patients at Riga East Clinical University hospital – Clinic of Toxicology and Sepsis or Latvia Infectology Centre

Placement of the Sensor Device

Figure 3. Sensor device placement at the outlet of the mechanical lung ventilation machine (position 2) in real operating condition in hospital setting, which was adopted. Another potential location (position 1) of the breath contour before the ventilation machine was also evaluated.

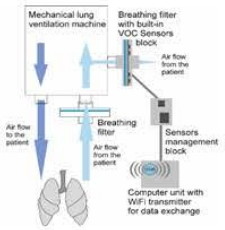

Figure 4. Schematic of sensor device placement including the ventilation airways and sensors signal acquisition for monitoring of COVID-19 patients.

- taking into consideration the potential risk of contamination, safety, practicality, breath humidity, and sensor interaction with infectious material, the outflow part/exhaust of the ventilation machine (HAMILTON-C6, Hamilton Medical AG, Bonaduz, Switzerland) was identified and selected to be the optimal place for sensor localization.
- breathing measurement data from the sensors readings were recorded using a data cable and a Wi-Fi transmitter for further processing and analysis.

Sensors Characteristics

Manufacturer	Sensor Type/Model	Technology	Number/Subtype	Sensor Main Feature
Renesas/IDT	ZMOD4410A	MOX	3	One output for VOCs at three different temperatures
Renesas/IDT	ZMOD4410C	MOX	3	One output for VOCs at three different temperatures
Renesas/IDT	ZMOD4510B	MOX	3	One output for VOCs at three different temperatures
AMS/SocSense	CCS811	MOX	1	One output for VOCs
Sensirion	SGP30	MOX	2	Two outputs for EtOh and for H_2
BOSCH	BME680	MOX	1	One output for VOCs, three outputs for environmental variables: temperature, pressure, and humidity
AMS/SocSense	ENS210	-	2	Two outputs for temperature and humidity

- sets of sensors selected based on sensing characteristics, low power consumption, technological quality, low cost, and compatibility with medical applications
- 6 digital gas sensors: one with 2 outputs for VOC sensing (SGP30), two with one output for VOC sensing (CCS811, BME680), and three each modulated at three temperature levels (IDT-ZMOD) – array giving 13 sensor signals

Results

Sensor Signal Recording

- breathing measurement data from the patients were recorded which could be used to monitor changes in the VOCs present in exhaled breath of the patients connected to the ventilation machine

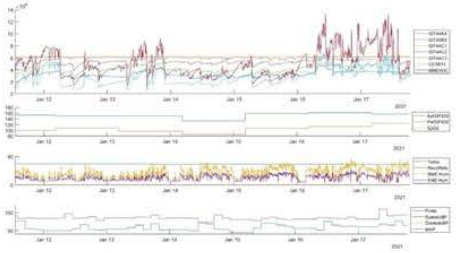

Figure 5. Sensors signals obtained during the ventilation of a patient (total recording time or full registration period). The measurements refer to one-week period.

- all gas sensors, each with its own response time, were stable during the long-time measurement and delivered good resolution readings

Data Exploration and Methodology

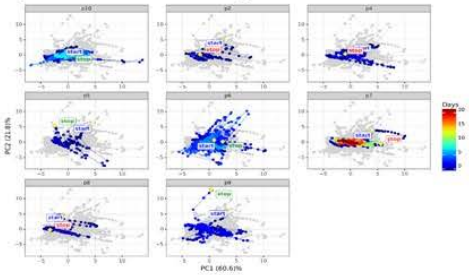

Figure 6. PCA scores plot per patient along the time capturing 95% of variation of the patients' data in first two days of measurements. The color of the STOP label indicates whether the patient survived (green) or died (red). The grey shadow indicates the silhouette of all the data in PC1 vs PC2.

- after pre-processing steps to prepare data (down sampling, filtering and decreasing the correlation with environmental variables), a PCA model with first two days of measurements of all the patients was built, retaining 95% of the variance in 4 features

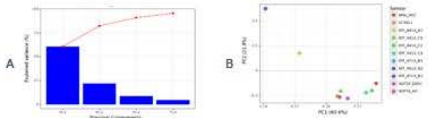

Figure 7. (A) PCA explained variance plot; **(B)** PCA loadings plot

- loadings plot shows the contribution of sensors to first two PCs, high degree of correlation among sensors of similar type: IDT-B, SGP30
- the evolution of patients' condition was observed in only two PCs; data from several more patients are needed to find patterns and predict the next patient's status so that the doctors can act in advance.

Conclusions

- We reported on assessing the feasibility of implementing exhaled breath analysis through real-time sensor monitoring for critically ill COVID-19 patients in artificial ventilation. The system followed the patient's state on real time that could help to predict the course of disease and risk of possible complications by studying sensor signals.
- The initial clinical experiments and results obtained are promising and affirm that the developed breath sensor technology has potential in long-term monitoring of severely ill COVID-19 patients undergoing artificial ventilation.
- The technology may have wider implications beyond COVID-19 patients, and could be implemented for clinical use in hospitals.

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More effective information layout options in medical chemistry course

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Actuality / The Goal

Establishing or scaling up distance learning strategies are a sector-wide response to sudden interruption of educational processes as a result of unexpected COVID-19 school closures. The planning of more comprehensive distance learning strategies should, however, be guided by both immediate mitigation needs and long-term goals (https://unesdoc.unesco.org/ark:/48223/pf0000373305?posInSet=2&queryId=N-8ea77989-29de-4ff3-997c-eaddc678be5b Distance learning strategies in response to COVID-19 school closures). Also, to achieve maximum positive effect the study process must combine the online approach with the traditional approaches towards learning. The experience gained from distance learning actualizes the need to further research the use of digital technologies to be included in future study process. Information must be laid out clearly for students to be able to navigate through it as the tendency to present students with all possible information can create an information overload. Because of this, several layouts of study material were researched in order to use the most effective ones based on evaluation by students.

Results

The results cannot be generalized towards all students since the research involved a 100 first-year students from Riga Stradiņš University Medical chemistry studies (study program "Medicine"). However, this research gave interesting insights about the most popular forms of study material. Only a few (3) students didn't use e-studies. Most of the students (89) used video lectures and the majority (75) used schematic visual information. Detailed and comprehensive information however was required only for a small number (12) of students. This is a concern as it suggests that such material might not be perceived and analyzed due to lack of time or lack of previous knowledge. The results of the questionnaire also prove the need for information analysis and integration in chemistry course as only 20 students were able to distinguish relevant from irrelevant although 64 students agree that they learned to analyze facts during the chemistry course.

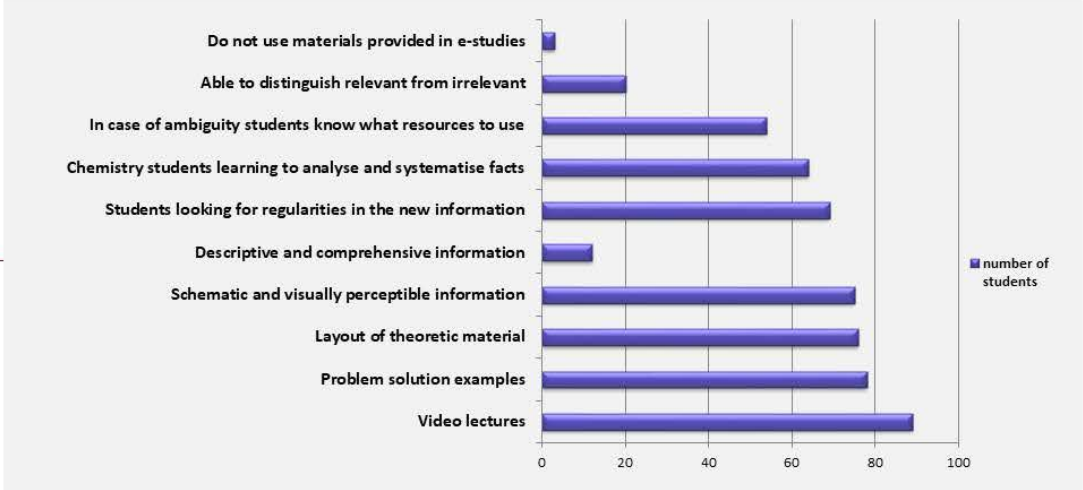

Fig.1 Study material options

Methods

When realizing each full-time lesson online it was paramount to sequentially go through all stages of learning chemistry - from perception, comprehension, application and interdisciplinary integration to higher forms of cognition such as analysis, synthesis and evaluation. All different information sources intended for synchronous online lessons and studies (video lectures, demonstrations of laboratory work, theoretical material and problem solution examples) should create a unified context. This is required to avoid information overload, to improve comprehension and to develop usage skills of different cognitive methods. By using critical thinking development methods during the semester students learn to structure information and also gain an overall understanding of concepts and context. A meaningful context of natural regularities helps students to comprehend chemical regularities and remember them long term.

Conclusions

When evaluating the study course in questionnaires, students appreciated e-studies provided for medical chemistry course and described them as clear and informative. Although during the Covid-19 pandemic distance learning is the predominant way of learning it isn't suitable for everyone and in every situation. The questionnaires and student grades showed that methods and materials used in the course can be successfully used not only in distance learning but also in future when returning to full-time studies.

Nepārvaramas varas (force majeure) un pandēmijas fenomens tiesībās un sekas.

Osvalds Joksts
Dr.hab.iur., RSU Emeritus zinātnieks,
Juridiskās fakultātes vad. pētnieks

Aktualitāte / Mērķis

No tiesību viedokļa raugoties svarīgi ir spēt precīzi definēt kas tad ir "nepārvaramā vara" jeb lat.(force majeure) un pandēmija (epidēmija). Vienlaikus, būtiski izprast kāpēc tie bieži atrodami ir tiesību zinātņu labirintos, par ko runā daudzos gadījumos tiesu spriedumi un nolēmumi, tiesībzinātnieku atklājumu tekstos vai publikācijās par tiem. Vai minētie jedzieni rada tiesiskās sekas, kuras tiek izmantotas cilvēktiesību pētījumos, šo tiesību aizsardzībā un dažādu mantisku un personisku nemantisku juridisku faktu un juridisku darījumu gadījumos ? Un visbeidzot, vai šie jēdzieni nepārvaramā vara un pandēmija ietver sevī arī pušu atbildības rašanos, apmērus, kas skar zaudējumu piedziņas, morālā kaitējuma atlīdzināšanas rezultātu procesuālo procedūru izlietojumu.
Šīs publikācijas mērķis ir analizēt no tiesību viedokļa reguļējumu, kas orientēts ir uz personu (fizisku un juridisku) tiesību aizskārumiem, ja tie parādās. Nevis detalizēti skaidrot cilvēktiesību aizsardzību pret nepatiesiem vai līdz galam nenoregulētām tiesiskajām attiecībām darbā, sadzīvē, vai valstu līdzāspastāvēšanā vispār.
Īpaši tiks iezīmēta augstāk norādīto jēdzienu problēma, jo tā sāk izplatīties ar neticamām politiska, tiesiska un ekonomiski sociāla rakstura pieejām kāpēc arī tiek piedāvāts pētīt to, kas šobrīd ir īpaši aktuāls un vajadzīgs. Teikto raksturo 2 svarīgi aspekti, kur viens no tiem ir saprast, kas tad ir jēdziens "nepārvarama vara", kurš līdz šim nekur nav definēts, kas nozīmē, ka tā definīcija nav ieraugāma nevienā Latvija tiesību aktā, ko atzīst pat Tieslietu ministrija. Tanī pat laikā izskatās, ka beidzot tas ir jāsāk nekavējoši pētīt, jo pati dzīve ir parādījusi šāda fenomena pastāvēšanu ne tikai Latvijas mērogā, bet arī globāli.

Rezultāti

Nepārvaramas varas fenomens var pastāvēt gan personu likumiskajās, gan arī personu līgumiskajās attiecībās. Īpaši akcentējami ir šīs parādības klātbūtne civiltiesiskajā apritē, jo vissarežģītāk ir analizējami procesi, kuri rodas pusēm slēdzot, piemēram, darījumus par mantisko vērtību pirkumu, dāvinājumu, maiņu vai kādu citu saucamo atvasinājuma līgumattiecībām, kur tiesiskās sekas var izpausties materiāla rakstura zaudējumos vai arī morāla kaitējuma atlīdzināšanas jomā. Tas var izpausties, kā puses var būt pielīgušas gadījumus, kurus tās uzskata par nepārvaramas varas apstākļiem, var būt pielīgtas arī konkrētas tiesiskās sekas, kuras pastāv līgumsaistībās.
Civiltiesiskajā apritē likumdevējs ir paredzējis no vienas puses "divdomīgu" saistību nodibināšanu, kuras var slēpt minēto normu regulējumā nepārvaramas varas elementus un neskaidrības, ko bieži var izmantot ļaundari sava labuma gūšanai. Proti, ar likumu tiek pieļauti gadījumi, kuros nepārvaramas varas iestāšanās var būt tiesisks pamats atbrīvot personu no saistībām (piem., izraisa saistību izpildīšanas neiespējamību abām pusēm). Tas apstiprināms ir ar nomnieka vai īrnieka pienākumiem (Civillikuma 2147. pants, Civillikuma 1730.panta 2.daļa). "Nepārvarama vara" nav viena, bet iet kopsolī ar tādu jēdzienu, kā pandēmija, kas kā redzams ikdienā arvien vairāk un vairāk un "apkaļpo" viena otru un radot cilvēcei problēmas tās pastāvēšanā. Šiem jēdzieniem pastāv arī būtiska rakstura tiesiskās nianses. Tā piem., pandēmija, kā jēdziens pasaulē uzradās negaidīti un postoši, kas iezīmējās ar miljoniem cilvēku dzīvību un neaprēķināmu materiālo un psiholoģiski - morālo zaudējumu apjomiem.
Raksturojot pandēmijas pastāvēšanas draudus, nevar neatzīmēt ārējo apstākļu parādīšanos, kas turpina sarežģīt ikvienas sabiedriski ekonomiskās formācijas pastāvēšanu atkarīga no ģeopolitiska rakstura notikumiem, kas var iespaidot ikvienas demokrātijas apspiešanu un novērtējami ir ka naidīgie spēki cenšas sadragāt cilvēcības pastāvēšanas pamatus, kas šobrīd ir redzams Ukrainā.
Ilustrācijai nevar nepieminēt notikumus Ukrainā, kas ir raksturojams, kā barbarisks un nežēlīgs uzbrukums visai valstij, kura nevēlās kļūt par vasaļu atzaru kāda agresora neargumentējamu iegribu dēļ un nepieredzētu 21. gadsimta globālu izaicinājumu, aizstāvot savu demokrātiju un brīvību. Piemēram, kāda valsts izdomā organizēt bruņotu "specoperāciju" ar svešu zemju iekarošanu, kas ir būtisks starptautisko tiesību normu rupjš pārkāpums un ir kvalificējams, kā sevišķi smags noziegums pret cilvēci. Šādos gadījumos iestājās atbildība, ko izskatīt var tikai Hāgas tribunāls, kas jau attiecībā uz agresiju pret Ukrainu tiek patreiz izmeklēts.
Ukrainas gadījumā valsts agresors kļūdījās, novērtējot pāragri pašiem sevi, bet nenovērtējot ukraiņu patriotismu un militārās spējas cīņā par savas zemes aizstāvēšanu.
Pastāv iespēja, ka līdzīgi gadījumi, kas būtu kvalificējami, kā nepārvaramas varas ārējo apstākļu iestāšanās, var tikt attiecināti arī uz citām valstīm, ieskaitot pat ES valstis.

Secinājumi

Tieši zinātnei un zinātniekiem ir parādījies pētījumu lauciņš, kas ir ar steigu apgūstams. Turpmākie pētījumi un attiecīgās publikācijas ļautu iegūt zinātniska rakstura pamatojumus par vajadzību izskaidrot un analizēt juridiskus faktus un juridiskās darbības, kas nodrošina tiesībzinātnes pamatsaturu un zinātniskās izziņas procesus, noskaidrojot nepārvaramas varas pamatfunkcijas, veicot, tostarp:
pandēmijas un nepārvaramas varas, kā parādību aprakstus;
izskaidrot ar tiesību zinātnisko metožu palīdzību šo parādību būtiskās sakarības, ieskaitot kopīgo un atšķirīgo;
prognozēt pandēmijas un nepārvaramas varas attīstības tendences, respektējot pieeju meklēšanu to atklāšanā un to apkarošanas kontekstā.

*__Pandēmija__, kā visas tautas (gr. pandemia) parādība jeb medicīniska epidēmija var pastāvēt gan vienā valsts teritorijā, tāpat pat veselos kontinentos (skat. Svešvārdu vārdnīca, Avots , R. 2004., 400.lapp.). Jēdziens pandēmija ir pakļauts ne tikai tiesiskam regulējumam Latvijā, bet arī tiek skatīts kontekstā ar Covid 19.

Nepilngadīgo pacientu tiesību interpretācijas problemātika Covid-19 pandēmijas apstākļos

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Aktualitāte / Mērķis

Covid-19 pandēmijas laikā tika identificēti problēmjautājumi gan pacientu tiesību īstenošanas jomā kopumā, gan arī veselības aprūpes iestāžu darbībā pacientu tiesību ievērošanas kontekstā. Pandēmijas laikā saskaroties ar izaicinājumiem tiesību uz veselību īstenošanā, tika radīts papildus slogs veselības aprūpes sistēmai, kas tai skaitā negatīvi ietekmēja arī nepilngadīgo pacientu tiesības. Pētnieciskā darba mērķis ir raksturot būtiskākos trūkumus nepilngadīgo pacientu tiesību aizsardzības jomā, kā arī sniegt priekšlikumus, kas turpmāk ļautu pilnveidot nepilngadīgo pacientu tiesību aizsardzību.

Metodes

Pētījuma mērķu sasniegšanai tiks izmantotas kvalitatīvā pētījuma metodes, tiks veikta zinātnisko rakstu un gadījumu analīze. Vienlaikus, lai sasniegtu pētījuma mērķi tiks izmantotas arī tiesību normu interpretācijas (iztulkošanas) metodes, kas ļaus noskaidrot problēmjautajumu regulējošo tiesību normu patieso jēgu. Tiks veikta starptautisko un nacionālo tiesību normu analīze, kā arī starptautisko tiesību principu analīze.

Rezultāti

1. Nav pieļaujamas atkāpes no veselības aizsardzības tiesisko standartu, kas nodrošina pamattiesības, ievērošanas arī pandēmijas apstākļos.
2. Nepilngadīgi pacienti īpaši aizsargājama pacientu grupa, kuru tiesības COVID -19 pandēmija skāra gan tieši, gan pastarpināti. Tiešs tiesību aizskārums saskatāms gadījumos, kad nepilngadīgais pacients pats tika kavēts izmantot savas tiesības, savukārt, pastarpināts – kad tiesību kavējuma iemesls bija nepilngadīgā pacienta likumiskā pārstāvja tiesību aizskārums.
3. Tiesiskais regulējums netika pilnveidots atbilstoši COVID -19 pandēmijas izraisītajiem faktiskajiem apstākļiem, savukārt ārstniecības iestādēm trūka kapacitātes līdztekus ārstniecībai nodrošināt fleksiblu tiesiskā regulējuma interpretāciju.

Secinājumi

1.Nepilngadīga pacienta tiesības Covid -19 pandēmijas laikā tika ierobežotas, un minētā tiesību ierobežošana saistīta ar Pacientu tiesību likuma 13.panta sašaurināšanu attiecībā pret starptautisko regulējumu bērnu tiesību aizsardzības jomā veselības aprūpēs sistēmas kontekstā. Šā panta Interpretācijas neskaidrība rada atšķirīgas pieejas praksi nepilngadīgo pacientu tiesību īstenošanai, tai skaitā arī pandēmijas apstākļos.
2.Nodrošinot nepilngadīgo pacientu tiesības Covid -19 pandēmijas laikā tika novērots aizliegtas atšķirīgas attieksmes atkarībā no personas vecuma un brieduma aizskārums. Atšķirīga attieksme ietver personas tiešu vai netiešu diskrimināciju, personas aizskaršanu vai norādījumu to diskriminēt.
3. Nepilngadīgo pacientu tiesības informētas piekrišanas kontekstā Covid -19 pandēmijas laikā netika pilnvērtīgi analizētas, proti, ir pieļautas sistēmiski tiesiskās kļūdas informēto piekrišanu saturiskās daļas noformēšanā. Ārstniecības iestādēm ir jāpalielina kapacitāte jautājumos, kas skar tiesiskā regulējuma piemērošanu.

Observation of automated management use of self-sampling kits

Didzis Gavars [1,2], Egīls Gulbis [1,2] , Mikus Gavars [1], Jānis Stašulāns [1], Valdis Gavars [1], Justīne Grundmane [1,3]

1 E. Gulbja laboratorija, 2 Rīgas Stradiņu Universitāte, 3 Latvijas Universitāte

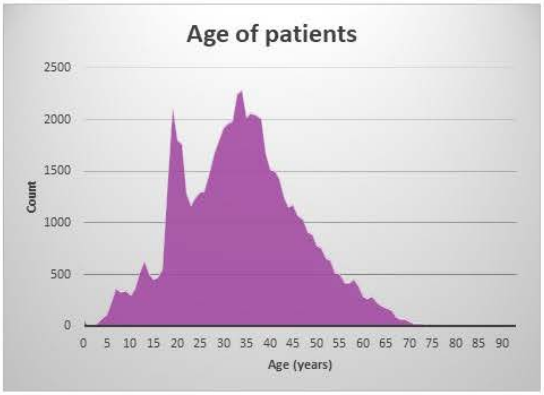
E. Gulbja Laboratorija

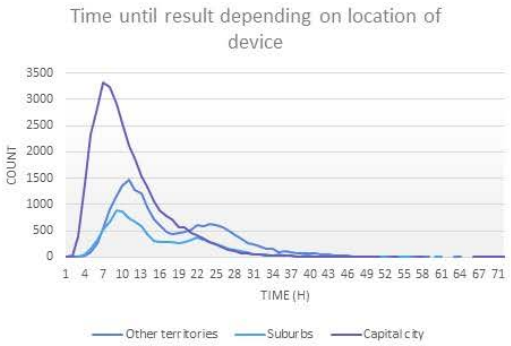
The goal was to introduce an automated and effective solution for the management of self-collected samples. E. Gulbja Laboratory collected the data of using automated self-sampling kit collection from 1st January 2021 until 31st December 2021. We have formulated conclusions about the data and use of automation in the self-sample kit collection.

Case description

E. Gulbja Laboratory collected data about SARS-CoV-2 saliva sample kit collection in automated devices, average processing time between sample collection and result reception by the patient, proportions of positive tests, the age distribution of patients who used automated collection devices, and the ratio of sample kits that were collected outside of regular working hours (20:00 – 08:00).

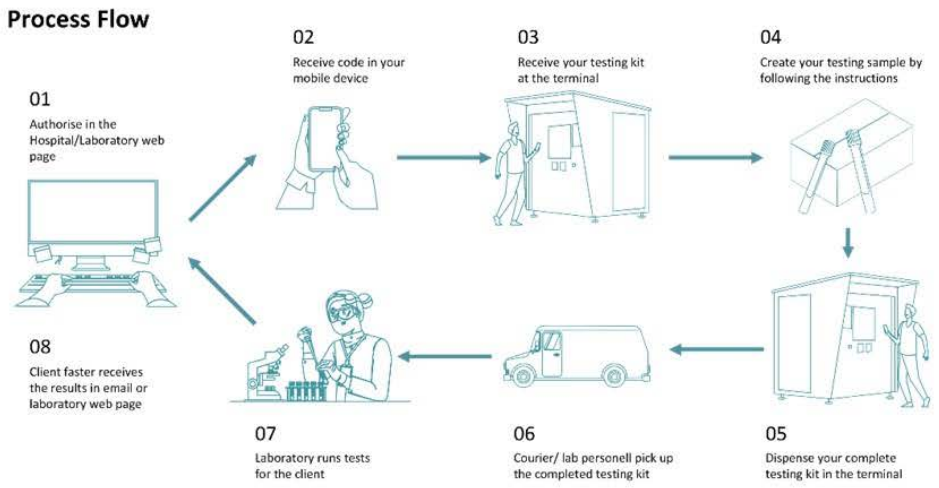
Results were collected from 18 automated (contactless) sample collection devices used by E. Gulbja Laboratory. Sixty-four thousand two hundred fifty-seven (64 257) saliva kits for SARS-CoV-2 PCR testing were conducted, 3.92% of them were positive (SARS-CoV-2 virus RNA found in saliva sample). The average processing time in automated devices located in the capital city was 11.13 hours, in the suburbs – 15.52 hours, rest of the country – 17.60 hours. The average age of patients that choose an automatic device to hand in their saliva sample kits was 33.94 years.





By using automated device, patient contacts were decreased, and direct communication with medical staff was excluded, witch reduces the risk of infection during processing.

Automated devices make sample kit distribution available 24 hours. It saves workforce resources in the laboratory that are already very limited, especially during a pandemic period.



Scan QR code for device demonstration video

REGISTRATION OF AN ENTERPRISE IN A COVID-19 ERA: PERSPECTIVES AND CHALLENGES

Diāna Bukēviča, Legal Counsel of the Legal Department at the Register of Enterprises of the Republic of Latvia

Actuality / The Goal

The emergence of COVID-19 in 2020 urged Latvian legislator to adopt amendments to laws regulating entrepreneurial activity with an overall vision of digitalizing the registration process. The goal of this study is to objectively analyse the perspectives and challenges stemming from the legislative amendments in the entrepreneurial domain adopted due to spread of COVID-19 in Latvia, substantiate the necessity of improving the regulatory framework of business digitalisation, and eventually come up with relevant legislative proposals.

Methods

1. Methods of interpretation of legal norms:
   - grammatical interpretation;
   - systemic method;
   - historical method;
   - teleological method.
2. General scholarly methods:
   - doctrinal analysis of the relevant normative acts;
   - statistical analysis of quantitative indicators on digital business;
   - qualitative research method as regards scholarly literature;
   - induction method in delivering conclusions about legislative proposals.

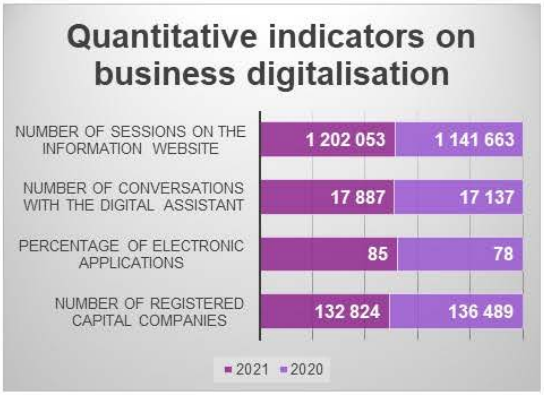
Results

Thorough analysis of the relevant normative acts reveals that **perspectives** of the registration of enterprises in a COVID-19 era are aimed at **complete digitalisation** of state administration services and facilitation of remote submission of the necessary documents:

- The Law on the Management of the Spread of COVID-19 Infection (in force from 10 June 2020) provides that the documents shall be submitted to the Register of Enterprises either electronically or in paper form by post (Section 36).
- The Law on the Suppression of Consequences of the Spread of COVID-19 Infection (Section 37) and Commercial Law (Section 214.[1]) provide for a possibility to hold meetings of shareholders or members remotely as an alternative to on-site meetings.
- Law on the Register of Natural Persons (in force from 28 June 2021) provides inter alia an option for foreign citizens to acquire a Latvian eID on the basis of the presence of their entrepreneurial activity in Latvia.

Although the future perspective envisions registration of business in a completely remote form and submit the documents from any place on the globe, the **challenges** related to accessibility of digital services also pervade:

- The Amendments to the Commercial Law of the Republic of Latvia (in force from 12 January 2021) exclude the provision whereby a state notary of the Register of Enterprises was entitled to certify signatures (Section 9, part 1).
- According to the provisions of the Electronic Documents Law only qualified electronic signatures compatible with the requirements of eIDAS regulation are admissible.



Picture from the archives of *LV portāls*

Conclusions

The overall tendency derivable from the public accounts of the Register of Enterprises for years 2020 and 2021 reflects the extensive digitalisation of state administration services and a more enthusiastic choice in favour of remote registration of entrepreneurial activity by private persons. The aim of the aforementioned is a more facilitated submission of documents and easing of the administrative burden on private persons that relates to legalisation and certification of documents in paper form.

Legislative amendments introduced since the beginning of spread of COVID-19 have not only facilitated the administrative process of registration, but also introduced new possibilities for meetings of shareholders or members. Nevertheless, in practice there is a confusion among the executive institutions of different legal bodies as to how to conform to the legally prescribed notification procedure of meetings of shareholders/members and to what extent the remote meetings are compatible with various provisions of articles of association.

However, non-EU nationals might experience challenges in digital submission of documents, in that electronic signatures issued in their countries might not conform to the requirements of a qualified signature. This essentially puts private persons from outside the EU in a more disadvantageous position and discourages foreign investment. Additionally, lack of on-site state administration service and impossibility to certify signatures on site at the Register of Enterprises in certain cases oversteps the general principles of state administration.

RSU students' perceptions, experiences and shift in learning behaviors during COVID-19 pandemic

Oluwaseun Jegede, Noah Agbo, Leila Salimova
Group of RSU students from Erasmus Mundus Joint Masters Social Work with Children and Youth (ESWOCHY)

Actuality/The Goal

The project goal is to examine RSU students' perceptions, experiences and the shift in their learning behavior towards learning activities during the COVID-19 pandemic. Understanding RSU students' adaptive strategy and how they explore available online learning resources provided by the university during the COVID-19 pandemics might help to provide appropriate support for students in unplanned event as this. The direct beneficiaries of this study include RSU students; while indirect beneficiaries are professors, RSU management, education community, non-academic staff, students' union.

Methods

The study employs a descriptive quantitative study design which utilizes an online questionnaire as a primary data collection measure to explore students' perceptions, using the purposive sampling technique. Eighty English-speaking, international and residential (local) RSU students, inclusive of undergraduate and graduate students who finished their first semester, participated in the survey. Data collected were sorted based on study criteria and analyzed using MsExcel and SPSS version 20.

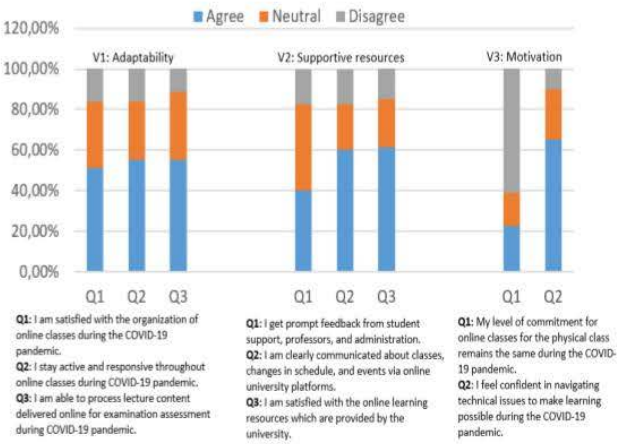
Results

Out of 80 respondents in the study, most are below 24 years (90%), a greater percentage of the respondents, (55%) are international students. Bachelor students are more (78.8%) in the study. Most of the respondents 59 (73.8%) are females in the study.

Most of the respondents (55.1%) agree that they stay active and responsive throughout online classes during COVID-19 pandemic, whereas (16.3%) disagree. Similarly, (55.1%) agree that they process lecture content delivered online for examination assessment during COVID-19 pandemic, while (11.3%) of the respondents disagree with this item. Further, (51.3%) of the respondents agree that they are quite satisfied with the organization of online classes during the COVID-19 pandemic, whereas (16.3%) disagree. The result of this findings shows that RSU students demonstrate positive behavioural adaptation to online learning during COVID-19 pandemic similar to finding of (Baber, 2021), where the result of the finding shows that students in South Korea demonstrate positive attitudes towards online learning during the global COVID-19 pandemic.

On the questionnaire item, "I am satisfied with the online learning resources which are provided by the university", (61.3%) of the respondents agree to this item, while (15.0%) disagree with this item. As opposed to the (17.5%) of the respondents who disagree with the item, "I get prompt feedback from student support, professors, and administration", (40%) agree to this item. Additionally, (60.0%) of the respondents in the study agree that they are clearly communicated about classes, changes in schedule, and events via online university platforms This is against the (17.5%) respondents who disagree

Most of the respondents (61.3%) disagree that their level of commitment for online classes for the physical class remains the same during the COVID-19 pandemic, while (22.5%) agree to the item. Consequently, most of the respondents (65.1%) agree that they feel confident navigating through technical issues to make learning possible during the COVID-19 pandemic while (10.0%) disagree. This finding is corroborated by the studies of Besser et al., (2020), & Xhelili et al., (2021) where students reportedly show high preference for face-to-face classes than online classes during the global COVID-19.



Conclusions

Based on the nature of the kind of analysis adopted in this survey, we can deduce that RSU students are increasingly adapting to online learning as they show responsiveness and are able to process learning during the COVID-19 pandemic.

Although the university management has shown great responsibility in the provision of online learning resources, there is still a gap in the communication and feedback of information between teachers and students in RSU.

Surprisingly, even though the majority of the respondents are below 24 years and known as a technologically knowledgeable generation, the level of motivation of the respondents is lower for online learning compared with face-to-face classes.

Reference:

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Xhelili, P., Ibrahimi, E., Rruci, E., & Sheme, K. (2021). Adaptation and Perception of Online Learning during COVID-19 Pandemic by Albanian University Students. *International Journal on Studies in Education*, *3*(2), 103–111. https://doi.org/10.46328/ijonse.49

Subjective fear of social inequality and its risks in the context of the Covid-19 pandemic in Lithuania

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Actuality

Social inequality is one of the key categories defining differences in the material well-being and opportunities of individuals in modern societies.

The different dimensions of inequality relate both to the structural determinants of an individual's well-being and access to resources such as income, education, health, and to the categories of gender, marital status, ethnicity, and class that define an individual's opportunities and life chances (Sen 1992; 1999). Objective measures of inequality are very important for analysing trends, but they do not reflect, how social inequality is experienced at the individual level (Smith, Huo 2014).

The COVID - 19 pandemic has highligted new issues of social inequalities: it exacerbated existing social inequalities between different socio-economic groups and expanded the list of vulnerable groups (Hawkins et al., 2020). The pandemic has also increased health inequalities.

The aim of this report is to discuss subjective fears and risks of social inequality; assess which groups of society were most vulnerable and concerned during the pandemic period.

Methods

The presentation is based on the national survey *Social Inequality and its risks in a time of pandemic* which was implemented in 2020 (1-21st of December) (N=1050).

Results

The survey data showed that COVID-19 (84.0%), poverty and social inequality (30.3%), health care (23.2%), taxes (19.0%) and unemployment (18.0%) were identified as the most worrying issues in Lithuania. In terms of personal situation, the main concern was that the coronavirus pandemic could affect the financial situation and put them at risk of losing their job (Figure 1).

One of the most vulnerable groups in the context of coronavirus was elderly people. In addition to medical causes, they are also affected by socio-economic factors such as loneliness, poverty and social exclusion. Lithuania is among the OECD Eastern Europe countries with the worst subjective assessment of older people's health. The country has the highest at-risk-of-poverty rate for people aged 65 and over (36 proc. in December 2020 according to Eurostat).

The population survey showed that respondents of retirement age would feel materially, physically and psychologically insecure in the case of illness. They were also more often than younger respondents to indicate increased health care costs since the beginning of coronavirus. The assessment of personal health care expenditures of all the participants of the survey can be seen in Figure 2).

Compared by age, respondents aged 60 and over (66,9 %) and respondents aged 30-39 (64,9 %) feel less safe in the case of illness. And respondents with lower education feel more insecure (62,5 %) than those with higher education (57,9 %).

Figure 1. Anxiety about the consequences of Covid-19

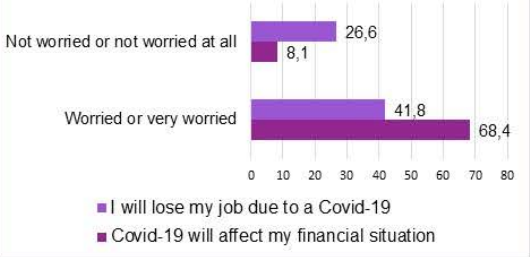
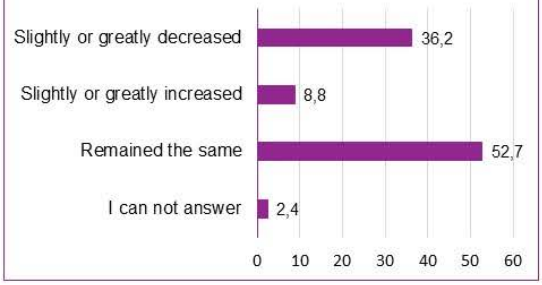


Figure 2. Personal health care expenditures



Conclusions

One of the key findings of the study is that, although in the context of the Covid-19 pandemic, health concerns are most prevalent, the pandemic affects the situation of different groups in society in variuos aspects and highlights social inequalities. The impact of the pancemic was felt most by socially and economically vulnerable social groups: the elderly, those with lower education, those suffering from chronic diseases, the hard-erned and the unemployed. Survey data showed that Covid-19, poverty and social inequality, health care, taxes and unemployment were indicated such the things the respondents were most worried about.

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Hawkins, R.B., Charles, E.J., Mehaffey, J.H. (2020). Socio-Economic Status and COVID-19 - Related Cases and Fatalities. *Public Health*, 189, pp. 129-134.

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TEACHING PHYSICS AT UNIVERSITY WITH INTERACTIVE H5P VIDEO EXPERIMENTS

J. Kosmaca[123], **J. Proskurins**[1]

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[2]UT Faculty of Social Sciences, Centre for Educational Technology
[3]UL Faculty of Physics, Mathematics and Optometry

Introduction

We discuss our experiences with teaching Physics to students at RSU and UL in the academic year 2021/22.

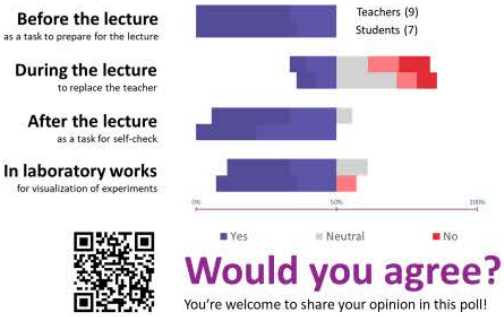
Studying online due to COVID-19 has been challenging for everyone involved in the teaching-learning process. **In the online Physics classes,** there were problematic parts, where hands-on lab work had to be replaced by video experiments. Video could provide learners with only limited information about the experiment, which might cause frustrating experiences for those failing to understand the task. Moreover, teachers, being unaware when someone fails the task remotely, couldn't even help them with feedback...

Student reflections confirmed that there were issues with the online lab works. Respondents of a questionnaire made at the end of the 1-st semester (RSU, Fall 2021) have ranked lab reports as the least clear component in the Medical Physics course, whilst it had been taught online due to pandemics. *Complex descriptions, not enough explanations, and help* were mentioned as reasons that made the lab work topics difficult to learn.

Our motivation to solve the issues with cognitive overload and limited feedback led to trying out new Edtech tools, such as interactive video.

What do students and instructors say...

Where could we use interactive videos?



Would you agree?

You're welcome to share your opinion in this poll!

Interactive video experiments have been tested with students (UL – Fall 2021; RSU – Spring 2022). They expressed positive attitudes towards H5P videos. Respondents of *post-hoc* surveys appreciated descriptions of the actions and objects appearing in the video, instructions, and explanations for the tasks, self-check questions. However, good video and audio quality seemed to be of more importance than the interactive component. The videos found various applications in both online and in-person classes (e.g., understanding the procedure prior hands-on).

Making a video experiment interactive

Interactivity has been added to existing video experiments using **H5P technology**, which is free, easy to use, **compatible with Moodle** and various devices (laptops & smartphones). In addition, the newly filmed experiments were pre-designed to be interactive.

Advantages of interactivity in a video experiment

Navigation hotspots

- *Hotspots enable **segmentation.***
- *Create **non-linear** scenario tasks, choose difficulty mode, and navigate back and forth between the experiment parts.*
- *Experimenters may **decide** what samples and in which order to measure.*

Instructions, annotations

- ***Integrated presentation** with instructions appearing at the right time and place reduces **cognitive load.***
- *Annotations may source **unlimited information** relevant to the experiment (to go into deeper details).*

Self-check questions

- ***You got it right!** Multiple-choice questions provide the learner with immediate feedback and **positive reinforcement**.*
- *Students can submit their answers to **show progress** and get graded in Moodle.*

Downsides of interactivity in a video experiment

- ***It can be too much!** Rich content is a risk of cognitive overload, so interactions must be carefully prescribed. Best to keep interactive video experiments short or segment them, e.g., using hotspots.*
- *From observations, video interaction might reduce peer interaction. Instructions and automated feedback in the video are **great for individual self-paced** learning; however, they must not come at the expense of natural group discussions.*

Conclusions

Interactive H5P video experiments have been welcomed by RSU and UL students and instructors.

Ongoing work is focused on designing new teaching materials. There is a space for improvement by using interactive content to facilitate student engagement and increase learning capacity to get a better user experience and overall satisfaction with the study process.

Acknowledgments: JK would like to thank colleagues at RSU DoP for the support and assistance with the creation of the new videos, professors at UT for guidance with the research ideas, students and instructors at RSU and UL for their important feedback on the video experiments.

The role of the World Health Organization in struggle against COVID19

Janis **Grasis**
Rīga Stradiņš University, Latvia

Keywords:

Objectives World Health Organization (WHO) was established 7 April 1948 – this is a date when we now every year celebrate as World Health Day. The objectives of this article are to analyze the role and influence of WHO in fight against COVID 19 virus: efectiveness of governance of WHO, how WHO memberstates overtakes WHO recomendations and what are the main problems for WHO to become even more efective as the main international actor in order to ensure the health of the inhabitants of our planet.

Materials and methods

According to the preamble to the Constitution of WHO, the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition. Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures. The main steakholders of WHO are: Ministries of Health, government agencies, other government departments at the national level; and also influencers like health partnerships, foundations, intragovernmental and nongovernmental organizations, civil society, media, professional associations, and WHO collaborating centres. As You see the main steakholders are very different with different interests, so it is not so easy to adopt decisions to satisfy all interests. Comparative and analytical research methods are used for this paper.

Results Recently the WHO has got a lot of critics in connection with COVID19, starting from US for failing to make necessary warnings in a timely manner, and for misleading information for countries on use of masks and also making "contradictory statements".

Conclusions. As United Nations agency, WHO can't function without the goodwill of the governments; the governments must enlarge financing of the WHO. We need a multinational institution composed of medical professionals who manage public health in the world.

Tiesības uz tiesu COVID-19 pandēmijas apstākļos

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Aktualitāte / Mērķis

Covid-19 pandēmija ieviesa gan tiesiska, gan praktiska rakstura korekcijas daudzās jomās. Tiesu sistēma nebija izņēmums. Attālinātas tiešsaistes tiesas sēdes un rakstveida process – procesuālie rīki, kas tika izmantoti, lai nodrošinātu tiesvedības nepārtrauktību. Tiesības uz taisnīgu tiesu ir Latvijas Republikas Satversmē nostiprinātas pamattiesības, kurām saturu piešķir likuma «Par tiesu varu» 3. panta otrā daļa – «Katrai personai ir garantētas tiesības, lai uz pilnīgas līdztiesības pamata, atklāti izskatot lietu neatkarīgā un objektīvā tiesā, tiktu noteiktas šīs personas tiesības un pienākumi vai pret to vērstās apsūdzības pamatotība, ievērojot visas taisnīguma prasības.» Tiesības uz taisnīgu tiesu ir absolūtas un nav ierobežojamas, to apliecināja arī COVID-19 infekcijas novēršanai veltītais tiesiskais regulējums. Vienlaikus diskusijas raisīja jautājums par rakstveida procesa pieļaujamības robežām un attālinātas tiešsaistes tiesas sēdes juridisko tvērumu. Pētījuma mērķis ir, izanalizējot tiesību uz tiesu tvērumu kopsakarā ar COVID-19 infekcijas ierobežošanas pasākumu tiesisko regulējumu, konstatēt attālinātas/tiešsaistes tiesas sēdes un rakstveida procesa izmantošanas pieļaujamības robežas, kas nepārkāptu tiesības uz tiesu.

Metodes

Pētījumā izmantoti tiesību aktu un zinātniskā literatūra. Pētījumā izmantotas vispārzinātniskās pētījuma metodes – analītiskā un loģiski - konstruktīvā. Tiesības normas analizētas, izmantotas tiesību normu interpretācijas metodes – gramatisko, vēsturisko, sistēmisko un teleoloģisko.

Rezultāti

1. Tiesiskajā regulējumā nav paredzēti apstākļi, pie kuriem valsts varētu neizpildīt savu pozitīvo pienākumu – nodrošināt tiesības uz tiesu.
2. Tiesības uz veselības aizsardzību un tiesības uz tiesu neatrodas vertikālās pakļautības attiecībās. Tās ir līdzvērtīgas tiesības, kas nodrošināmas vienai otru neizslēdzot.
3. Tiesību materiālais saturs jānošķir no šo tiesību realizācijas procesa.
4. Valstij ir tiesības pieņemt tiesisko regulējumu, kas maina tiesību uz tiesu nodrošināšanas procesu.
5. Tiesiskā regulējuma attīstības pamatā ir ne tikai sociālo attiecību attīstība, bet arī tehnoloģiju progress. Tieši tehnoloģiju process izraisīja tiesiskā regulējuma attīstību, paredzot procesuālajā tiesiskajā regulējumā e-lietu procesu.
6. COVID-19 pandēmijas laikā tiesības uz tiesu tika nodrošinātas, ievērojot nepieciešamību nodrošināt sabiedrības veselību, sabiedrības veselības nodrošināšanai, un samērojot faktiskās iespējas ar tiesību uz tiesu nodrošināšanu.

Secinājumi

1. Tiesības uz tiesu ir absolūtas tiesības un tiesiskai valstij ir pienākums tās nodrošināt jebkuros apstākļos.
2. Sociālās attiecības sabiedrībā nepastāv izolēti, izmaiņas viena veida attiecībās ietekmē citas. COVID – 19 pandēmija ietekmēja tiesvedības procesu.
3. Vērtējot pamattiesību ierobežošanas nepieciešamību un robežas, valstij ir tiesības vadīties no faktiskajiem apstākļiem, kādi pastāv sabiedrībā noteiktā laika posmā.
4. COVID -19 pandēmijas laikā grozījumi tiesvedības procesā pamatoti ar nepieciešamību aizsargāt cita veida tiesiskās attiecības – tiesības uz veselības aizsardzību.
5. Tehnoloģijas ļāva nodrošināt tiesvedības nepārtrauktību COVID - 19 pandēmijas laikā. Tehnoloģiju sniegto iespēju lietošana tiesvedībā nav uzskatāma par tiesību uz tiesu ierobežošanu. Tiesvedības forma nav tiešā cēloniskā sakarā ar tās saturu.
6. Tiesas procesos, kas norisinājās attālināti tiešsaistē vai rakstveidā, personām tika nodrošināta iespēja pilnā apmērā izmantot procesuālās tiesības, tādējādi nepārkāpjot tiesības uz tiesu.

Vai Covid 19 laikā var konstatēt Kriminālprocesa likuma piemērošanas problemātiku, izmeklēšanas darbību veikšanā, kad persona atrodas Latvijā un, kad persona atrodas ārvalstī?

AUTORI:

Liene Neimane (mag. iur.)
Zvērināta advokāte

Signe Bole (mag. iur.)
Juriste

NEIMANE & PARTNERS
ZVĒRINĀTU ADVOKĀTU BIROJS

MĒRĶIS:

2021.gada 9.oktobrī (prot. Nr.67 1.§) ar MK rīkojumu Nr.720, pamatojoties uz Civilās aizsardzības un katastrofas pārvaldīšanas likuma 4.panta pirmās daļas 1. punkta "e" apakšpunktu, likuma "Par ārkārtējo situāciju un izņēmuma stāvokli" 4.pantu, 5.panta pirmo daļu un 6. panta pirmās daļas 1. punktu un otro daļu, 7.panta 1.punktu un 8.pantu, Epidemioloģiskās drošības likuma 3.panta otro daļu visā Latvijas Republikas teritorijā tika izsludināta ārkārtēja situācija.
Līdz ar ārkārtējās situācijas izsludināšanu Latvijā ikvienam darba devējam bija jānodrošina attālinātā darba iespējas saviem nodarbinātajiem, ja viņu ikdienas pienākumu specifika to pieļauj. Attālinātais darbs ļauj samazināt ikdienas kontaktus, kas ir viens no ārkārtējās situācijas mērķiem un vienlaikus arī būtisks drošības pasākums saslimstības ierobežošanai.

Pētnieciskā darba mērķis ir atspoguļot konstatētās nepilnības Kriminālprocesa likuma izpratnē un piemērošanā, kā arī sniegt priekšlikumus, kas ļautu nākotnē vienkāršot Kriminālprocesa likumu un procesa virzītājam izmantot Kriminālprocesa likuma 14.pantā paredzētās tiesības uz kriminālprocesa pabeigšanu saprātīgā termiņā, kur procesa virzītājs izvēlas konkrētiem apstākļiem atbilstošo, vienkāršāko kriminālprocesa veidu un nepieļauj neattaisnotu iejaukšanos personas dzīvē un nepamatotus izdevumus.

METODES:

Pētījuma mērķa sasniegšanai tiks izmantota monogrāfiskā metode, tiks veidoti secinājumi, interpretējumi no pieejamās informācijas, datiem.
Lai sasniegtu pētījuma mērķi tiks veikta starptautisko un nacionālo tiesību normu analīze, vienveidības iespējamība tiesību normas piemērošanā, Kriminālprocesa likumā noteiktais mērķis var tikt sasniegts, izmantojot spēkā esošās normas atbilstoši notikušajai situācijai.

MĒRĶIS:

Ar 2020.gada 11.jūnija likumu „Grozījumi Kriminālprocesa likumā" Kriminālprocesa likuma 140.pants „Procesuālās darbības veikšana, izmantojot tehniskos līdzekļus" tika papildināts ar 7.1 daļu, saskaņā ar kuru šā panta 2.1, piektajā un septītajā daļā noteikto var neievērot, ja procesa virzītājam ir iespējams ar tehniskiem līdzekļiem pārliecināties par citā telpā vai ēkā esošās personas identitāti. Pirmstiesas procesā procesuālo darbību fiksē šā likuma 143.pantā noteiktajā kārtībā. Tieslietu ministrijas 2021.gada 1.februāra apkārtrakstā par Kriminālprocesa likuma 140.panta 7.1 daļas piemērošanu norādīts, ka saskaņā ar minēto tiesību normu procesa virzītājam nav uzlikts pienākums pārbaudīt, kur tieši atrodas persona, kurai jāpiedalās procesuālajā darbībā, līdz ar to procesa virzītājs var nezināt, ka persona atrodas citas valsts teritorijā procesuālās darbības laikā. Šādā situācijā par procesuālās darbības norises vietu uzskatāma vieta, kurā atrodas procesa virzītājs, un starptautiskās sadarbības joma netiek aizskarta. 2021.gada 16.februārī Senātā saņemts Latvijas Republikas ģenerālprokurora lūgums sasaukt Senāta Krimināllietu departamenta normas senatoru kopsapulci un apspriest jautājumu par Kriminālprocesa likuma 140.panta 7.1 daļas interpretāciju, jo Tieslietu ministrijas apkārtrakstā paustais viedoklis ir diskutabls. Lai nodrošinātu vienveidību tiesību normu piemērošanā, pamatojoties uz likuma „Par tiesu varu" 49.1 panta pirmo, otro un trešo daļu, Senāta Krimināllietu departamenta senatoru kopsapulce sniedza skaidrojumu. 2020.gada jūnijā Ģenerālprokuratūras prokurors pirmo reizi attālināti, izmantojot videokonferences režīmu, e-parakstu un portālu latvija.lv, pārbaudīja personas identitāti, izsniedza apsūdzību un veica procesuālās darbības ar apsūdzēto, kas saistībā ar ārkārtējo situāciju nevarēja ierasties Latvijā.

SECINĀJUMI:

Nodrošinot Kriminālprocesa likuma 1.pantā paredzēto mērķi, t.i. noteikt tādu kriminālprocesa kārtību, kas nodrošina efektīvu Krimināllikuma normu piemērošanu un kriminaltiesisko attiecību taisnīgu noregulējumu bez neattaisnotas iejaukšanās personas dzīvē, procesa virzītājam pandēmijas laikā tika ierobežotas tiesības, jo, lai ievērotu nepieciešamās drošības prasības, kā arī ārvalstī dzīvojošās personas iespēju piedalīties izmeklēšanas darbībās attālināti.

Vai ir nepieciešams identificēt personu pratinot to otro, trešo reizi. Kriminālprocesa likuma piemērotāji maz izmantoja Kriminālprocesa likumā pieņemto normu un tās izmantošana COVID-19 apstākļos nebija tik efektīva.

Kriminālprocesa likuma normu pielietojumam nebija tehniskas iespējas, prasmes un zināšanas, kā arī vienotas interpretācijas trūkums traucēja tā efektīvai izmantošanai.

2019.gada 2.aprīlī Latvijas Republikas Iekšlietu ministrija un Latvijas Republikas Tieslietu ministrija (turpmāk - puses), apzinoties savstarpējās sadarbības, regulāras komunikācijas un intensīvas informācijas apmaiņas nozīmi tiesiskuma stiprināšanā, izmeklēšanas veicināšanā un tiesvedības procesu pilnveidošanā: noslēdza sadarbības memorandu. Galvenie mērķi bija sekojoši:

- Veicināt tieslietu un iekšlietu informācijas sistēmu attīstību un modernizāciju, īstenojot e-lietas risinājumu ar mērķi elektronizēt procesu un mazināt slogu izmeklēšanas un iztiesāšanas stadijā;
- Pirmstiesas izmeklēšanas kvalitātes celšanas nolūkā stiprināt tiesībaizsardzības iestāžu amatpersonu profesionālās zināšanas un prasmes, veicot regulāru aktuālās informācijas, kā arī apmācību materiālu apmaiņu un tālāknodošanu tiesībaizsardzības iestāžu darbības jomā;
- Nodrošināt kompleksa un padziļināta kriminālprocesa izvērtējuma veikšanu, lai uz to balstītu konceptuālu vienošanos par izmeklēšanas institūta turpmāku attīstību;

Pandēmijas laikā izmeklēšana bija apgrūtināta, tās sloga mazināšanai netika izveidots vienots risināms mehānisms.

NEIMANE & PARTNERS
ZVĒRINĀTU ADVOKĀTU BIROJS

Working ability and functioning due to COVID-19, analysis of 2021 data

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The State Medical Commission for the Assessment of Health Condition and Working Ability, Latvia

Veselības un darbspēju ekspertīzes ārstu valsts komisija

Actuality / The Goal

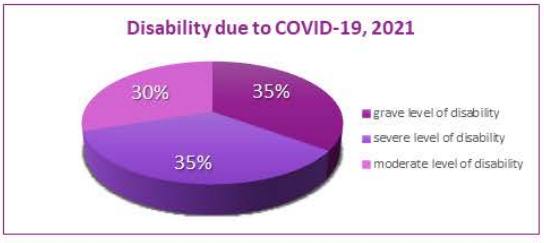
Data from systematic reviews collected by the European Center for Disease Prevention and Control show that up to 40% of COVID-19 cases are asymptomatic. Most symptomatic cases of COVID-19 are mild to moderate in severity. However, in some cases, manifestations occur in multiple organ systems after COVID-19 and full recovery may take up to six months.
Assessing the long-term effects of the disease on health status and ability to work is an important part of the state's social welfare system. Considering the new situation (COVID-19 pandemic), it is important to determine the possible amount of support needed. In order to determine and plan the support, it is also necessary to determine the degree of disability.
The aim of the study was to determine the long-term effects of post-COVID-19 syndrome on an individual's ability to work and functioning in Latvia by analyzing data from individuals who had been treated for 6 months or longer and who had long-term limitations in activities of daily living and ability to work.

Methods

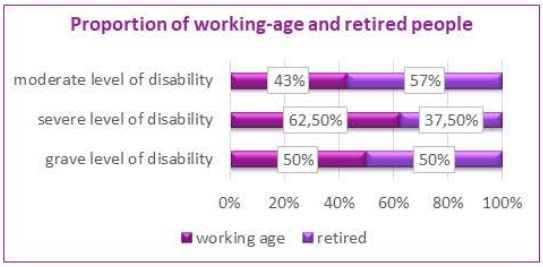
This retrospective, descriptive study included people with post-COVID-19 syndrome who had been continuously treated for more than 6 months in 2021 and had applied to the State Medical Commission for the Assessment of Health Condition and Working Ability (the Commission) for assessment of disability and work-ability.

Results

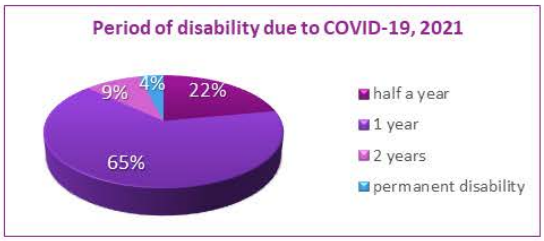
In Latvia, people with post-COVID-19 syndrome have applied to the Commission for an evaluation of their disability and functional limitations after a 6-month treatment period.
Between January 1, 2021, and December 31, 2021, 48 individuals were assessed for work disability and functional limitations.
26 (54%) were women and 22 (46%) were men. The mean age was 61.7 years. 23 individuals (48%) were found to be disabled, 22 (46%) had their period of temporary incapacity for work extended for more than 26 weeks to achieve full recovery, and 3 individuals had not used the entire applicable period of temporary incapacity for work.



Of the 23 individuals identified as having a disability, 35% (8) had a grave form of disability, 35% (8) had a severe disability, and 30% (7) had a moderate disability.



52% (12) were of working age and 48% (11) had reached the required age for retirement.
Of those of working age, 4 had lost 80-100% of their working capacity, 5 had lost 60-79% of their working capacity, and 3 had lost 25-59% of their working capacity. Overall, 52% of individuals with disability due to post-COVID-19 syndrome were found to have a significant loss of work ability.



The duration of disability was graded: 65% (15) for one year, 22% (5) for six months, 9% (2) for two years, and 4% (1) for life.
Long-term very severe or severe functional limitations were found in 70% of persons with disability due to post-COVID-19 syndrome.
The most important limitations were limited ability to work, self-care, and difficulty integrating into society.

Conclusions

1. Overall, nearly half of all individuals treated for post-COVID-19 syndrome for more than 6 months had significant long-term limitations in activities of daily living, ability to work, and/or social integration.
2. Of those treated for more than 6 months after COVID-19, a quarter of all individuals had a long-term loss of working capacity of 25-100%.
3. Over time, further studies are needed to determine the lasting effects of post-COVID-19 syndrome on people's ability to work and functioning.

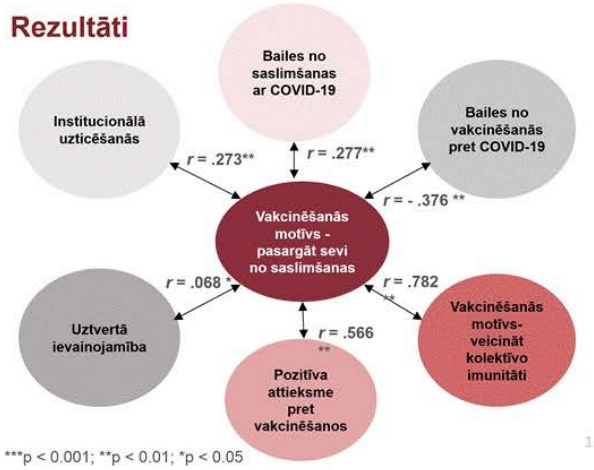
Ar vakcinēšanās motīvu pasargāt sevi no saslimšanas saistītie faktori Latvijas iedzīvotāju populācijā

Sanita Šuriņa, Kristīne Mārtinsone, Viktorija Perepjolkina
Rīgas Stradiņa Universitāte

Aktualitāte / Mērķis

Saskaņā ar Pasaules veselības organizāciju, vakcinēšanās pret COVID-19 ir efektīvākais veids, kā mazināt slimības izplatību. Neskatoties uz pierādīto vakcīnu pret COVID-19 efektivitāti un drošumu, daudzviet pasaulē, tostarp, arī Latvijā, vakcinēšanās pret COVID-19 ir noritējusi gausi. Jebkuras uzvedības pamatā ir motīvs. Kā liecina pētījumi, motīvs vakcinēties pret COVID-19, lai pasargātu sevi no saslimšanas ir saistīts ar vairākiem faktoriem.
Šī pētījuma mērķis bija noskaidrot ar motīvu vakcinēties pret COVID-19, lai pasargātu sevi no saslimšanas saistītos faktorus.

Rezultāti



Metodes

Pētījuma izlase: Reprezentatīva Latvijas iedzīvotāju izlase (N=1017) pēc administratīvi teritoriālā dalījuma vecumā no 18 līdz 75 gadiem, vidējais vecums 46,67 gadi (51,7% sievietes).
Procedūra: Dati tika ievākti 2021. gada septembrī, oktobrī.
Instrumentārijs: no VPP Interframe-LV kopējās aptaujas tika izmantota Institucionālās uzticēšanās skala (α = .71), Attieksmes pret vakcinēšanos skala (α = .92), Uztvertās ievainojamības skala (α = .64) un atsevišķi apgalvojumi: Vakcinēšanās motīvs, lai pasargātu sevi no saslimšanas, Vakcinēšanās motīvs, lai veicinātu kolektīvo imunitāti, Bailes no COVID-19, Bailes no vakcinēšanās pret COVID-19

Rezultāti

Pētījuma rezultāti atklāj - vakcinēšanās motīvs pasargāt sevi no saslimšanas statistiski nozīmīgi visciešāk ir saistīts ar vakcinēšanās motīvu veicināt kolektīvo imunitāti. Tātad – jo izteiktāks motīvs vakcinēties, lai pasargātu citus cilvēkus no saslimšanas un veicinātu kolektīvo imunitāti, jo augstāks motīvs vakcinēties, lai pasargātu sevi.
Tāpat, statistiski nozīmīga, cieša saistība pastāv starp vakcinēšanās motīvu pasargātu sevi no saslimšanas un pozitīvu attieksmi pret vakcinēšanos. Proti, jo pozitīvāka attieksme pret vakcinēšanos vispār, jo augstāks motīvs vakcinēties, lai pasargātu sevi.
Pētījuma rezultāti atklāj statistiski nozīmīgu, pozitīvu, bet vāju saistību starp bailēm no COVID-19 un vakcinēšanās motīvu pasargāt sevi. Kā arī statistiski nozīmīgu, pozitīvu, bet vāju saistību starp vakcinēšanās motīvu pasargāt sevi un institucionālo uzticēšanos.
Statistiski nozīmīga, pozitīva, bet ļoti vāja saistība pastāv starp uztverto ievainojamību un vakcinēšanās motīvu pasargāt sevi.
Savukārt bailes no vakcinēšanās pret COVID-19 ir statistiski nozīmīgi, negatīvi saistītas ar vakcinēšanās motīvu pasargāt sevi no saslimšanas. Taču, šī saistība ir ļoti vāja.

Secinājumi

No pētījuma rezultātiem varam secināt, ka visciešāk ar vakcinēšanās motīvu pasargāt sevi no saslimšanas ir saistīts motīvs vakcinēties, lai veicinātu kolektīvo imunitāti. Šāda sakarība norāda uz sabiedrības solidarizēšanās tendenci kopīgu grūtību pārvarēšanai. Tāpat, būtiski ņemt vērā attieksme pret vakcinēšanos vispār ciešo saistību ar vakcinēšanās motīvu pasargāt sevi no saslimšanas ar COVID-19. Ņemot vērā pakāpeniski pieaugošo sabiedrības pretestību vakcināciju programmām pasaulē kopumā, šeit iezīmējas nepieciešamība informēt, izglītot sabiedrību par vakcinācijas drošumu, efektivitāti un nepieciešamību, mazinot aizspriedumus un bailes.
Pētījuma rezultāti izgaismo arī valsts institūciju un mediju nozīmi pierādījumos balstītas informācijas izplatīšanā un komunikācijā ar visām sabiedrības grupām izmantojot dažādus informācijas kanālus un veidus, mazinot aizspriedumus un kliedējot nepatiesas informācijas radītās sekas, tādējādi veicinot vakcinācijas pret COVID-19 aptveri.
Uztvertā ievainojamība, jeb saslimšanas iespējamības novērtējums, tāpat kā bailes no COVOD-19 ir saistīti ar vakcinēšanās motīvu pasargāt sevi, taču šī sasistība nav ļoti cieša. Iespējams, šeit ir jāņem vēra fakts, ka COVID-19 izplatības sākuma periodā nebija informācija par slimības izplatību, smagumu un ietekmi. Taču, laika gaitā kļuva skaidrs, ka COVID-19, lai arī ar augstu infekciozitātes pakāpi, īpaši bīstams ir atsevišķām sabiedrības grupām.

ARIMA MODEL FOR COVID-19 CASE PREDICTION IN LATVIA

Nikita Stepanovs
Riga Stradiņš University, MF

Actuality / The Goal

Number of Covid-19 cases is an important epidemiological factor in policy making. It may be used to enforce/lift restrictions, also it may serve as an important prognostic indicator for the number of occupied beds in the hospitals.
Several attempts have been made to predict the number of Covid-19 cases in Latvia. SPKC released some prognoses which were inaccurate, explanations featured non-stochastic trend of Covid-19 cases (Fig.1. and 2) and high grade autocorrelations. This work is an attempt to tackle non-stochasticity problem and create model for Covid-19 cases outburst prediction in autumn-winter 2021/2022.

Methods

Daily data from SPKC regarding number of confirmed cases was obtained in csv format (2019-2022). Afterwards it was plotted and applied Dickey-Fuller test for stochasticity. P value of the test was >5%, which led to conclusion that data is not stochastic and is not suitable for prediction modelling.
At first, autocorrelation test was performed resulting in significance at value 30 (Fig.3).
Next, all datapoints were converted to logarithm. After, moving average value was subtracted from every datapoint logarithm value. Dickey Fuller test was again applied to modified dataset, results showed a stochastic time series.
Finally, data was fed into ARIMA model and the predicted time series was visualized together with actual data.

Results

Conversion of data to log and subsequent subtraction of moving average (30 days) allowed to successfully detrend series (DF test 1.5%). Now, the autocorrelation is significant at 15 days (Fig.4.). After detrending the data was fed into prediction model ARIMA. Visual inspection (Fig.7.) shows that model is good at predicting historic data. Besides it, residual plot is homogenous expect for beginning of 2019 and end of 2022 (Fig.5.). Author believes that in 2019 the number of cases was too low and in 2022 there was sudden spike; model had hard time predicting both outlier periods. Fig.6. displays that density is centered at zero, which is a quality sign of the used model.

Conclusions

Data provided by SPKC about the confirmed number of Covid-19 cases between 2019 and 2022 is non stochastic.
Conversion to log and subtraction of moving average (30 days) is able to successfully detrend series.
ARIMA model has a potential to be used as a main prediction model, although it is weak for outliers.

Fig.7. The main result. Y axis – (log and moving average difference), X – number of days. Red color is predicted, blue is original data.

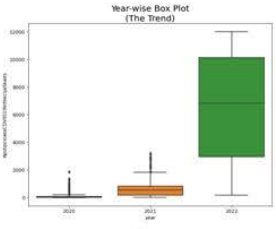


Fig.1.

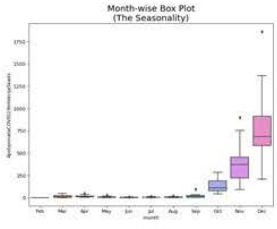


Fig.2.

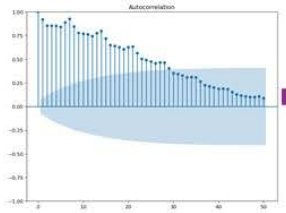


Fig.3.

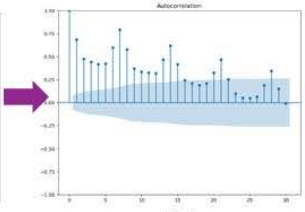


Fig.4.

Fig.3. on the left is original SPKC data on confirmed Covid-19 cases. The time series is non stochastic, ACF significant at 30 lags. Fig. 4. on the right is log of data and moving average difference (data was transformed). Time series became stochastic, ACF significant at 15 lags (2-fold reduction).

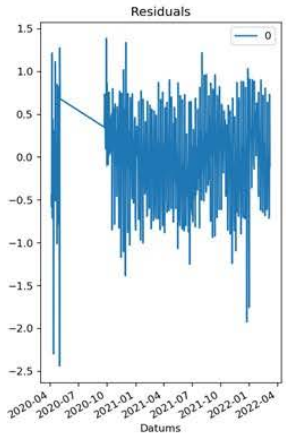


Fig.5.

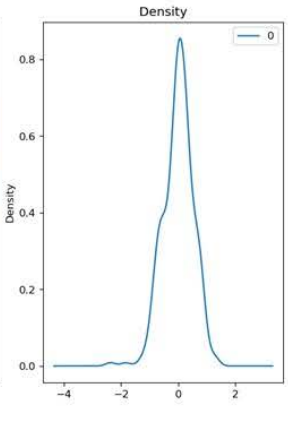


Fig.6.

Fig.5. on the left is model fit residual data. Fig. 6. on the right is density graph. It is centered at zero, which shows that data on confirmed Covid-19 cases was successfully detrended and model can be used for prediction.

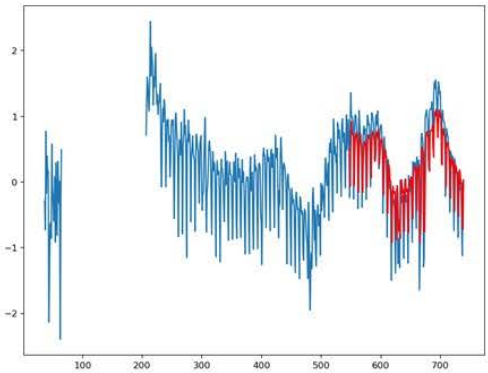


Fig.7. Red – predicted, blue – actual data

ARTS THERAPISTS' SELF-CARE STRATEGIES DURING THE COVID-19 PANDEMIC

Aija Ozola, Kristīne Mārtinsone
Rīga Stradiņš University

Actuality

With the increased hazards to healthcare professionals' health and well-being due to the Covid-19 pandemic self-care is highlighted as an ethical imperative. As stated by the World Health Organization (WHO, 2021), self-care and self-care interventions have played a critical role in individual, community and national responses to the Covid-19 pandemic.

According to the Oxford Living Dictionary (Self-care, n.d.), self-care refers to taking the action to preserve and promote one's own health and well-being, in particular during the periods of stress. In times of uncertainty self-care is one of the resources available to strengthen psychological resilience and promote one's mental health and well-being.

Self-care strategies can be characterized in terms of their importance and attainability. The importance and attainability interaction indicators (i.e., multiplication of the two) reveal the degree of effectiveness of self-care strategies.

Pandemic restrictions may have caused the gap between importance and attainability of professionals' self-care strategies (Ozola & Mārtinsone, 2021) and the reduced effectiveness of strategies. In the changing context new knowledge on arts therapists' self-care is needed to provide a theoretical basis for possible solutions to support professionals.

The aim of the study was to explore arts therapists' self-care strategies in comparison with those of the general population of Latvia during the Covid-19 pandemic.

Methods

Measures
Self-Care Strategies Questionnaire (Mārtinsone, Perepjolkina un Ruža, in press)

Sociodemographic questionnaire

Sample Inclusion/exclusion criteria:
respondents aged 18+
Latvian-speaking

N = 965
878 (91%) female, 87 (9%) male
age 18 to 76 (*M* = 42.83, *SD* = 13.13)

73 (8%) arts therapists,
892 (92%) professionals in other fields

Procedure Internet survey visidati.lv
March 2021 – January 2022

Results

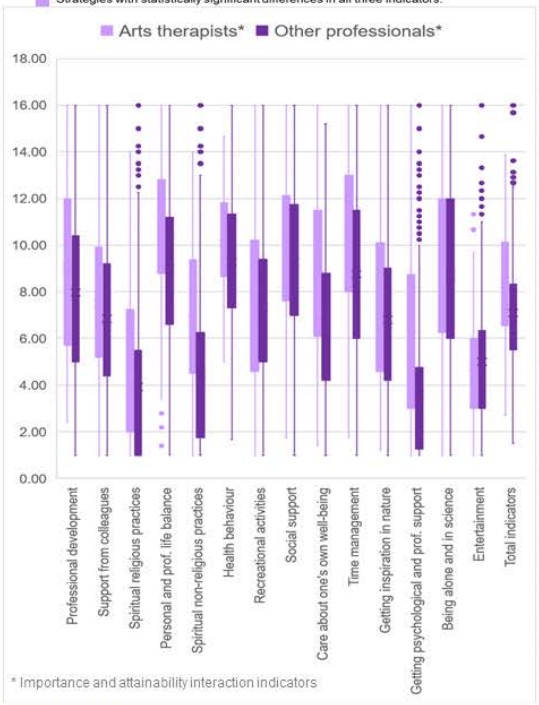
Seven out of 14 self-care strategies revealed statistically significant differences between arts therapists and other professionals in all three indicators, namely importance, attainability and their interaction (total interaction indicators' $U = 22918.50$, $p < 0.001$).

Personal and professional life balance, spiritual religious and non-religious practices, care about one's own well-being, time management, getting psychological and professional support, and being alone and in silence were the strategies more often assed higher by arts therapists.

Importance and attainability interaction indicators of arts therapists' and other professsionals' self-care strategies

Scale / activity	AT (n=73)	OP (n=892)	U
	Mdn	Mdn	
Professional development	8.80	7.80	27864.50*
Support from colleagues	6.80	6.40	28984.00
Spiritual religious practices	4.25	2.50	26007.00**
Personal and professional life balance	10.60	8.80	22946.00***
Spiritual non-religious practices	6.00	3.50	19283.50***
Health behaviour	10.00	9.33	26841.00*
Recreational activities	7.80	7.00	31365.00
Social support	10.00	9.50	28838.50
Care about one's own well-being	8.20	6.20	21610.00***
Time management	10.25	8.75	24671.50***
Getting inspiration in nature	7.40	6.40	29107.00
Getting psychological and professional support	6.25	2.50	16359.50***
Being alone and in silence	10.50	8.00	26254.50**
Entertainment	4.67	4.67	30668.50
Total indicators	8.37	7.07	22918.50***

N=965. * p < .05; ** p < .01; ***p < .001. AT – arts therapists, OP – other professionals.
Strategies with statistically significant differences in all three indicators.



Conclusions

In arts therapists' sample, there is a tendency for higher heterogeneity of highly-assessed self-care strategies in comparison with the general population.

Getting psychological and professional support should be encouraged as an imperative and a mandatory requirement of the arts therapist's profession.

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Attālinātā darba ietekme uz mazkustīgu uzvedību un veselības problēmu saasināšanos Covid-19 pandēmijas laikā

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[1] Medicīnas fakultāte, RSU [2] Aroda un vides medicīnas katedra, RSU

Aktualitāte / Mērķis

Šī pētījuma mērķis bija izpētīt attālinātā darba ietekmi sēdoša darba darbiniekiem uz mazkustīgu uzvedību un veselības problēmu saasināšanos Covid-19 pandēmijas laikā.

Metodes

Šķērsgriezuma pētījums tika balstīts uz anonīmu tiešsaistes aptauju. **104 biroja darbinieki** (42,7%, n=44 vīrieši; 57,3%, n=60 sievietes) brīvprātīgi atsauca atmiņā informāciju par mazkustīgu uzvedību un savu veselību pirms Covid-19 pandēmijas un tās laikā. Iegūtie dati tika analizēti ar Microsoft Excel un SPSS programmām.

Rezultāti

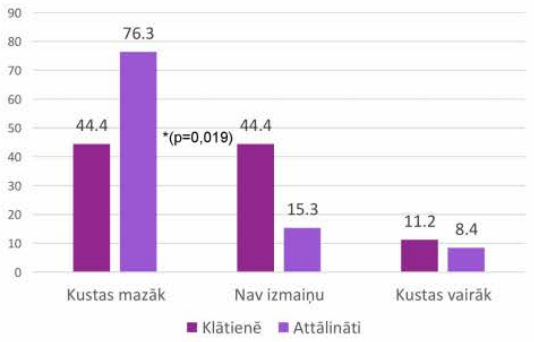
Covid-19 pandēmijas laikā attālināti strādāja **56,7%** (n=59) respondentu, savukārt klātienē strādāja **43,3%** (n=45).
76,3% (n=45) no tiem respondentiem, kuri Covid-19 pandēmijas laikā strādāja **attālināti**, atzīmēja, ka kustas mazāk, salīdzinot ar laiku pirms pandēmijas (1. att.). Tikmēr tikai **44,4%** (n=20) no tiem respondentiem, kuri Covid-19 pandēmijas laikā strādāja **klātienē**, atzīmēja, ka kustas mazāk.

Respondenti, kuri Covid-19 pandēmijas laikā strādāja **attālināti**, ziņoja, ka pirms Covid-19 pandēmijas pavadīja vidēji **3,51** stundas dienā no sava **brīvā laika sēdošā uzvedībā** (telefons, televizors, dators), bet Covid-19 laikā laikā sēdoša uzvedībā palielinājusies vidēji līdz **5,3** stundām dienā (2. att.). Savukārt, **klātienē** strādājošie ziņoja, ka pirms Covid-19 pandēmijas pavadīja vidēji **3** stundas dienā no sava brīvā laika sēdošā uzvedībā, bet Covid-19 pandēmijas laikā sēdošā uzvedības palielinājums ir neliels – vidēji līdz **3,8** stundām dienā.

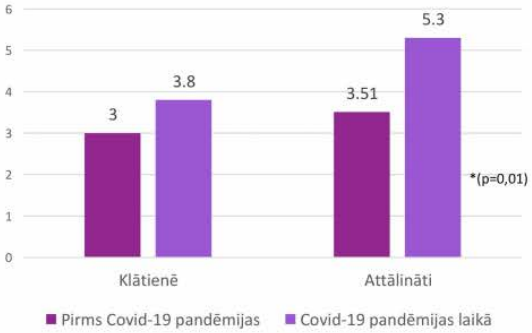
66,7% (n=39) no respondentiem, kuri Covid-19 pandēmijas laikā strādāja **attālināti**, novēroja **veselības problēmu saasināšanos** (3. att.). Bet tikai 33,3% (n=15) no respondentiem, kuri Covid-19 pandēmijas laikā strādāja **klātienē**, novēroja veselības problēmu saasināšanos.

74,5% (n=44) no tiem respondentiem, kuri Covid-19 pandēmijas laikā strādāja attālināti, novēroja **svara pieaugumu** (4.att.). Salīdzinājumam, tikai **55,6%** (n=25) no tiem respondentiem, kuri Covid-19 pandēmijas laikā strādāja klātienē, novēroja svara pieaugumu.

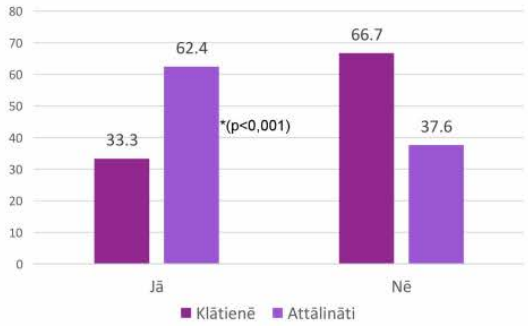
Respondentiem, kuriem darbs Covid-19 pandēmijas laikā bija attālināti, **ĶMI** pirms Covid-19 pandēmijas bija vidēji **24,85** (kg/m^2), savukārt Covid-19 pandēmijas laikā palielinājies vidēji līdz **28,13** (kg/m^2). Klātienē strādājošajiem ĶMI pirms Covid-19 pandēmijas bija vidēji **24.22** (kg/m^2), bet Covid-19 pandēmijas laikā palielinājums ir neliels – vidēji līdz **25,98** (kg/m^2).



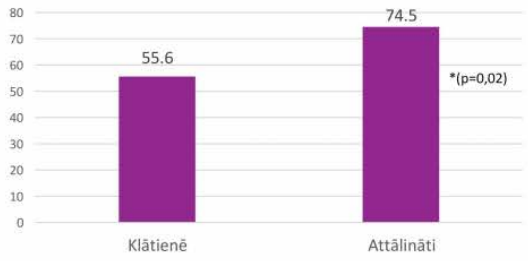
Att.1. Fiziskās aktivitātes (kustība) (%) Covid-19 pandēmijas laikā



Att.2. Vidējais laiks dienā (h) no brīvā laika, kas pavadīts mazkustīgā uzvedībā Covid-19 pandēmijas laikā



Att.3. Veselības problēmas (%), kas saasinājušās Covid-19 pandēmijas laikā



Att.4. Svara pieaugums (%) Covid-19 pandēmijas laikā

Secinājumi

- Attālinātajam darbam ir vērā ņemama ietekme uz mazkustīgas uzvedības palielināšanos un veselības problēmu saasināšanos Covid-19 pandēmijas laikā.
- Ir novērotas statistiski nozīmīgas atšķirības starp tiem sēdoša darba darbiniekiem, kuri Covid-19 pandēmijas laikā strādāja attālināti un tiem, kas strādāja klātienē.
- Attālināti strādājošie darbinieki Covid-19 pandēmijas laikā biežāk ziņoja par kustību samazināšanos, biežāk novērojuši veselības problēmu saasināšanos un svara pieaugumu, kā arī pavadīja vidēji dienā ilgāk laika sēdošā uzvedībā.

Attieksmi pret COVID-19 vakcināciju prognozējoši faktori nevakcinēto grupā veselības aprūpes iestādēs Latvijā (2021. gada maijs)

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Jeļena Koļesņikova, Dr.psych., RSU Psiholoģijas laboratorijas vadītāja, docente
Inga Millere, Dr.med., RSU Sabiedrības veselības un sociālās labklājības fakultātes dekāne, profesore

Aktualitāte / Mērķis

COVID-19 vakcinācija tiek uzskatīta par efektīvāko metodi pandēmijas ierobežošanai. 2020. gada 28. decembrī Latvijā tika uzsākta vakcinācija veselības aprūpes darbiniekiem, tomēr vēlme vakcinēties tika vērtēta kā nepietiekoša. 2021. gada maijā, no 1444 aptaujātajiem veselības aprūpes iestādēs strādājošajiem, pret COVID-19 nebija vakcinēti 24 %, no tiem pieņemoša attieksme pret vakcināciju bija 11 %, nogaidoša – 49,9 %, bet noraidoša – 38,6 %.
Pētījuma mērķis bija noskaidrot, kādi faktori prognozē attieksmi pret vakcināciju nevakcinētiem veselības aprūpes iestāžu darbiniekiem.

Metodes

Izlase: Pētījumā piedalījās 355 nevakcinēti respondenti no dažādām veselības aprūpes iestādēm Latvijā. Respondenti bija vecumā no 19 līdz 71 gadiem (M = 41,21; SD = 12,53). 93 % no respondentiem bija sievietes. 82 % bija ieguvuši vismaz bakalaura grādu. Lielāko īpatsvaru veidoja māsas (34 %) un administrācijas darbinieki (26 %) (skat. 1. un 2. att.).
Instrumentārijs: Pētījuma ietvaros tika izveidota aptauja "Veselības aprūpes iestāžu darbinieku attieksme vakcinācijai pret COVID-19" (Lielšvāgere-Endele, 2021).
Procedūra: Aptauja tika veikta elektroniski vietnē visidati.lv, saskaņojot ar katras iestādes vadību, laika posmā no 2021. gada marta līdz 2021. gada maijam.
Tika saņemta RSU pētījumu ētikas komitejas atļauja Nr. 22-2/205/2021

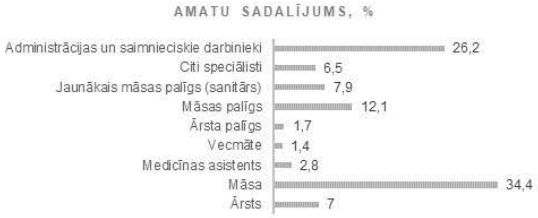
Datu apstrāde un analīze: Datu apstrādei tika izmantots IBM SPSS Statistics 27 un veikta soļu regresijas analīze (*multiple regression*).

Rezultāti

Regresijas analīze tika veikta, lai noskaidrotu, kādi faktori prognozē noraidošu attieksmi pret vakcināciju. Attieksme pret vakcināciju (pieņemoša, nogaidoša, noraidoša) analīzē tika iekļauta kā atkarīgais mainīgais, kā neatkarīgie mainīgie bija faktori («Pārliecība, ka vakcinācija pasargā sevi un citus», «Raizes par vakcīnas izgatavošanas ātrumu», «Pārliecība, ka indivīds neatrodas riska grupā», «Neuzticība speciālistu rekomendācijām»), kuri prognozē attieksmi pret vakcināciju. Regresijas analīzes pirmā soļa modelī iegūtie rezultāti parāda, ka nevakcinētiem dalībniekiem *Pārliecība, ka vakcinācija nepasargā sevi un citus* ļauj ($R2 = 0,30$, $F(1,154) = 66,14$, $p < 0,00$) izskaidrot 30 % no noraidošas attieksmes pret vakcināciju rādītājiem. Otrajā solī papildus *Raizes par vakcīnas izgatavošanas ātrumu* statistiski nozīmīgi uzlabo prognozēšanu ($\Delta R2 = 0,39$, $F(2,154) = 49,347$, $p < 0,00$). Trešajā solī papildus *Pārliecība, ka indivīds neatrodas riska grupā* statistiski nozīmīgi uzlabo prognozēšanu ($\Delta R2 = 0,44$, $F(3,154) = 40,26$, $p < 0,00$). *Neuzticība speciālistu rekomendācijām* ceturtajā solī statistiski nozīmīgi uzlabo prognozēšanu ($\Delta R2 = 0,48$, $F(4,154) = 33,92$, $p < 0,00$), kopumā izskaidrojot 48 % no noraidošas attieksmes pret vakcināciju rādītājiem (skat. 3. att.).

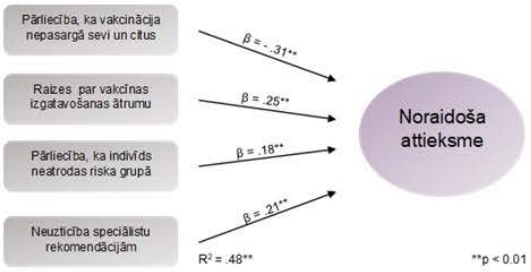
Sociāldemogrāfisko rādītāju raksturojums

1. attēls. Izglītības līmeņu sadalījums.



2. attēls. Amatu sadalījums.

Regresijas analīzes rezultāti



3. attēls. Regresijas analīzes rezultāti (4. solis).

Secinājumi

Regresijas analīze atklāja, ka nevakcinētiem veselības aprūpes iestāžu darbiniekiem Latvijā, 48 % no noraidošas attieksmes pret vakcināciju izskaidro šādi faktori: pārliecība, ka vakcinējoties nevar pasargāt sevi un citus, pastāvošas raizes par vakcīnas izgatavošanas ātrumu, pārliecība, ka respondents neatrodas riska grupā un neuzticība veselības aprūpes speciālistu rekomendācijām. Tātad, jo izteiktāki ir šādi faktori, jo vairāk iespējams sagaidīt, ka viņam būs noraidošāka attieksme pret COVID-19 vakcināciju.
Aptaujas veikšanas laikā (2021. g. maijs), vakcinācija pret COVID-19 bija rekomendēta, bet pēc dažiem mēnešiem vakcinācija (vai pārslimošanas fakts) tika noteikta kā obligāta prasība, lai turpinātu darbu veselības aprūpes iestādēs. Lai gan informācija par vakcīnu efektivitāti tiek atjaunota un mainās, kas, iespējams, ietekmē arī attieksmi pret vakcināciju, šobrīd trūkst informācija par to, cik daudz no veselības aprūpes iestādēs strādājošajiem ir gatavi vakcinēties arī turpmāk un kāda ir viņu attieksme pret vakcināciju šobrīd.
Pētījuma rezultāti var būt noderīgi, veidojot informatīvās kampaņas, lai veicinātu veselības aprūpē strādājošo pieņemošāku attieksmi pret vakcināciju, ņemot vērā mērķauditorijas specifiku.

Awerness and attitudes towards COVID-19 and Influenza vaccination in pregnant women and young mothers in Latvia

Linda Ābola, Riga Stradiņš University, 6th year Medical student

Actuality / The Goal

Vaccination of pregnant women has always been a topical issue in Latvia. In the last couple of years, influenza has been joined by the even more serious Covid-19 infection. Both infections increase the risk of hospitalising pregnant women and their presence in the intensive treatment unit during pregnancy. The influenza and Covid-19 infection during pregnancy are associated with such adverse outcomes of pregnancy and newborns as spontaneous abortion, premature birth, and the risk of maternal and neonatal deaths. In order to protect a pregnant woman and a newborn from severe infections, it is recommended that pregnant women receive influenza and Covid-19 mRNS vaccines.

The aim of the study was to clarify the reasons for positive and negative attitude towards vaccination among pregnant women and new mothers in Latvia

Methods

- A descriptive, cross-sectional study by conducting an anonymous online survey.
- Respondents were selected using the accessibility (convenience) sampling method. A total of 111 pregnant women and 177 new mothers receiving primary care in Latvia were surveyed.
- The study data were collected between 28 September 2021 and 28 October 2021.
- The survey was created on the visidati.lv website and distributed on the social media platforms Instagram, Facebook and WhatsApp.
- The data collection procedure was carried out in accordance with ethical principles (in accordance with the Declaration of Helsinki), guaranteeing the anonymity of respondents.

Results

More than 1/3 of the respondents have a positive attitude towards influenza and Covid-19 vaccination during pregnancy and lactation period (see Table 1).

68.5% of pregnant women and 31.5% of new mothers have gotten the Covid-19 vaccination and 22.5% of pregnant women and 25.6% of new mothers have received the influenza vaccination. 8.6% of pregnant women were still planning to receive the Covid-19 vaccine during their pregnancy and 48.6% were planning to do that during their breast-feeding period. No vaccination was planned by 42.9% of pregnant women. 25.5% of new mothers planned to be vaccinated during the breast-feeding period, while a majority of 74.5% did not plan to receive the Covid-19 vaccine.

According to the survey, family practioners and gynecologists in Latvia do not necessarily recommend that pregnant women receice the influenza and Covid-19 vaccination (see Table 2).

The survey participants identified scientific articles and studies as positive factors to decide in favour of vaccination, as well as advice from the gynecologist, family practioner and others close to them. Simultaneosly, vaccination during pregnancy and lactation period is discouraged by general fears and ignorance about the effects of the vaccine on maternal and child health as well as conflicting information provided by scientific articles, medical staff, and imposition of vaccination (see Table 3).

The results of the Fisher's exact test showed that there was a statistically significant corellation between the place of residence and the decision to receive vaccination (Fisher's exact test = 17.712, p = 0.049).

Attitudes of respondents towards influenza vaccination and Covid-19 infection during pregnancy and lactation (N = 288)

Table 1

	influenza vaccine	Covid-19 mRNS vaccine
I am in favor of vaccination during pregnancy	37,60%	30,60%
I am against vaccination during pregnancy	17,10%	14,50%
I am in favor of vaccination while breastfeeding	37,20%	34,10%
I am against vaccination during breastfeeding	8,10%	8,80%
I am in favor of vaccination after breastfeeding	-	12%
Total number of responses	484	543

Responses from respondents to the exchange of information on influenza and Covid-19 vaccination during primary care (N = 288)

Table 2

	influenza vaccine	Covid-19 mRNS vaccine
The GP* offered / informed	20,8%	18%
The GP* did not offer / inform	26,4%	30,4%
The gynecologist offered / informed	29,6%	27,7%
The gynecologist did not offer / inform	23,1%	23,9%
Total number of responses	432	451

*GP - General practitioner

Positive and negative effects on the choice of vaccination against influenza and Covid-19 infection during pregnancy and lactation.

Table 3

	positive effects	negative effects
Influence of another person (family member, friends, acquaintances)	16,7%	7%
Different opinions in the media	5,7%	14%
GP* recommendations	11,8%	3,5%
Gynecologist's recommendations	16,7%	2,6%
Social media - facebook, Instagram	6,5%	0%
Articles / research	32,8%	19,3%
General fear	-	20,2%
Ignorance	-	18,4%
Other	9.8%	14,9%
Total number of responses	491	114

*GP - General practitioner

Conclusions

1. A large proportion of the pregnant women and new mothers surveyed are in favour of influenza and Covid-19 vaccination.
2. Pregnant women and new mothers do not receive sufficiently complete information from family practioners and gynecologists in Latvia on the Covid-19 and influenza vaccine.
3. The study confirmed the hypothesis that the negative attitude towards the Covid-19 and influenza vaccination during pregnancy was caused by ignorance about the effects of the vaccine on the course and outcome of pregnancy, as well as fears about the health of the expected child.
4. Respondents living in Riga, Pierīga (the suburban zone surronding Riga) and other major cities of Latvia have a more positive attitude towards vaccination.
5. During the autumn of 2021 period, the percentage of those who had received the Covid-19 vaccine is higher than that of influenza among the respondents.

Changes in the QMNC index in Latvia during the COVID-19 pandemic

E. Pumpure [1,2], D. Jakovicka [3], I. Mariani [5], A. Vaska [3], G. Jansone-Šantare [1,2], A. R. Knoka [3], K. P. Vilcāne [4], M. Lazzerini [5], B. Covi [5], E. Pessa Valente [5], D. Rezeberga [1,2]

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Actuality / The Goal

In 2016 the World Health Organization (WHO), with the help of a group of different types of experts, set standards for improving maternal and newborn quality of care in healthcare facilities. By implementing their use in health facilities, positive childbirth experiences might be increased [1,2].
Since no studies have been conducted so far using the WHO Standards as a foundation for the analysis in Latvia, the goal was to investigate the quality of maternal and newborn care (QMNC) around the time of childbirth during the COVID-19 pandemic in Latvia from the mothers perspective.

Methods

Women 18 years of age or older, who gave birth in Latvia from March 1, 2020, to October 28, 2021, were invited to participate in an online questionnaire including 40 WHO Standard-based Quality measures.
The questionnaire included three domains of the WHO Standard: provision of care (10 questions), the experience of care (10 questions), availability of human and physical resources (10 questions), and the additional domain of organizational changes related to the COVID-19 pandemic (10 questions). The 40 key indicators contributed to a composite quality of maternal and newborn care (QMNC) Index (scoring from 0 to 100), developed as a complementary synthetic measure of QMNC, with higher scores indicating higher adherence to WHO Standards.
Data was collected using a structured validated online questionnaire based on the WHO Standards.
Descriptive and multivariate quantile regression analyses were performed. The QMNC Indexes were presented as median and interquartile ranges (IQRs) and plotted by year of birth (kernel density).
The study was approved by the Riga Stradins University Research Ethics Committee in Latvia (22-2/140/2021 16.03.2021).

Results

2079 women participated in the study. 743 gave birth in 2020, of them, 648 had vaginal delivery, and 185 had cesarean section. 1080 women gave birth in 2021, 979 had vaginal delivery and 226 had cesarean section.

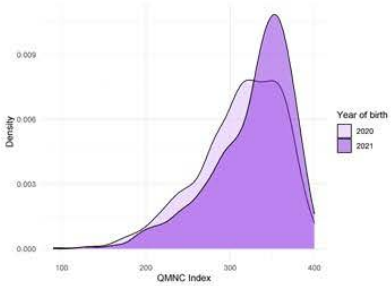
The QMNC Indexes differed by subdomains ($p<0.001$) with a median Index for reorganization for provision of care 85.0 (IQR 75.0, 90.0); experience of care 85.0 (IQR 70.0, 95.0); availability of physical and human resources 70.0 (IQR 55.0, 80.0); reorganizational changes due to COVID-19 of 90.0 points (IQR 80.0, 100.0). The total QMNC Index, as well as the QMNC Index in each of the four subdomains, were significantly higher in 2021 compared to 2020 ($p<0.001$).
Multivariate analyses highlighted a significantly lower QMNC index for the year 2020 compared to 2021.

Conclusions

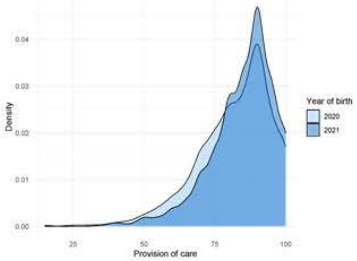
This study that investigated QMNC in Latvia showed important gaps in the QMNC perceived by mothers, while observing a slight increase in quality in 2021. The QMNC index should be interpreted in combination with the complete set of indicators.
Strategies to improve mothers and newborns health care should be introduced as soon as possible. Routine monitoring and comparing all domains over time should be implemented.

Acknowledgements
We would like to thank women who took time to complete this survey.
We would like to thank Riga Stradins University and all professional organizations who helped with promotional activities and to thank the IMAgiNE EURO study group for their assistance in developing this project.

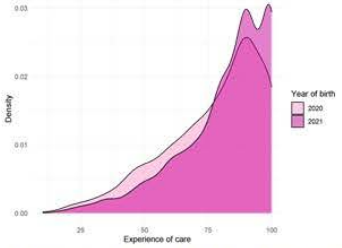
Total QMNC index



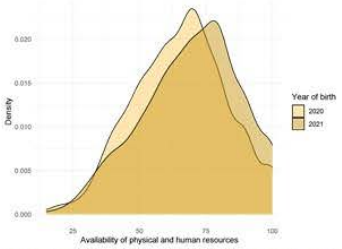
Subdomain of provision of care



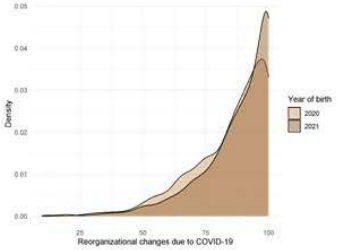
Subdomain of experience of care



Subdomain of availability of physical and human resources



Subdomain of reorganizational changes due to COVID-19



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[1] World Health Organization. Standards for improving quality of maternal and newborn care in health facilities [WHO website]. 2016. https://cdn.who.int/media/docs/default-source/mca-documents/advisory-groups/quality-of-care/standards-for-improving-quality-of-maternal-and-newborn-care-in-health-facilities.pdf?sfvrsn=3b364d8_2. Accessed October 15, 2021.
[2] Dencker A, Nilsson C, Begley C, Jangsten E, Mollberg M, Patel H, et al. Causes and outcomes in studies of fear of childbirth: A systematic review. *Women and Birth : Journal of the Australian College of Midwives*. 2019;32:99–111. https://doi.org/10.1016/J.WOMBI.2018.07.004

Comparison of the emergency medical assistance workload during pandemic years in relation to atrial fibrillation in Latvia

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Actuality / The Goal

Atrial fibrillation is the most common arrhythmia in the world. It occurs 2-4% of the world population [1]. The incidence of atrial fibrillation increases every year. Paroxysmal atrial fibrillation occcurs more than 1/3 of all hospitalized patients with arrhythmia [2]. Global pandemic of Covid-19 has increased development of the risk factors (obesity, reduced physical activity, smoking, alcohol consumption, junk food etc.). In view of all the above, comparison of the emergency medical assistance workload during pandemic years in relation to atrial fibrillation has changed.

The goal of this study is to compare the emergency medical assistance workload during pandemic years in relation to atrial fibrillation.

Methods

- This was retrospective and descriptive study.
- The statistical data were collected from emergency medical assistance data base.
- The study statistical data were collected about year 2019, 2020 and 2021.
- The study statistical data were selected by motive ''Heart rhythm disorders''. In year 2019 there were 7465, in year 2020 8030 and in year 2021 9638 emergency calls.
- From these emergency calls the main data were selected by diagnosis ''Paroxysmal atrial fibrillation''.
- All statistical data were analysed using MS Excel, MS Word and IBM SPSS 27.
- All statistical data from data basis has been anonymized.

Results

Paroxysmal atrial fibrillation - in year 2019 there was 13.2% (n=990) from all emergency calls of ''Heart rhythm disorders'', in year 2020 7.8% (n=627), in year 2021 7.7% (n=745). In detail (see Diagram 1):

- In year 2019 there were 9.3% (n=695) females and 3.9% (n=295) males.
- In year 2020 there were 5.6% (n=453) females and 2.2% (n=174) males
- In year 2021 there were 5.7% (n=547) females and 2.0% (n=198) males.

Comparing diagnosis of paroxysmal atrial fibrillation in all population (see Diagram 2):

- In year 2019 there were 70% (n=695) females and 30% (n=295) males.
- In year 2020 there were 72% (n=453) females and 28% (n=174) males.
- In year 2021 there were 73% (n=547) females and 27% (n=198) males.

In year 2019 the mean age of the population was 72.66 (±11.62) by diagnosis of paroxysmal atrial fibrillation, in year 2020 71.15 (±12.78), in year 2021 71.96 (±12.23). In detail (see Diagram 3):

- The mean age of the female population: in year 2019 74.79 (±10.23), in year 2020 74.81 (±9.83), in year 2021 74.50 (±10.58).
- The mean age of the male population: in year 2019 67.65 (±13.08), in year 2020 61.60 (±14.56), in year 2021 64.94 (±13.69).

There was a statistically significant correlation between the age of patient and the diagnosis of paroxysmal atrial fibrillation and among all percentage comparison. ($p<0.05$)

Diagram 1

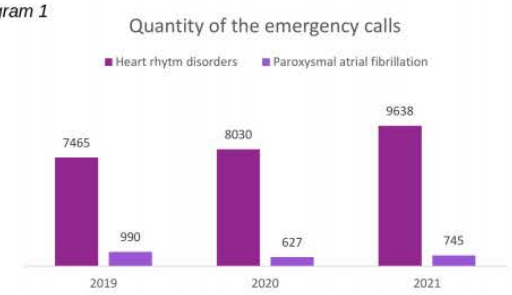


Diagram 2

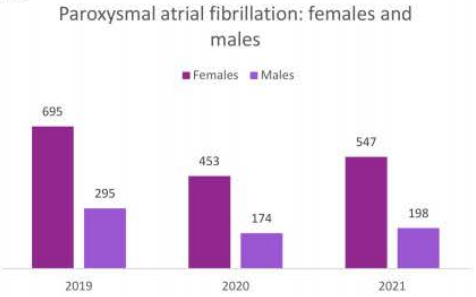
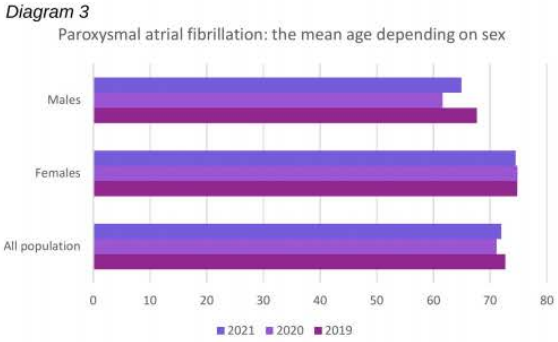


Diagram 3



Conclusions

- The emergency calls by motive ''Heart rhythm disorders'' has increased during pandemic years comparison to one year before pandemic of Covid-19 (in year 2019 – 7465, 2020 – 8030, 2021 – 9638).
- The emergency calls by diagnosis ''Paroxysmal atrial fibrillation'' has decreased during pandemic years comparison to one year before pandemic of Covid-19 (in year 2019 – 990, 2020 – 627, 2021 – 745).
- The mean age of the population by diagnosis of paroxysmal atrial fibrillation has decreased during pandemic years comparison to one year before pandemic of Covid-19 (in year 2019 – 72.66 (±11.62), 2020 – 71.15 (±12.78), 2021 – 71.96 (±12.23)).
- The mean age of the female by diagnosis of paroxysmal atrial fibrillation has increased during first pandemic year but decreased during second pandemic year (in year 2019 – 74.79 (±10.23), 2020 – 74.81 (±9.83), 2021 – 74.50 (±10.58)).
- The mean age of the male by diagnosis of paroxysmal atrial fibrillation has decreased during pandemic years (in year 2019 – 67.65 (±13.08), 2020 – 61.60 (±14.56), 2021 – 64.94 (±13.69)).
- Global pandemic of Covid-19 has affected the mean age of the population by diagnosis of paroxysmal atrial fibrillation.

[1] ESC Clinical Practice Guidelines, 2020 Guidelines for Management of Atrial Fibrillation, 20 Aug 2020
[2] Benjamin E.J., Virani S.S., Callaway C.W., et. al.: Heart disease and stroke statistics-2018 update: a report from the American Heart Association. Circulation 2018; 137: pp. e67-e492

Correlation of self - esteem level and emotions experienced in the work environment at the beginning of the Covid - 19 pandemic of health care workers in Latvia.

Authors: Romāns Beskrovnijs, Laura Valaine, Gunta Ancāne, Ģirts Briģis

Actuality / The Goal

During Covid-19 pandemic health care workers (HCW) are exposed to increased workload and stress in the work environment that could lead to mental health problems. Self-esteem can be a protective factor of mental health problems.

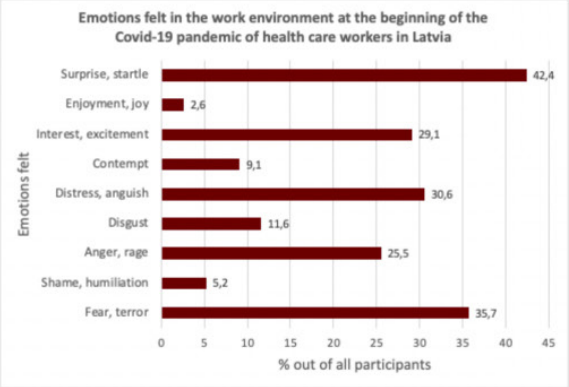
Aim of the study is to assess gender differences in correlation between self-esteem levels and emotions experienced in the work environment among health care workers (HCW) during the first Covid-19 wave in Latvia.

Methods

A quantitative cross-sectional study in the population of HCW in Latvia was made in April-June 2020. In the study 844 HCW participated. Self-esteem was assessed using the Rosenberg Self-Esteem Scale. Felt emotions (from Tomkins nine affect theory) were detected by the question: What emotions do you feel in the work environment during Covid-19 pandemic? Data were analysed using SPSS 25.0 using Pearson's correlation coefficient.

Results

From 844 HCW 710 (84.1%) were women. Age median for all participants- 40 (IQR 29 - 54).
Rosenberg`s self-esteem test median - 32 (IQR 28-36), mean 31.4 SD 5.6.
Among all participants statistically significant, negative, weak correlations were found between self-esteem score and shame, humiliation(Rs=-0,129, p<0,001); distress, anguish (Rs=-0,113, p<0,001); contempt (Rs=-0,100, p<0,004).



Gender differences in correlation between self-esteem and felt emotions were found- statistically significant, negative, weak correlations were found in female participant group between self-esteem score and shame, humiliation (Rs=-0,125, p<0,001); distress, anguish (Rs=-0,123, p<0,001); contempt (Rs=-0,100, p<0,008); disgust (Rs=-0,122, p<0,001); anger, rage (Rs= -0,118, p<0,002); among men no statistically significant correlation between self-esteem and felt emotions were found.

Conclusions

Women with lower self-esteem experience more unpleasant(negative) emotions, but with higher self esteem - more pleasant(positive) emotions. In the men population no statistically significant correlation between self-esteem and experienced emotions were found.

COVID-19 pandēmijas ietekme uz ergoterapijas studentu garīgo veselību un nodarbju līdzsvaru

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Aktualitāte

Ergoterapeiti ir speciālisti, kuri pārzin nodarbju līdzsvara (indivīda subjektīva sajūta par atbilstošu nodarbju daudzumu viņa ikdienā un līdzsvarotu attiecību starp dažādām nodarbēm pēc nolūka) ietekmi uz cilvēka dzīves kvalitāti un labsajūtu. Tādēļ ir svarīgi izpētīt, kā valstī ieviestie epidemioloģiskās drošības pasākumi ietekmē ergoterapijas studentu ierastās dzīves gaitu. Tas var dot iespēju atrast preventīvus risinājumus un ergoterapeitiem sniegt ieteikumus nodarbju līdzsvara saglabāšanai, tādējādi mazinot veselības un labklājības pasliktināšanās risku studentu vidū.

Mērķis

Noskaidrot COVID-19 pandēmijas un valstī noteikto ārkārtas situācijas ieviesto ierobežojumu lomu nodarbju līdzsvarā, kā arī to saistību ar trauksmi un apmierinātību ar dzīvi Rīgas Stradiņa universitātes ergoterapijas studentu vidū 2021. gadā.

Metodes

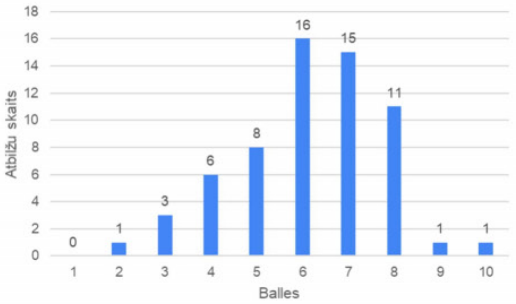
Pētījuma dizains: jaukta tipa, neeksperimentāls, aprakstošs.

Pētījuma dalībnieki: Rīgas Stradiņa universitātes studiju programmas «Ergoterapija» 1. – 4. studiju gada 62 studenti, kuri piekrita dalībai pētījumā.

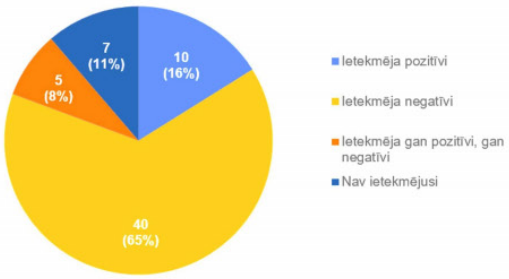
Datu apstrāde un analīze: aptaujas – *Microsoft Excel Office* un *IBM SPSS Statistics 27 version*; fokusgrupu diskusiju satura analīze – deduktīvā metode.

Datu iegūšana:

- elektroniskā aptaujas anketa *Google Forms* vietnē ar jautājumiem par sociāldemogrāfiskiem datiem;
- novērtēšanas instrumenti - Aktivitāšu aptaujas lapa (Kielhofner et al., 1986); Apmierinātība ar dzīvi (Diener et al., 1985); «GAD - 7» pašnovērtēšanas skala (Spitzer et al., 2006); Vizuāli analogā skala (VAS) pēc 10 baļļu sistēmas;
- fokusgrupu diskusijas ar katra studiju gada studējošajiem.



1.att. Dalībnieku apmierinātība ar nedēļas struktūru pēc VAS (10 baļļu sistēma)



2.att. COVID-19 pandēmijas ietekme uz dalībnieku nodarbju līdzsvaru

Rezultāti

- Vieglu trauksmi izjūt 29, mērenu – 14, smagu, ģeneralizētu trauksmi – 8 studenti, un 11 studenti trauksmi neizjūt.
- Ar Spīrmana (*Spearman*) korelācijas koeficientu tika noteikta vidēji cieša korelācija starp trauksmes līmeni un:
  - apmierinātību ar nedēļas struktūru, korelācijas koeficients ir negatīvs (r = - 0,310);
  - apmierinātību ar dzīvi kopumā, korelācijas koeficients ir negatīvs (r = - 0,426);
  - apmierinātību ar veselības stāvokli, korelācijas koeficients ir negatīvs (r = - 0,256).
- Vidēji cieša korelācija pastāv starp apmierinātību ar nedēļas struktūru un sešiem dzīves aspektiem: dzīvi kopumā (r = 0,533); spējām rūpēties par sevi (r = 0,297); brīvo laiku (r = 0,523); darbu (r = 0,393); finansēm (r = 0,258); seksuālo dzīvi (r = 0,287).
- Fokusgrupu diskusiju dalībnieki atzīmēja negatīvu pandēmijas ietekmi uz apmierinātību ar dzīvi, ko ietekmēja vientulības sajūta, motivācijas trūkums, vēlme pamest studijas, fizisko aktivitāšu trūkums, nepieciešamība pielāgoties mainīgajiem apstākļiem un nespēja apmeklēt universitāti klātienē.

Secinājumi

- Apmierinātība ar nedēļas struktūru ir statistiski nozīmīgs faktors, kas ietekmē trauksmes līmeni ergoterapijas studentiem COVID-19 pandēmijas apstākļos. Samazinoties apmierinātībai ar nedēļas struktūru, palielinās trauksmes līmenis.
- Apmierinātība ar dzīvi kopumā un veselības stāvokli ir statistiski nozīmīgs faktors, kas ietekmē trauksmes līmeni ergoterapijas studentiem pandēmijas apstākļos. Paaugstinoties apmierinātībai ar dzīvi kopumā un veselības stāvoklim, mazinās trauksme.
- Dalībniekiem, kuri atbildēja, ka pandēmija un valstī ieviestie ierobežojumi ir ietekmējuši viņu dzīvi pozitīvi, ir labāks nodarbju līdzsvars, salīdzinājumā ar tiem, kuru dzīvi pandēmija ir ietekmējusi negatīvi.
- Dalībnieku viedokļi par pandēmijas un valstī ieviesto ierobežojumu lomu apmierinātības ar dzīvi izmaiņām ir atšķirīgi un atkarīgi no indivīda personīgiem vai vides faktoriem. Kā galvenie nodarbju līdzsvara ietekmējošie faktori ir: personīgie (pārāk augsta atbildības sajūta, motivācijas trūkums, nespēja efektīvi plānot laiku, slinkums, fizisks nogurums, pasliktināts veselības stāvoklis) un vides faktori (epidemioloģiskie drošības pasākumi, kuru dēļ tika ierobežota sporta zāļu darbība, mājas vides nepiemērotība pilnvērtīgu aktivitāšu veikšanai).

COVID-19: veselības veicināšana un veselību ietekmējošie paradumi

Iļmira Kaļinkina, RSU , rezidents, eksperta specialitāte, palīgs Kira Solovjova

Aktualitāte / Mērķis

Vai jums ir sajūta, ka sliktais, kas notiek pasaulē, skar dzīvi tik lielā mērā kā nekad agrāk? Pēc COVID-19 pandēmijas daudzi no mums izjūt šoku un bezcerību vai emocionālu sastingumu. Bet smagās situācijās ir jārīkojas izlēmīgi, lai parūpētos par sevi un saviem tuviniekiem, gudri izmantotu iztikas līdzekļus un nezaudētu cerību.

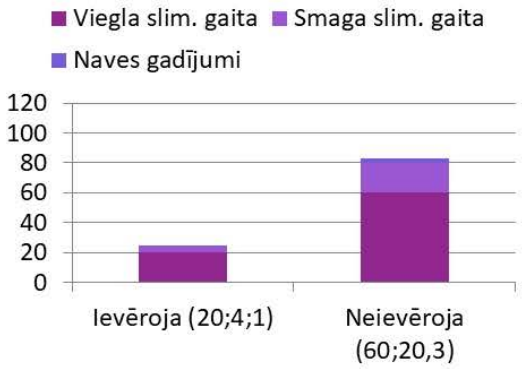
As world conditions worsen, more of us are suffering the tragic consequences of both natural disasters and man-made problems. Learn how you can cope with such challenges and minimize their effect on you and your loved ones.

Metodes

Sekojošo padomu izmantošana ietekme uz pacientu emocionālo un fizisko stāvokli (tika novēroti 120 pacienti, kuri ievēroja šos padomus un 120 pacienti, kuri neievēroja tos):

Laicīga profilaktiska medicīnisko izmeklējumu veikšana; Higiēnas ievērošana; Veselīga ēšana; Pietiekoša fiziska aktivitāte; Pozitīva attieksme pret savu darbu; Saiknes uzturēšana ar draugiem un tuviniekiem; Rūpēšana par apkārtējo emocionālajām vajadzībām.

Pacientu intervēšana, izmeklēšana, novērošana un rezultātu izvērtēšana.



„Kas gudrs, tas klausās un mācās,

Kas sapratīgs, tas saņem gudru padomu"

(Sālamana pamācības 1:5)

„A wise person listens and takes in more instruction;

A man of understanding acquires skillful direction "

(Proverbs 1:5)

Rezultāti

1. Pacienti, kuri ievēroja padomus un rekomendācijas, novērtē savu emocionālo stāvokli, ka labu. Pat ja viņi saslima ar COVID19, lielākai daļai slimības norise bija salīdzinoši viegla. Tomēr pacientiem ar smagam somatiskam slimībām bija arī letāli iznākumi.
2. Pacienti, kuri ievēroja padomus, sastopas ar smagām dzīves situācijām un lielu stresu (piemēram, tika zaudēts darbs, tika zaudēts tuvinieks), vārēja pielāgoties jaunajiem apstākļiem un dzīvot tālāk.
3. Pacienti, kuri ievēroja padomus, varēja palīdzēt citiem cilvēkiem, neskatoties uz savam grūtībām.
4. Pacienti, kuri neievēroja padomus, biežāk saslima ar COVID19, un slimības gaita bija smagāka. Dažreiz COVID19 slimība noveda pie smagām komplikācijam (plaušu fibroze, kognitīvie traucējumi, cukura diabēts, hroniska noguruma sindroms, smadzeņu migla), pat līdz invaliditātei.
5. Daži pacienti, kuri neievēroja padomus, saka biežāk lietot alkoholu, un saskaras ar tā negatīvam sekmēm, citi nonāca līdz alkohola atkarībai.

Secinājumi un padomi

Padomu ievērošana palīdz tikt gala ar COVID19 krīzi. Daudziem manas prakses novērotiem pacientiem tas ļāva vieglāk pārnest slimības gaitu. Te ir šie padomi un rekomendācijas.

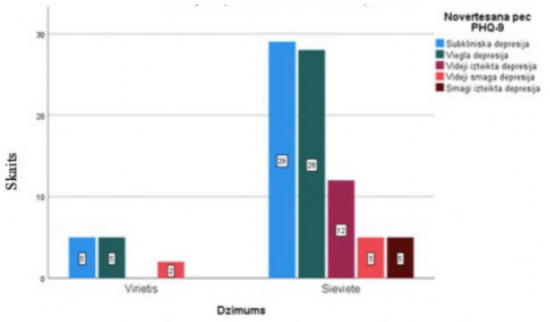
1. Rūpējieties par savu veselību (gan fizisko, gan emocionālu).
2. Ievērojiet labu higiēnu - izvērtējiet , kas varētu apdraudēt jūsu veselību, un centieties no tā sevi pasargāt: mazgājiet rokas ar ūdeni un ziepēm, īpaši pirms ēšanas un pēc tualetes apmeklēšanas. Vairieties no tieša kontakta ar tiem, kas ir infekciozi.
3. Ēdiet veselīgi: dzert pietiekami daudz ūdens, samazināt tauku, sāls un cukurs uzturā, vairīties no pārmērīgas alkohola lietošanas, nesmēķējiet un nelietojat narkotikas.
4. Esiet fiziski aktīvi (regulāras pastaigas) un veltiet pietiekami daudz laika atpūtai (miega trūkums palielina stresu un samazina koncentrēšanas spējas)
5. Centies saglabāt pozitīvu attieksmi pret savu darbu(pat ja pašreizējais darbs nav jūsu sapņa darbs, tas jums dod ienākumus).
6. Uzturiet saikni ar tuviniekiem un draugiem - ciešas attiecības ar draugiem labvēlīgi ietekmē gan fizisko, gan emocionālo veselību.
7. Rūpējieties par apkārtējo emocionālajām vajadzībām. Radiet tādus apstākļus, kuros pacientam, kolēģiem ir vieglāk izpaust savas domas.

Depresijas loma COVID-19 pandēmijas laikā ģimenes ārstu vidū

Anastasija Tjukova

Aktualitāte / Mērķis

Izpētīt depresijas sastopamības biežumu ģimenes ārstu vidū COVID-19 pandēmijas laikā, lai laicīgi atklātu smagu depresiju dzīves kvalitātes uzlabošanai.



Depresijas pakāpes pēc PHQ-9 attiecībā pret dzimumu

Metodes

Latvijā praktizējošo ģimenes ārstu anketēšana. Darbs programmās Microsoft Word, SPSS (datu analīzē izmantos crosstabs, tika ņemta Asymptotic Significance Pearsona Chi-Square testā $p \leq 0.05$ par statistiski nozīmīgu).
Aptaujas anketa tika nosūtīta 1111 ģimenes ārstiem, atbildes sniedza 91 dakteri.

Depresijas pakāpes pēc PHQ-9 attiecībā pret slodzes palielināšanos

		Nav	Viegla depresija	Vidēji izteikta depresija	Vidēji smaga depresija	Smaga depresija	KOPĀ
Jā, palielinājās	Skaits	31	33	12	7	5	88
	Procentos %	35,2	37,5	13,6	8	5,7	100
Nē, nepalielinājās	Skaits	3	0	0	0	0	3
	Procentos %	100	0	0	0	0	100
Kopā	Skaits	34	33	12	7	5	91
	Procentos %	37,4	36,3	13,2	7,7	5,5	100

Rezultāti

Pēc GAD – 7 un PHQ – 9 skalas netika novērota statistiska nozīmīga starpība starp dzimumiem. Pēc GAD - 7 novērtēšanas skalas smaga depresija tika novērota tikai sievietēm 2,5% gadījumos (p = 0,584), bet pēc PHQ – 9 novērtēšanas skalas arī tikai sievietēm 6,3% gadījumos (p = 0,378).

Nebija novērota saistība pēc ģimenes statusa. Pēc GAD-7 novērtēšanas skalas smaga depresija sastopama 2,8% gadījumos respondentiem (p = 0,965), kuriem ir partneris, pēc PHQ-9 novērtēšanas skalas 6,9% (p=0,647) arī tiem, kuriem ir partneris.

Pētījumā ietvaros nebija atrasta starpība depresijas pakāpēm un atkarībām. Pēc GAD-7 novērtēšanas skalas smaga depresija sastopama 2,9% gadījumos dalībniekiem bez atkarībām (p = 0,828), savukārt pēc PHQ-9 novērtēšanas skalas 4,3% gadījumos bez atkarībām, 7,1% gadījumā ar nelielu alkohola lietošanu, 20% gadījumā ar citām atkarībām (p = 0,230). *(Neliela alkohola lietošana mazāk par 14 alkohola vienībām nedēļā).*

Netika novērota statistiska nozīmīga starpība starp depresijas pakāpēm un apdzīvotību. Pēc GAD-7 novērtēšanas skalas smaga depresija novērota 3,7% gadījumā dalībniekam no citas lielas pilsētas, 2,6% no laukiem (p = 0,578) , bet pēc PHQ-9 novērtēšanas skalas 3,8% gadījumā dalībniekam no Rīgas, 7,4% no citas lielas pilsētas, 5,3% no laukiem (p = 0,769).

Pētījumā nebija novērota statistiska nozīmīga starpība starp depresijas pakāpēm un slodzes palielināšanos. Pēc GAD-7 novērtēšanas skalas 2,3% gadījumos tika novērota smaga depresija respondentiem, kuri atzīmē slodzes palielināšanos (p = 0,412) un pēc PHQ-9 novērtēšanas skalas 5,7% gadījumos (p = 0,267) tiem ģimenes ārstiem, kuri atzīmēja slodzes palielināšanos COVID– 19 pandēmijas laikā.

Netika novērota statistiska nozīmīga starpība starp depresijas pakāpēm un darba stāžu. Pēc GAD-7 novērtēšanas skalas respondentiem smaga depresija sastopama 3,7% ar darba stāžu 21 - 25 gadiem, 6,7% ar stāžu 26 – 30 gadi (p = 0,537), bet pēc PHQ-9 novērtēšanas skalas smaga depresija sastopama ārstiem ar darba stāžu <5 gadiem 9,1%, 7,4% ar darba stāžu 21 - 25 gadiem, 6,7% ar stāžu 26 – 30 gadi, 5,6% ar stāžu >31 gadiem (p = 0,486). Pārējām grupām nebija sastopama smagas pakāpes depresija.

Secinājumi

Nav statistiskas nozīmes depresijas pakāpes attiecībā pret dzimumu, ģimenes stāvokli, atkarību esamības, dzīvesvietu, slodzes palielināšanos, darba stāžu.

Tomēr tika novērots, ka smagāka depresija sastopama tikai sievietēm, biežāk ģimenes ārstiem no mazākām pilsētām un laukiem, tiem, kuri atzīmē slodzes palielināšanos un biežāk tiem, kuriem darba stāžs ir lielāks par 21 gadu.
Turpinot darbu, būtu iespēja ietvert lielāku respondentu skaitu.

DEPRESSION, DISTRESS AND THEIR ASSOCIATION WITH PATTERNS OF PSYCHOACTIVE SUBSTANCE USE DURING THE COVID-19 EMERGENCY STATE IN LATVIA

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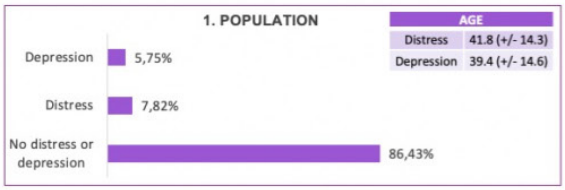
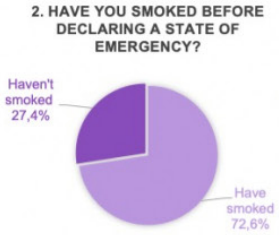
Actuality / The Goal

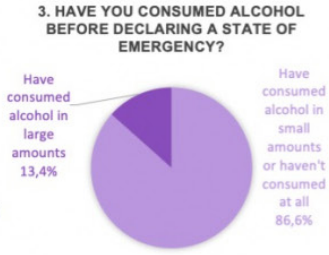
The WHO warned that the COVID-19 pandemic could have psychiatric consequences such as elevated levels of depression, increased alcohol and drug use, and other behaviors that exert a strong influence on health [1].
The aim of the study was to estimate the prevalence of depression and distress in the general population of Latvia and their association with substance use during the state of emergency from March 12th to June 10th, 2020.

Methods

The study was carried out within the framework of the National Research Program of Latvia and was administered as an online survey from 6 to 27 July 2020 using a representative sample of the general population of Latvia. The survey was an initiative of the Mental Health Sector of the Pan-Hellenic Medical Association's Institute for Scientific Research to assessed aspects of overall mental functioning, needs, and behaviours in the general population during the COVID-19 pandemic, both from the virus and the measures taken to control it [2]. The Center for Epidemiologic Studies Depression Scale (CES-D) was used to determine the presence of distress/depression [3]. The structured questionnaire to determine psychoactive substance use was applied. Proportions of independent variables across the study groups were compared using Chi-square test.





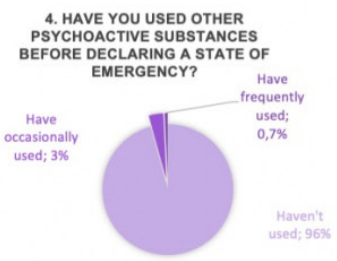


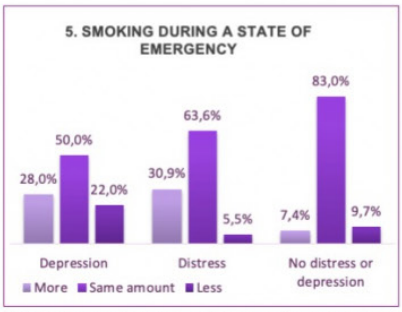
Results

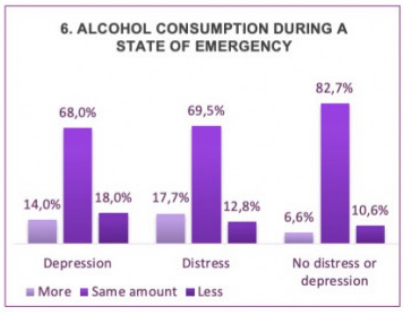
The study sample included 2608 respondents. The prevalence of depression and distress in the study population was estimated at 5.7% (95% CI 4.92 – 6.71) and 7.8% (95% CI 6.85 – 8.91), respectively *(Figure 1)* .
In total, 27.4% (n = 715) of the respondents have admitted that they have smoked regularly or episodically before declaring a state of emergency, 72.6% (n = 1893) of the respondents have stated that they have not smoked at all *(Figure 2)*. The majority of respondents 86.6% (n = 2258) have noted that they did not consume alcohol at all or in small quantities before declaring a state of emergency *(Figure 3)*. In total 3.6% (n = 94) of the respondents have used other psychoactive substances occasionally and quite rarely, 0.5% of all respondents (n = 13) have admitted that used them often *(Figure 4)*.
Patients with depression and distress smoked more tobacco compared to respondents without distress/depression. During the state of emergency 83.0% of respondents without distress/depression maintained the same frequency of smoking. Patients with depression smoked either more (28.0% vs. 7.4%, p<0.001) or less (22.0% vs. 9.7%) compared to respondents without distress or depression. Patients with distress smoked more compared to patients without condition (30.9% vs. 7.4%, p<0.05) *(Figure 5)*.
Comparing depressed and non-depressed patients, patients with depression and distress were significantly more likely to consume more alcohol during an emergency (14.0% and 17.7% vs. 6.6%, respectively, p<0.001). Patients without distress or depression were more likely than depressed and distressed patients to maintain the same amount of alcohol consumption during the emergency (82.7% vs. 68.0% and 69.5%). Patients with depression were more likely to use less alcohol during an emergency compared to respondents with distress and without any of these conditions (18.0% vs. 12.8% and 10.6%) *(Figure 6)*.
The changes in the use of other psychoactive substances in those who had depression or distress were not statistically significant.

Conclusions

- Participants with depression were more likely to change their smoking habits during the state of emergency and to consume larger alcohol amounts comparing to non-depressed participants.
- Participants with distress smoked more and consumed larger alcohol amounts comparing to participants without distress or depression.
- Preparing support systems to mitigate mental health consequences is needed urgently.







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Dynamics of depression and anxiety prevalence among health care workers during Covid-19 pandemic in Latvia: a panel study.

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Actuality / The Goal

The vulnerability of the health care system before the COVID-19 pandemic led to significant mental health adverse outcomes of HCWs during the beginning of COVID-19 pandemic in Latvia (Valaine et.al., 2021).

Aim of this study was to asess dynamics of depression and anxiety prevalence among health care workers (HCW) during Covid-19 pandemic in Latvia.

Methods

A panel study in the population of HCWs was performed during Covid-19 pandemic in Latvia. First cross-sectional quantitative study was performed during the first wave of the COVID-19 pandemic in Latvia- the participants were interviewed between 28 April 2020 and 2 June 2020, answers from 864 HCWs were obtained. A repeat survey of the same participants was conducted every 3 months. Respondents were interviewed 7 times.

The participants completed two standardised questionnaires that assessed the symptoms of anxiety (GAD-7) and depression (PHQ-9). Cut-off score for both scales were 10.
The data analysis was performed using MS Excel and SPSS v25.

Results

Descriptive statistics of demographic characteristics- see Table 1.

Dynamics of symptoms of depression and anxiety prevalence among HCW during Covid-19 pandemic- see Chart 1.

Table 1. Descriptive statistics of demographic characteristics

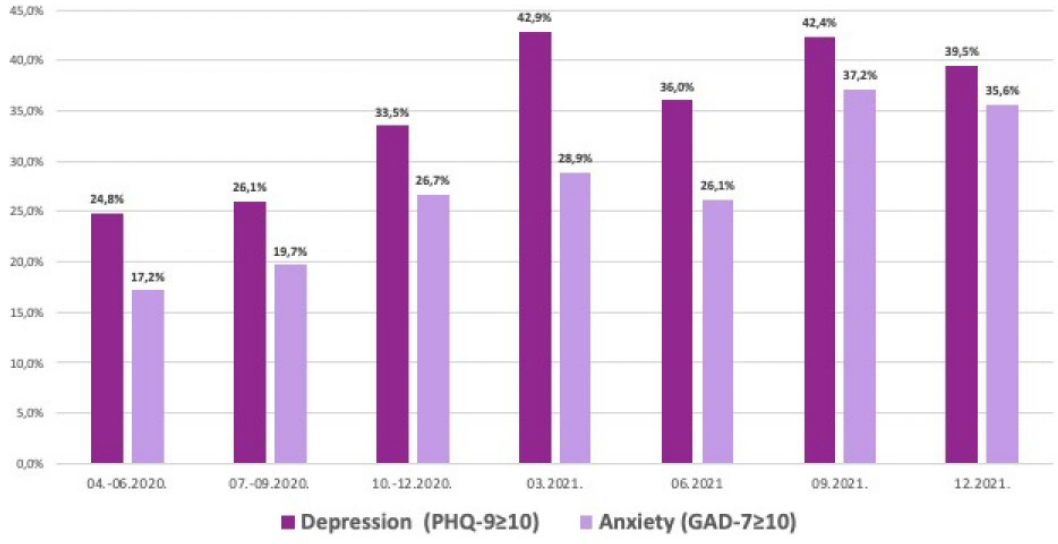
Time period	Total, n	Women, % (n)	Men, % (n)	Age, median
04.-06.2020.	844	84.8 (709)	15.2 (127)	40.0 (IQR 29.0-54.0)
07.-09.2020.	375	87.7 (329)	12.3 (46)	40.0 (IQR 29.0-54.0)
10.-12.2020.	367	88.5 (323)	11.5 (42)	43.0 (IQR 30.0-54.0)
03.2021.	307	91.9 (282)	8.1 (25)	44.5 (IQR 30.0-55.3)
06.2021	282	90.1 (254)	9.9 (28)	44.0 (IQR 30.0-54.5)
09.2021.	286	91.6 (262)	8.4 (24)	44.0 (IQR 30.0-54.5)
12.2021.	233	91.4 (212)	8.6 (20)	46.0 (IQR 30.8-55.0)

Conclusions

Among study participants prevalence of depression and anxiety has increased during Covid-19 pandemic in Latvia.

Futher data analysis is needed to assess causal factors of depression and anxiety among HCW during Covid-19 pandemic in Latvia.

Chart 1. Dynamics of prevalence of depression and anxiety among HCW during Covid-19 pandemics in Latvia



RSU INTERNATIONAL COVID-19 CONFERENCE
RIGA STRADIŅŠ UNIVERSITY

Effects of COVID-19 Pandemic on Provision of Care in Maternal and Newborn Healthcare Facilities in Latvia in 2020 and 2021

Agnija Vaska[2], Gita Jansone-Šantare[1,2], Dārta Jakovicka[3], Anna Regīna Knoka[3], Katrīna Paula Vilcāne[4], Elizabete Pumpure[1,2], Dace Rezeberga[1,2], Ilaria Mariani[5], Marzia Lazzerini[5], Benedetta Covi[5], Emanuelle Pessa Valente[5]

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Actuality / The Goal

Actuality: In 2016 World Health Organization announced 8 quality standards on maternal and newborn care in health facilities to decrease maternal and perinatal mortality. Implementing the WHO Standards might increase quality of care provided in facilities and increase positive experiences during childbirth for mothers. Since COVID-19 pandemic worldwide was declared in March 2020 numerous effects on healthcare system were taken place [1;2].

The goal: The main goal of the research was to investigate how COVID-19 pandemic affects the quality of maternal and newborn care (QMNC) during childbirth in Latvia.

Methods

In a cross-sectional study women 18 years of age or older, who gave birth in Latvia from 1st of March 2020, to 28th of October 2021, answered an online questionnaire including questions based on WHO Standard-based Quality Measures (10 questions on provision of care) and questions on socio-demographic characteristics. Descriptive statistics was performed on socio-demographic characteristics subgrouping by year of birth 2020 vs 2021, and by experience of labour – women who underwent labour with vaginal delivery vs women having pre-labour Caesarean section (CS).

The study was approved by Riga Stradins University Research Ethics Committee (22-2/140/2021 16.03.2021). Statistical analyses were performed using Stata/SE version 14.0 (Stata Corporation, College Station, TX, USA) and R version 4.1.1.

Results

2079 women were included in the analysis. From them 1860 (743 in 2020; 1080 in 2021) women underwent labour (1st group) and 219 (90 in 2020; 125 in 2021) underwent pre-labour CS (2nd group).

In the 1st group (Figure A) 66.4% of women reported that have received fundal pressure in instrumental vaginal delivery and 35.3% did not receive pain relief during labour and 21% underwent episiotomy during spontaneous vaginal birth, with no significant difference between years. Significant difference between years 2020 and 2021 was obtained in following quality measures, according to women perceptions - no skin to skin contact after the delivery (11.2% in 2020, 5.6% in 2021, p<0.001), inadequate breastfeeding support (38.9% in 2020, 28.7% in 2021, p<0.001), no exclusive breastfeeding at discharge (31.5% in 2020, 26.7% in 2021, p=0.029), no immediate attention when needed (27.3% in 2020, 22% in 2021, p=0.011).

In the 2nd group (Figure B) 37.9% underwent elective CS, while 62.1% had an emergency CS with no significant difference by year. 31.5% of women in the 2nd group indicate not having skin to skin contact after CS, 37.9% inadequate breastfeeding support after the CS, 40.6% no exclusive breastfeeding at discharge with no significant difference by year. While 20.1% claimed lack of early breastfeeding after delivery with a significant difference (p=0.027) between years 2020 and 2021, 26.7% and 15.2% respectively.

A reduction in QMNC due to COVID-19 pandemic was reported significantly for the year 2020 compared to 2021.

Figure A. Women who underwent labour n=1860

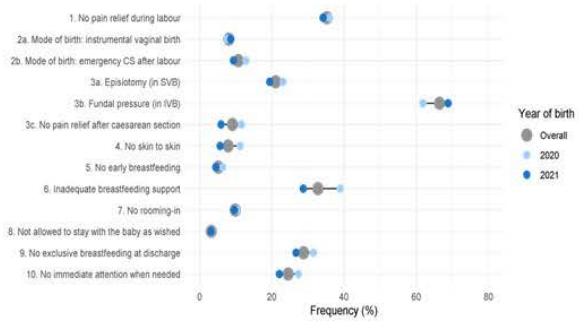
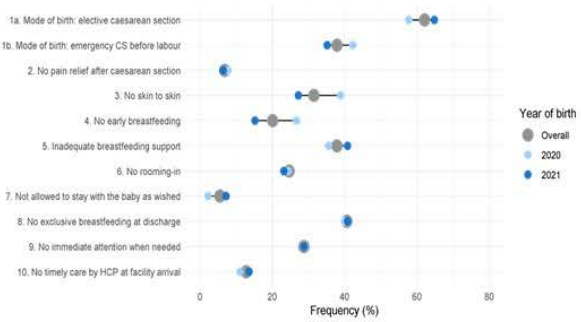


Figure B. Women with pre-labour Caesarean section n=219



Conclusions

The study shows that there is a reduction on quality of maternal and newborn care between years 2020 and 2021 with slightly better finding in 2021, according to women perception, where COVID-19 pandemic can be the reason. Since there are no previous studies investigating QMNC before COVID-19 pandemic in Latvia there has been no comparison with earlier data.

The results show that still the fundal pressure is widely performed in instrumental vaginal birth. Slightly worse findings were found in 2020 when COVID-19 pandemic was unexpected, and no one was ready for it. Which shows that there was less support and help with breastfeeding after the birth and at the discharge, as well as skin to skin contact was absent and less attention when needed was present. Moreover, findings show that the biggest part of CS were performed during emergencies and still a lot of women claimed no skin-to-skin contact after the procedure.

Appropriate health care strategies to improve health care for mothers and newborns in Latvia are urgently required.

Acknowledgements

We are grateful to women who dedicated their time to fill in this survey.
We would like to thank Riga Stradins University and all professional organizations who helped with promotional activities and to thank the IMAgiNE EURO Study group for their assistance in developing this project.

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EFFICIENCY OF FACIAL MASK USE IN COVID-19 TRANSMISSION USING A BACTERIAL MODEL

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[1]*Rīga Stradiņš University, Department of Biology and Microbiology, Latvia*

Actuality

During the COVID-19 pandemic, the use of personal protective equipment such as face masks are widely used for prevention of this airborne infection. **COVID-19 is mainly transmitted with respiratory droplets.** The **droplets** produced by coughing or sneezing are large in diameter, approximately **~1-100µm** (Han et al., 2013), but average size of many **bacteria** is approximately **1µm** (Levin and Angert, 2015). Therefore, a bacterial model was used in this study to determine the efficiency of facial masks for COVID-19 prevention.

Methods

In this study, 51 used face masks were analysed using a bacterial model. Using imprinting method, both sides of the face masks were separately applied to blood agars. After incubation, the number of colony-forming units (CFUs) was determined. Morphological growth evaluation, staining with Gram stain and VITEK2 for species identification was performed for microbial variability determination. MS Excel and IBM SPSS was used for statistical analysis. 5 unused masks were used as a control.

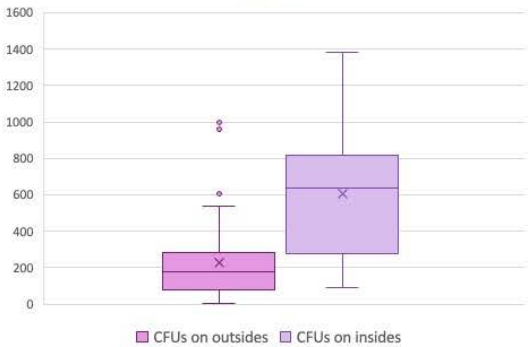
Results

Microorganisms were found on all masks used in the study, but were not found on any of the control group masks. The majority of microorganisms found were those of **normal human skin and respiratory tract microbiota**, mostly *Staphylococcus* spp., followed by *Micrococcus* spp., although extraneous microorganisms were also found.

Outside

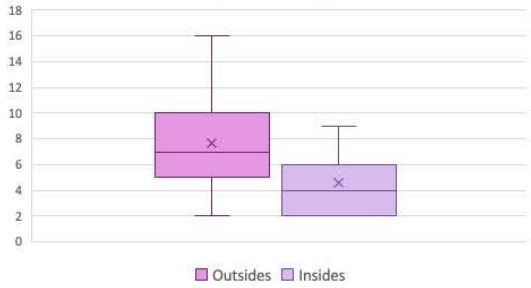
Inside

Colony forming units (CFUs) found on outsides versus insides



The **count of colony forming units** found **on insides** (median = $6{,}4x10^2$) was statistically significantly **higher** than on the outsides (median = $1{,}8x10^2$). *(Mann-Whitney U test).*

Variety of bacterial species



The **bacterial variety** found on the **outsides** (median = 7) was statistically **significantly higher** than on the insides (median = 4). *(Mann-Whitney U test)*

Increase of CFUs over time

Even though a tendency for increased **count of CFUs** over usage time was observed, there was no statistically significant difference of CFUs found on the insides and outsides of the used face masks comparing the groups of masks used no more than 2 hours versus those used more than 2 hours.

The **bacterial variety** on the **outsides** was **significantly higher** comparing face masks used **>2hours versus <2h**, whereas on the insides a statistically significant difference was not proven.

The outsides of used face masks also contained more extrinsic microorganisms compared to the insides.

Conclusions

More CFUs were detected on the insides of the face masks than on the outsides, reflecting **the ability of facial masks to detain excreted microorganisms**.

The outsides of face masks contained a wider variety of bacterial species, furthermore, the **bacterial variety increased over usage time on the outsides on the face masks but not on the insides.** Most commonly found microorganisms were members of normal microbiota. Extrinsic microorganisms were also found, more commonly on the outsides.

These results emphasize the **importance of correct facial mask usage** showing that inappropriate face mask use increases the risk of potentially pathogenic microorganism transmission.

The large differences in the size of respiratory droplets and bacteria, clearly demonstrate that **face masks can prevent the spread of COVID-19.**

Experience of Care During the COVID-19 Pandemic in Latvia: Findings Over Time of the IMAGINE EURO Study on WHO Standard-Based Quality Measures

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Actuality / The Goal

Actuality: In 2016 the World Health Organization (WHO) published a set of Standards to improve, evaluate and monitor the quality of maternal and newborn care in health facilities, with a particular emphasis on creating a woman-centred childbirth environment in which mothers feel free, secure, and respected [1,2].
Numerous changes in healthcare systems across Europe have happened since the onset of the COVID-19 pandemic in March 2020, adding to the complexity of maternal and infant care. For example, during the pandemic, fewer health care professionals (HCPs) were available, SARS-CoV-2 testing was mandatory, and support persons were not allowed to accompany patients in health care facilities in Latvia - all of which may have affected the perceived experience, provision and resources of care [3,4].

The goal: To investigate 'the mothers' perceived experience of quality of maternal and newborn care (QMNC) around the time of childbirth during the COVID-19 pandemic in Latvia.

Methods

This **cross-sectional study** is reported according to the Strengthening the Reporting of Observational Studies (STROBE) in Epidemiology guidelines. It was approved by the Riga Stradins University Research Ethics Committee in Latvia (22-2/140/2021 16.03.2021). Women aged 18 or older who gave birth in Latvia between March 1st and October 28th 2020 were invited to participate in an online survey. The survey was distributed through social media. Descriptive statistics of socio-demographic characteristics and Quality Measures were reported as absolute frequency and percentage, subgrouping by year of birth (i.e., 2020 vs 2021) and by the experience of labour experience (i.e., women who underwent labour vs those with pre-labour C-section).

A total of 2038 women participated in the study: 833 gave birth in 2020 (of which 77.8% vaginal births vs. 22.2% c-sections), while 1,205 women gave birth in 2021 (of which 81.2% vaginal births vs. 18.8% C-sections).

A QMNC index was calculated for the experience of care domain by year based on the predefined previously described.

Statistical analyses were performed using Stata/SE version 14.0 (Stata Corporation, College Station, TX, USA) and R version 4.1.1.

Results

The following significant results emerged from the data on the experience of care for women who gave birth (Figure 1): 59.7% of women who gave birth via instrumental vaginal birth (IVB) did not receive a consent request for IVB; 47.2% of women who gave birth via spontaneous vaginal birth (SVB) did not choose a birth position. Notably, nearly one-fifth (17.0–17.8%) of all women reported being abused physically, verbally, or emotionally.

Quality Measures with the highest improvement in QMNC in 2021 compared to 2020 were: no clear/effective communication from HCP (34.3% in 2020 to 26.5% in 2021, p=0.001); companionship not allowed (43.1% in2 2020 to 30.7% in 2021, p<0.001); not treated with dignity (30.3% in 2020 to 20.3% in 2021, p<0.001); and no emotional support (36.2% in 2020 to 26.6% in 2021, p<0.001).

Regarding the women with pre-labour C-section (Figure 2), there has been an increased odd of no allowance of companionship (Adj OR 1.40, 95% CI from 1.04 to 1.88, p=0.027) compared to women who underwent labour, with a slight but not significant improvement in 2021 (52.2% vs 42.4%, p=0.073).

The QMNC Index of the experience of care domain differed by year (p<0.001) with a median of 80.0 in 2020 (IQR 65.0, 90.0) and a median of 85.0 in 2021 (IQR 70.0, 95.0) (Figure 3).

Figure 1. Women who underwent labour (n=1860)

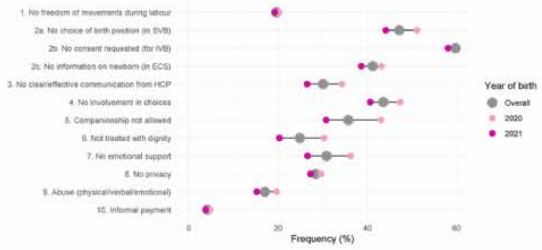


Figure 2. Women with pre-labour caesarean section (n=219)

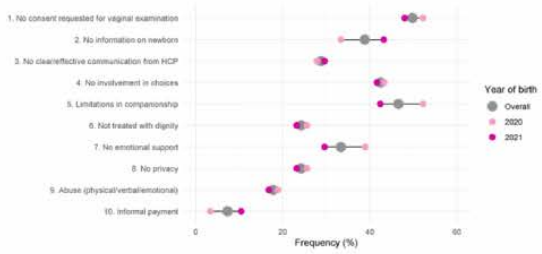
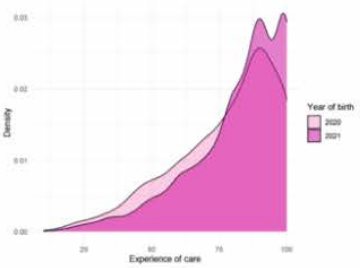


Figure 3. QMNC index by year of labour. Subdomain of experience of care



Conclusions

Regarding the mothers' perceived experience of QMNC, very little previous evidence was available from Latvia [3]. However, other research in other countries - shows that **women frequently receive inadequate emotional support, inquiries are ignored or rejected, and they lack privacy** or other types of mistreatment and abuse from all levels of healthcare staff, including rude, insulting, and judgmental attitudes, which is on the contrary to the recommendations by WHO.

Even though the experience of care improved in 2021 compared to the year 2020, essential gaps persist in all Quality Measures evaluated. Therefore, it urges a woman-centred childbirth environment with no limitation in companionship because it **can significantly impact a mother's experience of care with positive consequences on her well-being, the outcome of the birth, and the mother's and baby's health.**

ACKNOWLEDGEMENTS

We would like to express our appreciation to the women who took the time to complete this survey. Furthermore, we would like to express our gratitude to Rīga Stradiņš University and all professional organizations that assisted with promotional efforts and express our gratitude to the IMAgiNE EURO study group for their assistance in developing this project.

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Fitnesa treneru profesionālās darbības pielāgošanās Covid-19 ierobežojumiem

Irēna Upeniece
Katrīna Stasjune

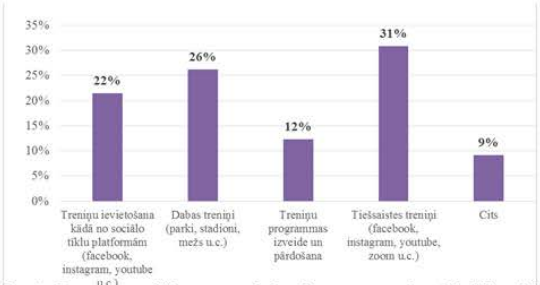
Aktualitāte / Mērķis

Globālā pandēmija ir lielākais satricinājums, ar kādu fitnesa nozare jebkad ir saskārusies. Latvijā fitnesa industrija smagi cieta ziemas lokdauna posmā no 2020.gada 21.decembra līdz 2021.gada 11.janvārim un turpmākā vairāku mēnešu dīkstāvē Covid-19 ierobežojumu laikā fitnesa treneriem samazinājās darba slodze, zaudēti klienti, kā arī atstāj negatīvas sekas uz privāto finansiālo stāvokli. Ierobežojumi būtiski ietekmē sabiedrību, ekonomiku, izplata bailes un tādējādi potenciāli pasliktina attieksmi pret savu dzīvesveidu un palielina garīgās veselības problēmas.
Mērķis: Noskaidrot un izpētīt, kā profesionālās darbības pielāgošanās Covid-19 ierobežojumiem ietekmē fitnesa trenerus.

1.attēls **Respondentu atbildes par to, kā viņi raksturotu savu psihoemocionālo veselību Covid-19 ierobežojumu laikā**

Metodes

Aptauja tiešsaistes vietnē visidati.lv (25 jautājumi, kuri cieši saistīti ar respondentu profesionālo darbību). Microsoft 365 Excel datu apstrādei. Pētījuma norises laiks (~2021.gada 22.novembra- 2021.gada 6.decembrim)
Pētījumā dalībnieki: 70 Rīgas fitnesa klubu grupu un individuālo nodarbību treneri, 71% sievietes, 29% vīriešu, vecumā no 21 līdz 40 gadiem.



2.attēls. **Respondentu atbildes par to, kādas alternatīvas metodes viņi pielieto, lai nodrošinātu kvalitatīvus treniņus klientiem**

Rezultāti

Daži pētījuma rezultāti: Covid-19 ierobežojumi atstāj negatīvu ietekmi uz fitnesa treneru psihoemocionālo un fizisko veselību - izjūt tieši negatīvo stresu, kas attiecīgi ietekmē fizisko veselību. Par ienākumu līmeņa samazināšanos norādīja 60% respondentu, no kuriem 52% atzīst, ka pieprasījums pēc treniņiem un darba slodze ir samazinājusies. No visiem respondentiem 33%, kā alternatīvu metodi nodarbību vadīšanai izmantoja tiešsaistes platformas (Zoom, Facebook u.c.), tikmēr 26% savas nodarbības vadīja ārpus telpām, ievērojot valstī noteiktos epidemioloģiskos ierobežojumus, kā arī 22% uzskatīja, ka treniņu ievietošana kādā no sociālo tīklu platformām (Youtube, Facebook, Instagram u.c.) ir izdevīgāka, nekā to vadīšana tiešsaistē.

Secinājumi

Covid-19 ierobežojumi negatīvi ietekmē fitnesa treneru psihoemocionālo un fizisko veselību - tiek izjusts negatīvais stress, kas attiecīgi ietekmē fizisko kondīciju.
Covid-19 ierobežojumu dēļ lielākajai daļai treneru ienākumu līmenis ir krasi samazinājies.
Pandēmijas laikā, kā alternatīvu metodi nodarbību vadīšanai izmantoja tiešsaistes platformas (Youtube, Zoom, Facebook u.c.); treniņi ārpus telpām, ievērojot valstī noteiktos epidemioloģiskos ierobežojumus, kā arī treniņu programmu ievietošana kādā no sociālo tīklu platformām (Youtube, Facebook, Instagram u.c.)
Vairums fitnesa treneru akcentējuši, ka Covid -19 laikā veikuši jaunu treniņu metožu un programmu pilnveidi. Lai celtu savu kvalifikāciju, treneri apmeklēja tiešsaistes seminārus un kursus, kā arī iepazinās ar jaunākajām tendencēm podkāstos.
Conclusions
Covid-19 restrictions had affected fitness coaches psychoemotional and physical health, this negative Stress affects to Physical potential and condition.
Restrictions of Covid-19 most of Coaches feels loss of Financial income (Salary).
Alternative methods of conducting for The Training Classes most of Coaches used opportunity to present their Trainings in Online social media platforms such as YouTube, Facebook, Instagram etc., Open-air Workouts was Organized considering by local Government Epidemiological restrictions due to Pandemy.
Majority of Fitness Trainers emphasizes that in Covid-19 pandemy time, they made a lot of improvements of Workout methods and Workout plans. To upgrade Trainers Qualification, they took a part in Online Workshops and Classes, as well they got acquainted with latest Trends in Podcasts.

FIVE NEW COVID-19 RELATED MEASURES: NOTABLE CORRELATIONS AND DIFFERENCES

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Riga Stradiņš University

Background

Even though most of restrictions in Latvia are being lifted (Veselības ministrija, 2022), COVID-19 is still our reality. One of the proven effective preventive measures is preventive health behaviour, such as mask wearing, hand hygiene and distancing (Teslya et al., 2020). Recently five new scales were developed in Latvia, to investigate potential impact of four variables within Health Belief Model on preventive health behaviour (Krumina et al., 2022).

Aim of this study was to investigate correlations, differences and demographic characteristics of COVID-19 related constructs measured by newly developed scales.

Methods

Study took place between 25.09. and 09.11. in 2020, shortly before the second wave of COVID-19 pandemic in Latvia. Data collection was performed by computer assisted face-to-face interviews in two languages – Latvian and Russian. 30% of respondents filled the questionnaires in Russian.
Age of participants varied between 18 and 95 (M = 55,63, SD = 19,30). Sample was selected using stratified random sampling method (N = 642).

Measures:
Sociodemographic questionnaire (age, gender, education)
Perceived fear of contracting COVID-19*
Evaluation of COVID-19 related government actions*
COVID-19 related preventive health behaviour*
Belief in COVID-19 origin related conspiracy theories*
Perceived COVID-19 severity*

**Krumina et al., 2022*

Results

- In both language subsamples women present higher level of perceived fear, higher level of involvement in health behaviour and evaluate government actions as more appropriate and helpful than men ($p < 0,05$);
- In both subsamples age correlated positively and statistically significant with social distancing (r_{LV} = 0,20, r_{RUS} = 0,32), government action evaluation (r_{LV} = 0,30, r_{RUS} = 0,45) and perceived severity (r_{LV} = 0,22, r_{RUS} = 0,23) ($p < 0,01$);
- Age correlation with government action evaluation was notably higher in Russian subsample (r_S = 0,45) than in Latvian (r_S = 0,30);
- Hygiene subscale and social distancing subscale correlate ($p < 0,01$) highest with Evaluation of government actions in both languages (r_S=0,35-0,50);
- Statistically significant differences in level of education among the observed measures in Russian subsample observed only in perceived COVID-19 severity – respondents with higher education perceived disease severity significantly higher than those with secondary education;
- In Latvian subsample significant differences in level of education were observed in perceived fear of contracting COVID-19, hygiene subscale, perceived COVID-19 severity and in Belief in COVID-19 origin related conspiracy theories;

Figure 1. The measures of central tendency

	M(LV)	*M(RUS)*	*Mdn(LV)*	*Mdn(RUS)*
Fear of COVID-19	2.07	2.18	2.00	2.00
Hygiene subscale	2.77	3.00	2.86	3.14
Social distancing subscale	2.88	2.83	3.00	3.00
Perceived severity	2.69	2.71	2.80	2.80
Government action evaluation	3.08	3.05	3.17	3.17
Belief in COVID-19 origin related conspiracy theories	1.77	1.94	1.58	1.83

Note. n_{LV} = 452, n_{RUS} = 190

Conclusions

- Interventions and initiatives that promote health behaviour might benefit in putting additional focus on reaching men population;
- In supporting psychological interventions regarding COVID-19 it could be valuable to note that women overall are more prone to fear of contracting this virus than men;
- Even though measures of central tendency for both subsamples are very close on each scale (Figure 1), the results that show almost no differences by level of education in Russian subsample and several in Latvian subsample, might invite additional research and evaluation on possible reasons;
- Evaluation of COVID-19 related government actions seems to be significantly tied to involvement in preventive health behaviour, which is notable lesson that should remind authorities how important it is to cultivate a positive link with society for more effective overcoming of health crises.

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This study was conducted under "Research on Proliferation of Psychiatric Disorders and Suicidal Behaviour in the Adult Population of Latvia" (Id. Nr. VM 2018/32/ESF) as part of ESF project "Complex health promotion and disease prevention measures" (Id. Nr.9.2.4.1/16/I/001).

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Gender Differences in Psychological Distress Among the Elderly in Latvia at the Beginning of the COVID-19 Pandemic

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Actuality / The Goal

Until October of 2020, the Baltic country of Latvia was among the few countries that had experienced a low prevalence (less than 50 reported cases per day) for COVID-19 (OECD, 2021). As COVID swept through Europe, and the world, with high rates of illness and death, so did symptoms of anxiety, depression, post-traumatic stress disorder, stress, and psychological distress (Xiong, et al., 2020).

This study examines the relationship between gender and psychological distress among Latvians over 50 years old within the first 6 months of the COVID-19 pandemic. This study tests the null hypothesis that no differences in psychological distress exist based on gender.

Methods

Data

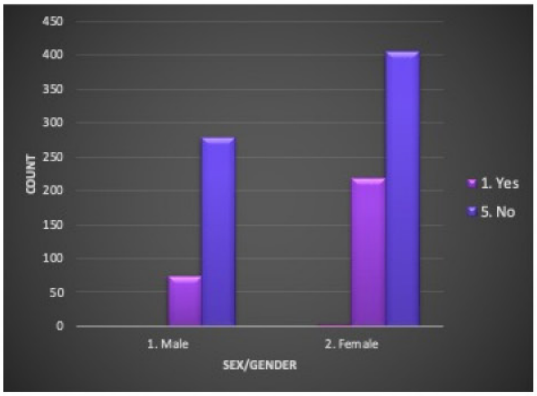
Data from Wave 8 COVID-19 data of the Survey of Health, Aging, and Retirement in Europe (SHARE) were used for this analysis. SHARE Wave 8 COVID-19 data is an early data version of the SHARE Corona survey conducted between June and August 2020. It features the data collected by telephone (CATI) on topics related to COVID-19 for a large sub-sample of SHARE panel respondents. This study examined a sample of 980 adults over 50 years old in Latvia.

Analysis

Bivariate analysis were performed utilizing the Pearson chi-square test for association to examine differences in symptoms of psychological distress by gender during the first six months of the COVID-19 pandemic. Level of significance was determined by the p-value test statistic. Alpha level was established at .05.

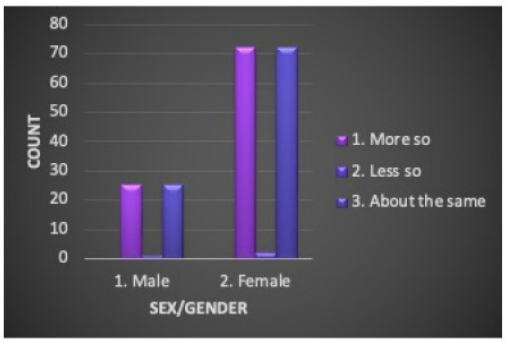
Results

Relationship Between Feeling Nervous in the Last Month and Gender



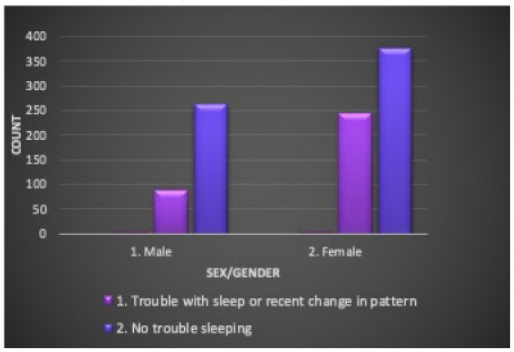
A chi-square test of independence shows that there was a significant relationship between feeling nervous in the last month and gender, X^2 (2, N = 976) = 22.11, p < .001. Women were more likely than men to report feeling nervous.

Relationship Between Feeling Depressed Since the COVID-19 Outbreak and Gender



A chi-square test of independence shows that there was a significant relationship between feeling depressed since COVID-19 outbreak and gender, X^2 (3, N = 976) = 10.95, p < .01. Women were more likely than men to feel more depressed.

Relationship Between Trouble Sleeping Recently and Gender



A chi-square test of independence shows that there was a significant relationship between trouble sleeping and gender, X^2 (2, N = 976) = 20.40, p < .001. Women were more likely than men to have trouble sleeping.

Conclusions

This study rejects the null hypothesis that no differences exist between the genders, as women report greater psychological distress during this period. Additional multi-method analysis is consistent with these findings and concludes that this is due to the greater concern women report for family, and the burden which placed limitations on meeting their children and grandchildren (Reine, et al., 2021).

SHARE acknowledgement
This study uses data from SHARE Wave 8. *COVID-19 Survey 1* 6103/SHARE.w8ca.800

[1]Texas Tech University Health Science Center, Lubbock, Texas, U.S.A.
[2]Rīga Stradiņš University, [3]Uppsala University, Sweden; Research supported by:
[4]Fulbright Scholar Program, [5]*Project/agreement No. 1.1.1.2/VIAA/3/19/540 'Challenges of ageing in the Baltic Sea region'*

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Ģimenes ārsta prakses pacientu attieksmi ietekmējošie faktori par vakcināciju pret Sars-CoV-2 dažādās vecuma grupās

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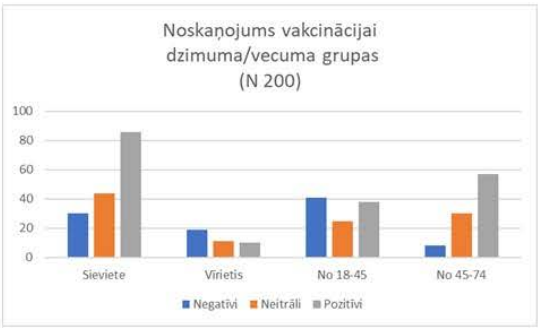
Aktualitāte / Mērķis

Noskaidrot ģimenes ārstu prakses pacientu attieksmi ietekmējošus faktorus covid 19 vakcinācijas procesa sākumposmā



Metodes

- Kvantitatīvs, neeksperimentāls, šķērsgriezuma aprakstošs pētījums
- Aptaujas anketa (izmantotas sociālās vietnes)
- Izslēgšanas kritēriji: Latvijas ģimenes ārstu pacienti, kas jaunāki par 18 gadiem, vai vecāki par 75 gadiem, kā arī citu valstu ģimenes ārstu piederošie pacienti.
- Ieslēgšanas kritēriji: Latvijas ģimenes ārstu prakses pacienti, vecumā no 18 līdz 75 gadiem.

Multiple Response kross tabulācijas tendences:
(1. Ja respondenti norādīja, ka tic vakcinācijai, viņiem bija augsta pozitīva attieksme – 89%;
2. Ja respondenti norādīja, ka netic vakcīnai, bija augsta negatīvā attieksme – 85%;
3. Respondentu norādījums par neziņu- radīja neitrālu attieksmi

Rezultāti

Pētījumā piedalījās 160 sievietes un 40 vīrieši, vecuma kategorijā no 18 līdz 75 gadiem.

Vecuma grupā no 18 līdz 45 salīdzinoši ar otru – 46-74, ir vērojama tendence neizmantot ģimenes ārstu kā informācijas ieguves veidu (69,2% pret 47,4% attiecīgi) (p<0,05; 0,002), līdzīgi notiek arī ar zinātnisko literatūru, kur pirmajā grupā izmanto mazāk nekā otrajā (17,3% pret 30,5% attiecīgi)(p<0,05; 0,028).

Statistiski nozīmīgi dati (p < 0,05; 0,000) ir vērojami pa dzimuma sadalījumu starp sievietes kopumā uztver vakcināciju pret Sars-Cov-2 pozitīvāk nekā vīrieši.

Statistiski nozīmīga korelācija (p < 0,05; 0,000) starp attieksmi un vecuma sadalījumu pa respondentu grupām, t.i. vecuma grupā no 18 līdz 45 ir neliels, bet pārsvars uz negatīvo attieksmi (39.4%), bet vecuma grupā no 46 līdz 74 gadiem izteikta ir pozitīva tendence (60,0%).

Secinājumi

- Sociālo tīklu izmantošana un informācijas iegūšana no draugu loka, rada tendenci uz negatīvo attieksmi
- SPKC, ģimenes ārsts un zinātniska literatūra rada pozitīvu respondentu attieksmi
- Augstākā izglītībā rada pozitīvāku noslieci līdztekus aktīvi nodarbinātam iedzīvotāju slānim
- Gados jaunāki respondenti atzīmē vairāk negatīvu attieksmi nekā gados vecāki
- Sievietes attiecās pret vakcināciju pret Sars-Cov-2 pozitīvāk nekā vīrieši
- Tādi informācijas ieguves veidi kā televīzija, radio, ģimenes locekļi, nerada statistiski nozīmīgu iespaidu uz respondentu attieksmi pret vakcināciju

Health changes among older individuals before and during the COVID-19 pandemic in Latvia

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IEGULDĪJUMS TAVĀ NĀKOTNĒ

Actuality / The Goal

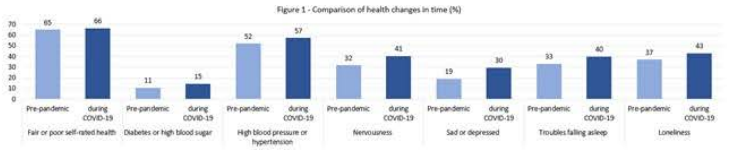
In order to implement the necessary measures to prevent consequences of the COVID-19 pandemic among older individuals, long-term assessment of health status is needed.
Early impact of the COVID-19 pandemic can be associated with changes in mental and physical health, but as the COVID-19 pandemic has challenged the capacity of healthcare systems in long-term, it can potentially compromise other health outcomes as well.
The objective of the study was to evaluate changes in health before and during the COVID-19 pandemic and investigate differences between gender and age groups.

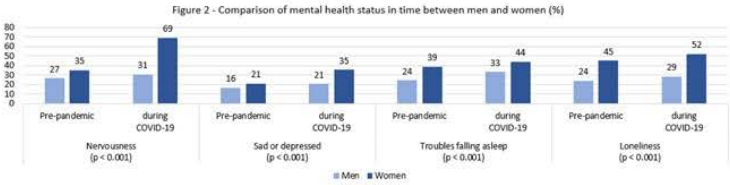
Method

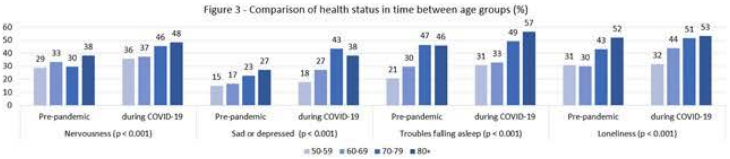
The study was based on a sample of older individuals from the Wave 7, Wave 8 + Covid-19 add-on and Covid-19 add-on from the Wave 9 of the Survey of Health, Ageing and Retirement in Europe (SHARE) in the period from 2017 till 2021. The sample consisted of 603 respondents from Latvia, who participated in the longitudinal research and were at least 50 years old.
In order to ensure representativeness of the data, weighting procedure was performed by using cross-sectional individual weight.
Descriptive statistics, as well as inferential statistics (Chi-Square test, McNemar test, univariate and multivariate binary logistic regression) were used to analyze the results. P < 0,05 was set as the significance level.

Results

- Overall, there was no statistically significant increase in proportion of respondents with fair or poor self-rated health, diabetes or high blood sugar, high blood pressure or hypertension pre- and during COVID-19 pandemic. The proportion of respondents with mental health problems has statistically significantly (p<0.001) increased during COVID-19 pandemic (see Figure 1).
- Worsened health status during the first wave of COVID-19 pandemic was reported by 7,6% of the respondents. In 2021 proportion of respondents with worsened health status has increased to 19,2%.
- The proportion of respondents who never left home since COVID-19 pandemic decreased from 13,2% during the first wave of pandemic to 7,7% in 2021.
- Comparison of mental health problems between men and women and age groups is presented in Figure 2 and Figure 3.







Groups	Nervousness during the second wave of COVID-19		Sad or depressed during the second wave of COVID-19		Troubles falling asleep during the second wave of COVID-19		Loneliness during the second wave of COVID-19	
	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
50-59	Reference category							
60-69	1.07 (1.05-1.08)	1.02 (0.99-1.03)	1.73 (1.70-1.76)	1.67 (1.64-1.70)	1.10 (1.08-1.12)	1.07 (1.06-1.09)	1.68 (1.66-1.71)	1.60 (1.58-1.63)
70-79	1.51 (1.49-1.53)	1.38 (1.35-1.40)	3.52 (3.46-3.59)	3.26 (3.20-3.32)	2.16 (2.12-2.19)	2.05 (2.02-2.09)	2.30 (2.26-2.34)	2.05 (2.02-2.09)
80+	1.68 (1.65-1.71)	1.50 (1.47-1.52)	2.84 (2.78-2.90)	2.55 (2.51-2.61)	2.92 (2.87-2.97)	2.74 (2.70-2.79)	2.48 (2.44-2.52)	2.13 (2.53-2.59)
Men	Reference category							
Women	1.96 (1.94-1.98)	1.87 (1.84-1.89)	2.08 (2.05-2.11)	1.86 (1.84-1.89)	1.58 (1.56-1.59)	1.42 (1.40-1.43)	2.76 (2.72-2.79)	2.55 (2.52-2.59)

Conclusions

Since COVID-19 pandemic there is minimal, non-significant proportional increase in respondents with poor or fair self-rated health status and with newly diagnosed health conditions as diabetes and high blood pressure. These changes cannot be directly associated with COVID-19 pandemic but could be more related to the ageing process.
The results indicate increased proportion of respondents who reported nervousness, sadness or depression, troubles falling asleep and loneliness during the second wave of COVID-19 pandemic. Women experienced mental health problems more often than men as well as respondents in older age groups in both periods of time, and had higher odds for mental health problem development during COVID-19 pandemic.

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[3] Project/agreement No. 1.1.1.2/VIAA/3/19/540 'Challenges of ageing in the Baltic Sea region'

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Impact between Covid-19 and CO2 in students' premises in some Baltic States

Piia Tint, TalTech, Marina Järvis, EUAS, Ada Traumann, TTK University of Applied Sciences Estonia
Valentina Urbane, RTU, Latvia

Actuality / The Goal

Introduction:

People need clean air indoors. It could be managed with ventilation and monitoring of CO2 (carbon dioxide) content. When level of CO2 is low, there are no aerosols and viruses (Covid 19) that spread with finest particles.

TalTech- Tallinn University of Technology
TTK- TTK University of Applied Sciences
EUAS- Estonian Entrepreneurship University of Applied Sciences in Tallinn
RTU- Riga Technical University

Methods

Material and methods:
The measurements of CO2 and the questionnaire of health matters with students of 4 high schools in Estonia and Latvia in auditoriums (clean or stuffy air? following the demands? wearing masks? etc.) was carried out autumn of 2019 and 2021. ANOVA statistics used for questionnaire ($p<0.001$, $\alpha=0.93$).
For measurements of carbon dioxide, the following standard methods have been used: EVS-EN- ISO 7726:2003 „Ergonomics of the thermal environment – Instruments for measuring physical quantities". The measuring equipment used – TESTO 435. TESTO 435 allows to measure the concentration of CO2 (0 ppm…10,000 ppm).

Results

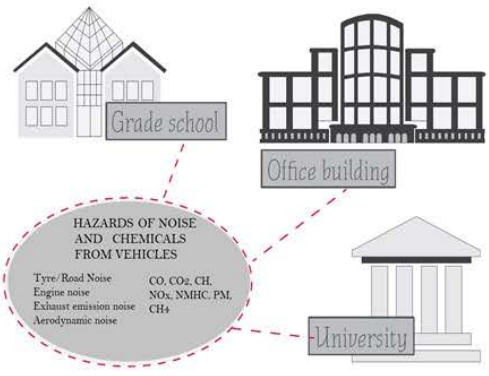
The high levels of CO2 inside the auditoriums are related to the outside ones (high in big towns). The inside levels were high in Riga (RTU-Riga Technical University) in 2019, but decreased sharply in 2020. Concentration of CO2 outside the buildings (2019) in towns was 500 ppm (measured near a busy street), this decreased in 2020 after covid19 Pandemic began (from 500 to 350) and according this, decrease of CO2 also indoors. Results (in 2021) showed differences between high schools in Estonia (internally) and compared with RTU. Demands on prevention from Covid 19 of national bodies are different and change every week, the same for contact education in high schools. The students are more disciplined to follow demands in Latvian University.
The decrease of noise and carbon dioxide levels help people staying healthy and the environmental impact from the investigation is focusing the attention on the necessity and possibilities to decrease the concentration of CO2 in the ambient air.
The future research can be carried out in hot environments and in summer time, when the CO2 levels in towns are higher. It concerns universities if summer-time studies in the universities are carried out.

The auditorium	Concentration of CO2 at the beginning of the lesson, ppm	After 45 min, ppm	After 10 min break, ppm	After lesson 45 min, ppm
TalTech (90 students)	510	1180	1193	1282
EUAS (30 students)	470	580	581	799
TTK (41 students)	550	1001	980	1180
RTU (55 students)	590	1100	990	1281




TTK , EUAS, RTU, TalTech

Conclusions
CO2-rich air signals about increased risk of getting virus. Recommendations studying in conditions of Covid 19: follow the distance between each other (2 metres), wear a mask with filter, carry out ventilation during lections and the breaks even more effective ventilation (if possible: natural).



Impact of the Covid-19 pandemic on the emotional well-being of primary care professionals.

Baiba Sirmā, Cindy Heaster, Elizabete Krista Rebaine, Doc. Sandra Gintere

Actuality / The Goal

At the end of 2019, news of a new virus were spreading around the world. SARS-CoV-2 spread rapidly from Wuhan province in China. In March 2020, the World Health Organization declared a pandemic, at which time the virus had reached Latvia.
This work is based on data collected in the framework of the international study PRICOV-19. PRICOV-19 is a study led by Prof. Sarah Willems and Esther Van Poel (Ghent University, Belgium) involving more than 35 Member States.
One of the aims of the study is to find out whether the Covid-19 pandemic has affected the emotional well-being of GPs, and what self-care methods are used to maintain it.

Methods

- Questionnaire validation. Questionare was developed by a team of researchers from Ghent University.
- Sending a questionnaire to GPs electronically using platform REDCap. Data collection period 14.01.2021. – 25.04.2021.
- The collection, cleaning and storage of data is the responsibility of the University of Ghent, and Member States receive anonymised data.
- Data analysis using IBM SPSS program, descriptive statistical methods, qualitative data processing methods - Pearson Chi-square test, Fisher's exact test, nonparametric data processing methods - Cruskol-Wallis test. The significance level of the study is $\alpha = 0.05$.

Results

Questionnaires were sent to 966 general practitioners throughout the territory of Latvia.
258 questionnaires received: 119 fully completed, 138 partially completed.
Comparing the relationship between the location of the placement and other variables, cities and suburbs are grouped together due to the small number of respondents in the suburbs.

- 39% of respondents represent cities, 26% small towns, 20% cities with rural areas, 14% rural areas.
- The average number of patients registered in practice is 1951, minimum 620, maximum 5300.
- In practice, 94% of cases are staffed by one certified family doctor, the total number of employees in practice is on average 4 people.
- 64% of the respondents admit that during the last month they feel the signs of burnout syndrome, there is a statistically significant correlation between the signs of burnout and the location of the practice, Pearson's chi-square test, $\chi2$ (3, N = 116) = 12.49, p = 0.006. (Table 1)
- 59% of respondents note that depressed mood, feelings of hopelessness, signs of depression are more common in the last month, there is a statistically significant relationship between these signs and the location of the practice, Pearson's chi-square test, $\chi2$ (3, N = 118) = 11.26, p = 0.010. (Table 2)
- The most popular self-care methods are reading books (23 respondents), walking in the fresh air (44 respondents), regular physical activity (41 respondents).

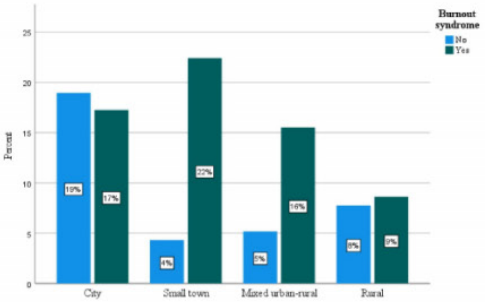


Table 1. Location of practice

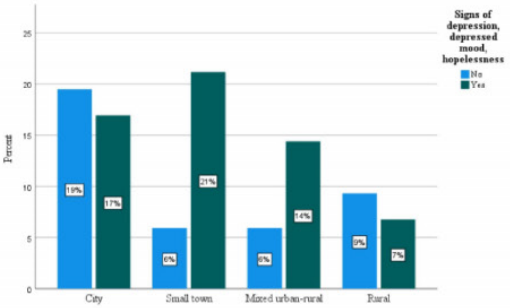


Table 2. Location of practice

Conclusions

- The Covid-19 pandemic has had a negative impact on the emotional health of primary care professionals.
- General practitioners working in small towns and cities with rural areas are at greater risk of experiencing emotional health problems.
- The majority of Latvian general practitioners were either depressed, at risk of depression or experiencing burnout during the Covid – 19 pandemic.
- The most popular self-care methods are: walking in the fresh air, reading books, regular physical activity.

For the future

- To compare the results of Latvia with the results of other research member states.
- Investigating interventions to reduce burnout and depression in Latvian general practitioners.

Influence of the COVID-19 pandemic on occupational health and safety – perception of occupational health and safety experts in Latvia

Linda Matisāne, Lāsma Akūlova, Linda Paegle, Ivars Vanadziņš

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Actuality / The Goal

International Labour Organization has recognized that occupational safety and health (OSH) experts play a key role in COVID-19 prevention at workplaces as the principles of the management in both situations are similar – the utilization of the hierarchy of controls, a system that labels and prioritizes the risk controls from the most to least effective [1]. However, not much research has been done on the possible implications of this additional role of OSH experts on health and safety at work and the protection of workers against workplace injuries and occupational diseases.

Methods

Focus group discussions as part of the study "Work conditions and risks in Latvia, 2019-2021" were organized to gather the opinion of OSH experts in January 2022. Two discussions with 9 and 8 participants per group were held with OSH experts (one group with external OSH service providers, another one – with company internal OSH experts).
For this research, only the following question from the guidelines was used: "**In general, what do you think is the effect of the COVID-19 pandemic on the attitude of the employers towards OSH and you as OSH experts?**".
After transcribing process, a conventional content analysis was provided, categories identified and the best-supporting quotes selected (market with Q and numbered in the Result and Quote sections).

Results

The results of the focus group discussions show that the implications of the COVID-19 pandemic on OSH cover two areas: the attitude of the employers towards OSH in general and the workload and the work content of OSH experts (for details on identified categories see Table 1).
If in general, most of the focus group participants (11 out of 17) agreed that the attitude towards OSH has not changed from the side of the employers (Q1), then the attitude towards OSH experts has improved (Q1). It was stressed during the discussions, that in most cases, the management of the COVID-19 pandemic at the workplace level has been done/coordinated by OSH experts (Q2, Q3) and this has resulted in several problems.
On one hand, this was additional work for OSH experts and therefore, less attention was paid to OSH at the company level (e.g. time for doing workplace risk assessment or doing surveillance of onsite workplaces). On the other hand, the work related to OSH was not possible to be done in the traditional way as the working conditions had changed (e.g. telework – Q4) and the COVID-19 epidemiological requirements restricted visits of workplaces to perform onsite risk assessment, provide supervision of workplaces (Q5). In addition, distant training had to be implemented. Furthermore, some employers also reduced the amount of finances to be invested in OSH (Q6).
In general, that means that the workload and the complexity of the work of the OSH experts have increased during the COVID-19 pandemic (Q7).

Supporting quotes

Q1 *"I think that the attitude towards OSH is the same…. But now the employers treat OSH experts more seriously as most of the COVID issues are managed through OSH"* (internal)
Q2 *Everything related to the management of COVID [pandemic at work] has been delegated to OSH experts"* (external)
Q3 *"My colleagues are laughing that we are more a department of COVID management and less an OSH department"* (internal)
Q4 *"The pandemic has promoted new forms of work. For example, telework… It is complicated for the OSH expert to assess hazards, working conations, workplace and so on at home"* (external)
Q5 *"For us it is important to be onsite – to meet people, to see working conditions, everything can't be done from distance. And because of all the [epidemiologic] requirements… it is heavily"* (external)
Q6 *"[Employers] are carefully calculating how to save costs and therefore proportionally also expenses on OSH are limited"* (external)
Q7 *"In principle, also for me as a specialist – it is not easy"* (external)

Table 1. Categories identified in focus group discussions

Category	External OSH experts (n = 9)	Internal OSH experts (n = 8)	Total (n = 17)
Attitude towards OSH has not changed	n = 7	n = 4	n = 11
Attitude towards OSH experts has improved	n = 3	n = 3	n = 6
The workload of OSH experts has increased	n = 3	n = 4	n = 7
The content of the work has become more complex	n = 4	n = 2	n = 6

Conclusions

At the individual level, the increased workload and the complicity of the tasks during the COVID-19 can lead to the burnout of individual OSH experts. At the public health level, it seems that along with work-related mental health issues resulting from the COVID-19 pandemic, the burden of workplace accidents and occupational diseases can also be predicted. Therefore, it is essential between the waves of the pandemic to switch the focus of the work of OSH experts back from the management of the COVID-19 pandemic in the workplaces to general OSH aspects through repeated workplace risk assessments, onsite surveillance of OSH performance as well as face-to-face training.

[1] World Health Organization. Preventing and mitigating COVID-19 at work: policy brief, 19 May 2021. Available: https://www.who.int/publications/i/item/WHO-2019-nCoV-workplace-actions-policy-brief-2021-1

Izmaiņas narkotiku tirgū un narkotiku lietošanas paradumos Coivd-19 ierobežojumu laikā problemātisko narkotiku lietotāju populācijā, 2020. gadā

Laura Isajeva[1], Asoc. prof. Anda Ķīvīte-Urtāne[1,2], Prof. Dr. med. Ģirts Briģis[1,2], Diāna Vanaga-Arāja[3], Dr. Aija Pelne[3], Ruta Kaupe[4]

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Aktualitāte / Mērķis

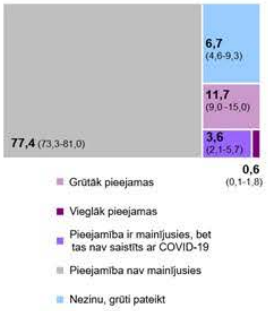
Pandēmija un epidemioloģiskās drošības pasākumi Covid-19 infekcijas izplatības ierobežošanai ietekmēja daudzas dzīves jomas, t.sk. atstājot iespaidu uz narkotisko vielu pieejamību un lietošanas paradumiem. Problemātiskie narkotiku lietotāji (PNL) ikdienā būtiski atkarīgi no psihoaktīvām vielām (opioīdi, amfetamīni), tāpēc sagaidāms, ka pandēmijas laikā pieprasījums šajā populācijā nemainīsies. EMCDDA un Europol uzraudzības dati liecina, ka narkotiku tirgus spēj ātri pielāgoties izmaiņām, bet dažviet tiek novēroti narkotisko vielu piegādes traucējumi. Pieejamības traucējumi, var veicināt PNL mainīt ierastos narkotiku lietošanas paradumus, gan samazinot patēriņu, gan pārejot uz citām, vieglāk pieejamām vai zemākas kvalitātes vielām. Šīs analīzes mērķis ir aprakstīt narkotiku pieejamības un lietošanas paradumu izmaiņas PNL kohortā Latvijā 2020. gadā.

Metodes

Šķērsgriezuma analīzē tika izmantoti Narkotiku lietotāju kohortas pētījuma 12. posma 2020. gada dati. Pētījumu veica Slimību profilakses un kontroles centrs sadarbībā ar biedrību «DIA+LOGS». 2020. gada aptaujā piedalījās 480 PNL. Pētījuma lauka darbs norisinājās 2020.gada oktobrī un novembrī. Jautājumi par narkotisko vielu pieejamības izmaiņām aptvēra periodu no Covid-19 pandēmijas pasludināšanas līdz aptaujas brīdim. Tika veikta aprakstošās statistikas analīze ar IBM SPSS datorprogrammu.

Rezultāti

Pētījuma dalībnieku vidējais vecums – 39,6 gadi (SD 7,9), trešdaļa - sievietes (33,5%; TI 29,3-38,0). Lielākā daļa (92,5%) respondentu narkotikas lieto 10 un vairāk gadus. Kopš pandēmijas pasludināšanas lielākai PNL daļai narkotisko vielu pieejamība nav mainījusies - 77,4% (TI 73,3-81,0), bet 11,7% (TI 9,0-15,0) tās kļuva grūtāk pieejamas. Naudas līdzekļu mediānā summa narkotiku iegādei bija 150 Eur mēnesī, un pēdējo četru gadu laikā tā bija stabila. Lielāka daļa PNL ziņo, ka Covid-19 pandēmijas laikā narkotiku cena nav mainījusies (82,5%; TI 78,8-85,9), un tikai 2,6%(TI 1,3-4,4) ziņo par cenu palielinājumu. 11,4% (TI 8,7-14,6) PNL atzīst, ka narkotisko vielu kvalitāte pasliktinājās. Narkotiku kvalitātes izmaiņas atzīst vēl 16,9%(TI 13,7-20,6), bet viņuprāt, tas nav saistīts ar Covid-19 pandēmiju.

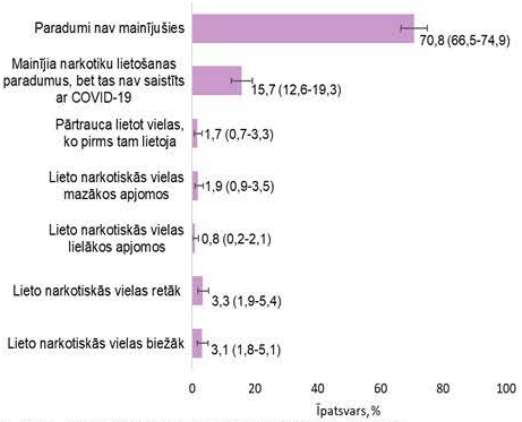


1. attēls. Narkotisko vielu pieejamības izmaiņas Covid-19 ierobežojumu dēļ, %

2. attēls. Narkotisko vielu tīrības un kvalitātes izmaiņas Covid-19 ierobežojumu dēļ, %

3. attēls. Narkotisko vielu tīrības un kvalitātes izmaiņas Covid-19 ierobežojumu dēļ, %

Lielākai daļai PNL narkotisko vielu lietošanas paradumi nav mainījušies Covid-19 pandēmijas apstākļos (70,8%; TI 66,5-74,9). Tomēr pārējo respondentu vidū, kuri ziņoja par paradumu maiņu, liela daļa to nesaista ar Covid-19 pandēmiju (15,7%; TI 12,6-19,3). Vienlīdzīgi daudz respondentu sākuši lietot narkotikas biežāk vai retāk, proti 3,1% (TI 1,8-5,1) un 3,3% (TI 1,9-5,4).



4. attēls. Narkotisko vielu lietošanas paradumu izmaiņas Covid-19 ierobežojumu dēļ, %.

Secinājumi

Kopumā lielākā daļa PNL nav novērojuši pieejamības izmaiņas narkotiku tirgū. To apstiprina arī Latvijas ekspertu viedoklis, ka narkotisko vielu cenas un pieejamība nav mainījusies. Tomēr lielāka daļa citu valstu ekspertu ziņoja par cenu palielinājumu un pieejamības samazinājumu. Balstoties uz šiem rezultātiem nevar izdarīt viennozīmīgu secinājumu par izmaiņām narkotiku tirgū, jo pirmkārt, šie ir subjektīvi dati, kurus būtu jāapstiprina ar objektīviem datiem, bet otrkārt pieejamība un pieprasījums PNL populācijā var atšķirties no citiem narkotiku lietotājiem.
Savukārt narkotiku lietošanas paradumu izmaiņas PNL vidū apstiprina ekspertu prognozes, ka tie būtiski nemainījās Covid-19 apstākļos. Narkotisko vielu pieejamības samazinājums lielākai daļai PNL var veicināt mainīt narkotiku veidu, pāriet uz zemākas kvalitātes vielām, vai meklēt citas vielu lietošanas alternatīvas. Šīs analīzes rezultāti apstiprina, ka lielākai daļai PNL narkotiku lietošanas paradumi nav mainījušies. Tikai neliela daļa ziņo par patēriņa samazinājumu vai pāreju uz citām vielām.
Lai pilnvērtīgi novērtētu Covid-19 pandēmijas ietekmi uz narkotiku lietošanas paradumiem, būtu jāveic padziļinātāka izpēte dažādās narkotiku lietotāju populācijās, pielietojot arī objektīvus rutīnas statistikas datus.

Latvijas iedzīvotāju baiļu uztveres atšķirības par Covid-19 vakcinēšanos.

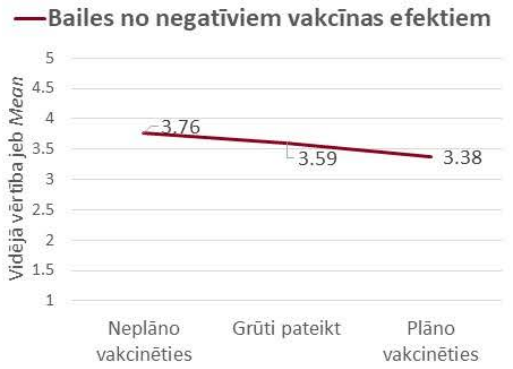
Gatis Upesleja, Viktorija Perepjolkina
Rīgas Stradiņa universitāte

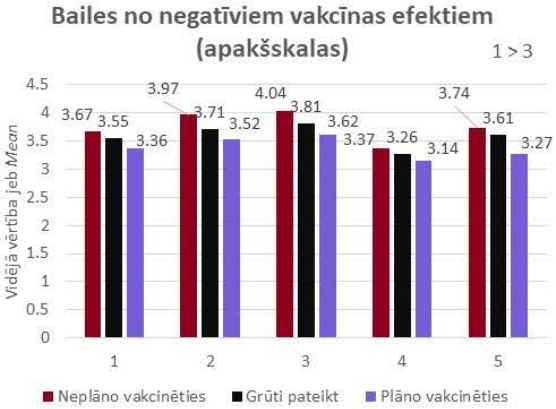
Aktualitāte / Mērķis

Covid-19 vakcīnas pašlaik ir efektīvs ierocis, ar ko stāties pretī un uzveikt notiekošo pandēmiju. Bailes, kas izraisa paaugstinātu pacientu rezistenci pret vakcīnu, ir balstītas gan uz vieglām, gan smagām reakcijām pēc vakcinācijas un laika starpību starp devām (*Borriello et al.*, 2021).
Vakcīnas vilcināšanās, aizkavēšanās ar vakcināciju vai vakcinācijas atteikums, neskatoties uz vakcinācijas pakalpojumu pieejamību, ir atzīts par vienu no lielākajiem draudiem sabiedrības veselībai globālā līmenī (*De Sousa et al.*, 2021).
Mērķis: Noskaidrot Latvijas iedzīvotāju baiļu uztveres atšķirības starp tiem iedzīvotājiem, kuri plāno un neplāno vakcinēties Covid-19.

Metodes

Pētījuma izlase: Pētījumā piedalījās 18 – 75 gadu veci Latvijas iedzīvotāji (vīrieši 46,2%, sievietes 53,8%), reprezentatīva izlase. Visi pētījuma dalībnieki (N = 1017) tika sadalīti, balstoties uz viņu atbildēm par nodomu vakcinēties. Dalībnieki tika sadalīti 3 grupās - 346 (34%) neplāno vakcinēties, 130 (13%) plāno vakcinēties, bet 62 (6%) grūti pateikt. Pārējie pētījuma 479 (47%) dalībnieki ir jau vakcinējušies.
Procedūra: Dati tika ievākti 2021.gada septembrī, oktobrī.
Instrumentārijs: No VPP Interframe-LV aptaujas kopuma, tika izmantota sociāldemogrāfiskā aptauja un skala ''Bailes no negatīviem vakcīnas efektiem'' ar apakšskalām:
1) Bailes no alerģiskas reakcijas pēc vakcīnas ievadīšanas;
2) Bailes no citu smagu blakusparādību parādīšanās pēc vakcīnas ievadīšanas;
3) Bailes no potenciāli nezināmām ilgtermiņa sekām no vakcīnas;
4) Bailes no iespējamas nelabvēlīgas ietekmes uz reproduktīvo sistēmu;
5) Bailes no iespējamu autoimūnu reakciju rašanās pēc vakcīnas ievadīšana





Rezultāti

Rezultāti uzrādīja, ka pastāv statistiski nozīmīgas atšķirības starp grupām, kuri plāno un neplāno vakcinēties, apakšskalā ''Bailes no alerģiskas reakcijas pēc vakcīnas ievadīšanas''. Statistiski nozīmīgas atšķirības starp grupām pastāv arī apakšskalā par bailēm no citu smagu blakusparādību parādīšanos pēc vakcīnas. Tāpat statistiski nozīmīgas atšķirības parādās starp grupām apakšskalā ''Bailes no potenciāli nezināmām ilgtermiņa sekām no vakcīnas''. Pētījuma rezultāti uzrāda, ka pastāv statistiski nozīmīgas atšķirības starp grupām apakšskalā ''Bailes no iespējamas nelabvēlīgas ietekmes uz reproduktīvo sistēmu''. Kā arī pastāv statistiski nozīmīgas atšķirības starp grupām apakšskalā ''Bailes no iespējamu autoimūnu reakciju rašanās pēc vakcīnas ievadīšana''.
Kā arī rezultāti uzrādīja, ka pastāv statistiski nozīmīgas atšķirības starp grupām, kuri plāno un neplāno vakcinēties, kopējā skalā par bailēm no negatīviem vakcīnas efektiem.

Secinājumi

No pētījuma rezultātiem var secināt, ka Latvijas iedzīvotāju nodomu vakcinēties vai nevakcinēties pret Covid-19 ietekmē bailes no negatīviem vakcīnas efektiem. Proti, jo cilvēkam ir lielākas bailes par alerģiskām reakcijām pēc vakcīnas ievadīšanas, bailes par citu smagu blakusparādību rašanos pēc vakcīnas, bailes par potenciāliem nezināmiem ilgtermiņa sekām no vakcīnas, bailes no iespējamas nelabvēlīgas ietekmes uz reproduktīvo sistēmu, kā arī bailes no iespējamu autoimūnu reakciju rašanos pēc vakcīnas, jo lielāka iespēja, ka cilvēka nodoms vakcinēties būs negatīvs. Šie pētījuma rezultāti norāda, ka ir nepieciešams vairāk un plašāk izglītot Latvijas iedzīvotājus par vakcīnas ieguvumiem un iespējamām blakusparādībām, lai mazinātos iedzīvotāju bailes no vakcīnas iegūšanas. Uzrunāt sabiedrību televīzijā, laikrakstos, dažādās sociālo mediju platformās, kā *Facebook*, *Instagram*, *Twitter*, *TikTok* un citās platformās, lai tiktu aptverts lielāks un dažādāks vecuma diapazons. Citu valstu pētījumi uzrāda, ja par vakcīnas nepieciešamību stāsta ārsti, tad iedzīvotājiem mazinās šīs bailes un palielinās uzticamība sniegtajai informācijai.

Latvijas iedzīvotāju mirstība 2021.gadā sadalījumā pēc vakcinācijas pret Covid-19 statusa

Jolanta Skrule, Santa Pildava, Jana Lepiksone

Slimību profilakses un kontroles centrs

Slimību profilakses un kontroles centrs

Aktualitāte / Mērķis

Ir pierādījies, ka Covid-19 pandēmija būtiski ietekmējusi sabiedrības veselību kopumā. Daudzās pasaules valstīs, t.sk. Latvijā, vērojama papildu jeb virsnormas mirstība (*excess mortality*). 2021.gadā kopējais mirstības rādītājs (visi nāves cēloņi) Latvijā bija par 24,6% augstāks nekā pirms pandēmijas, t.i., piecu gadu vidējais rādītājs laika periodā no 2015.-2019.gadam.
Mērķis - noskaidrot, vai ir atšķirības mirstības rādītājos atkarībā no Covid-19 vakcinācijas statusa.

Metodes

Datu analīzē izmatoti Slimību profilakses un kontroles centra Latvijas iedzīvotāju nāves cēloņu datubāzes dati par visām mirušajām personām 2021.gadā, vecumu, nāves pamatcēloni (saskaņā ar SSK-10), katrai no tām pievienojot informāciju par vakcinācijas pret Covid-19 statusu no Nacionālā veselības dienesta informācijas sistēmas. Aprēķināti mirstības relatīvie rādītāji un analizēti trīs grupās: pilnībā vakcinēts pret Covid-19 (14 un vairāk dienu pēc pilna vakcinācijas kursa saņemšanas), uzsākta vakcinācija, nevakcinēts. Aprēķināti 95% ticamības intervāli. Veikta rādītāju standartizācija pēc vecuma. Attiecīgo riska populāciju relatīvo rādītāju aprēķinos izmantots Centrālās statistikas pārvaldes aprēķinātais iedzīvotāju skaits uz 2021.gada sākumu* un gada vidējais (balstīts uz ikmēneša vakcinācijas datiem) vakcinēto iedzīvotāju skaits, balstoties uz Nacionālā veselības dienesta datiem.

Rezultāti

2021.gadā Latvijā mirušas 34208 personas (provizoriski dati uz 01.03.2022.), no kurām nevakcinētas bija 27139 jeb 79,3%, uzsākušas vakcināciju – 1610 jeb 4,7%, pilnībā vakcinētas – 5459 jeb 16%.

1.attēls **Aprakstošā statistika**

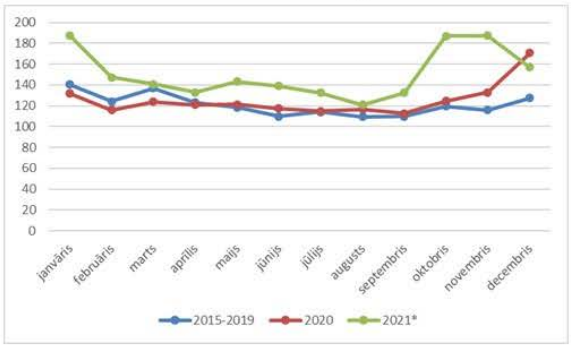
	Kopā	Pilnībā vakcinēti	Uzsākta vakcinācija	Nevakcinēti
Skaits	34208	5459	1610	27139
Vidējais vecums (SD)	74,8 (14,6)	74,6 (13,7)	74,7 (13,4)	74,8 (14,9)

Kopējā mirstība nevakcinēto grupā ir 2159 (±25) uz 100 000 iedzīvotāju, vakcināciju uzsākušo grupā - 892 (±45), pilnībā vakcinētajiem 1198 (±29) uz 100 000, kas ir par 44% zemāka nekā nevakcinētajiem. Pēc vecuma standartizācijas atšķirības pat pieaug: pilnīgi vakcinēto mirstība ir par 55% zemāka nekā nevakcinētajiem.

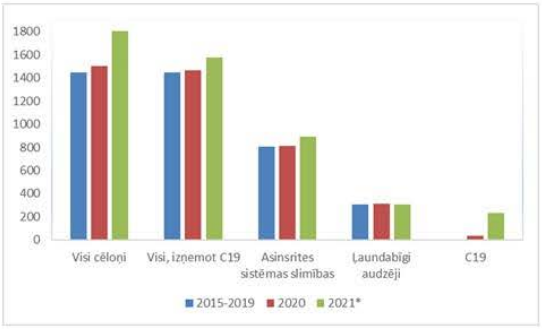
Mirstība no asinsrites sistēmas slimībām (I00-I99) nevakcinētajiem ir 1056 (±16), vakcināciju uzsākušajiem – 466 (±30), pilnībā vakcinētajiem- 614 (±24) uz 100 000 iedzīvotāju, kas ir par 42% zemāka nekā nevakcinētajiem (pēc standartizācijas 52%).

Mirstība no ļaundabīgajiem audzējiem (C00-C97) nevakcinēto grupā ir 352 (±10), vakcināciju uzsākušajiem - 132 (±14), pilnībā vakcinētajiem – 239 (±10) uz 100 000, kas ir par 32% (pēc standartizācijas 48%) zemāka nekā nevakcinētajiem.

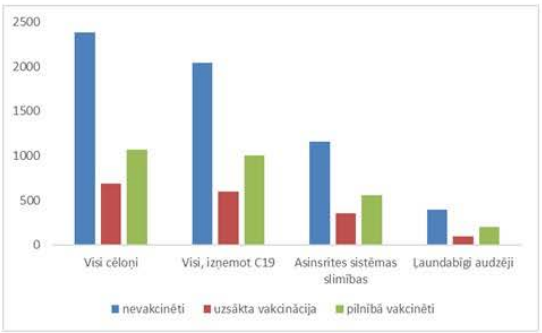
2.attēls **Kopējā mirstība pa mēnešiem, uz 100 000 iedzīvotāju**



3.attēls **Mirstība, uz 100 000 iedzīvotāju**



4.attēls **Vecuma standartizēta mirstība 2021.gadā, uz 100 000 iedzīvotāju**



Secinājumi

Sākotnējā analīze liecina, ka Latvijas iedzīvotāju mirstības rādītāji atšķiras grupās pēc vakcinācijas statusa. Nevakcinēto kopējais mirstības rādītājs ir būtiski augstāks nekā pilnībā vakcinēto grupā. Atšķirības vērojamas arī tad, ja no rādītāja tiek izslēgti mirušie Covid-19 dēļ – nevakcinētajiem ir divas reizes augstāka mirstība nekā vakcinētajiem.
Nepieciešami detalizētāki pētījumi, lai izprastu iespējamo jaucējfaktoru ietekmi, t.sk., veselības stāvoklis, veselības aprūpes pieejamība, veselībpratība. Tas varētu palīdzēt, plānojot turpmākos pasākumus negatīvās ietekmes uz sabiedrības veselību mazināšanai.

Learning to learn from COVID-19 pandemic: the experience of health care specialists

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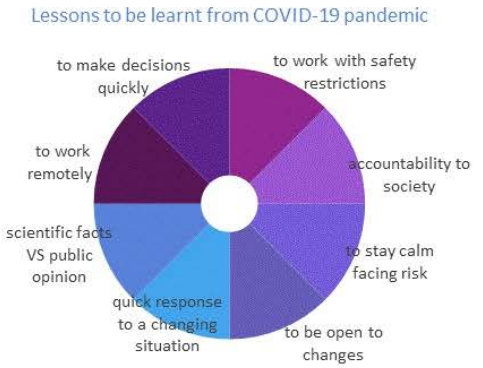
Relevance / The Goal

The effects of the COVID-19 pandemic include great stress and anxiety for all people, including health care specialists. However, it is also a unique experience from which it is important to learn. Learning to learn means gaining, processing, and assimilating new knowledge and skills, as it engages learners to integrate learning and life experiences in order to apply knowledge and skills at home, at work, in education, and in training contexts. The ability to transform challenges into opportunities to learn is an essential element of learning to learn. By proactively responding to COVID-19, the health care system has made remarkable progress. However, it is important to understand the scope of this progress on the individual level of health care specialists. Therefore, our research is focused on the personal experiences of health care specialists.



Methods

Participants. 15 health care specialists filled a survey in March 2022.
Data collection. An anonymous online survey of 10 open-ended questions was distributed to health care specialists who are studying or working in the field of health care. The questions were as follows: What kind of lessons have learned during the pandemic? Have you changed your point of view about knowledge due to the pandemic? What should change in the training of public health professionals in light of the pandemic experience?
Data analysis. The survey was originally in Lithuanian and afterward was translated into English. Quantitative *content* analysis employing MaxQda2022 was used for analysis.

Results

The main results are presented in a word-cloud and a pie chart. The word-cloud introduces the picture of meanings that are attributed to the experience of the COVID-19 pandemic. Health care specialists' experience of the pandemic mainly relates to meanings of change, knowledge, control, prevention, education, and mobility. The pie introduces the content of lessons to be learnt by health care specialists during the COVID-19 pandemic. Lessons to be learnt are related mainly to skill development such as working remotely and making decisions quickly. A few respondents noted some rather general lessons such as being open to changes and accountability to society.

Health specialists reported about experienced threats to their health, safety, and extra workload. Also, they had been suffering from stress, especially in the early stages of the pandemic. This might be a fruitful resource for resilience; however, it is a risk for professional burnout without the "learning to learn" strategy.

Health care specialists reported changing society's attitudes to health care and health due to the pandemic. This may be a valuable resource for changes in the health care sector. Due to a great variety of changes, we need learning to learn strategies to develop insights into the ongoing changes.

Conclusions

Health care systems continually adapt their responses to the COVID-19 pandemic. However, personal experiences are diverse and need to be studied more specifically.

Health care specialists talk about the experience of the pandemic as a collage of different pieces which is difficult to gather into one harmonious picture. It implies that health care professionals have no strategy for learning to learn from the experience of the pandemic. Learning to learn strategies help generate meaning for the new experience. They can make connections between different ideas and explain how the ideas are related and work together.

Societies all over the world have big expectations to return to a greater extent of normalcy. However, health care specialists wonder if it might take longer to come back to the pre-pandemic conditions. They see difficulties in defining the role of health care during the transitional period from pandemic to post-pandemic. The field of health care remains in transition from one vague period of the pandemic to another post-pandemic period. Therefore, it is important to have strategies for learning to learn from the experience of the pandemic.

MĀSU PROFESIONĀLĀS DZĪVES KVALITĀTE COVID-19 PANDĒMIJAS APSTĀKĻOS

Olga Šušerte, Agita Melbārde-Kelmere*

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Aktualitāte / Mērķis

Noskaidrot profesionālas dzīves kvalitātes komponentu rādītājus māsu izlasē COVID-19 pandēmijas apstākļos.

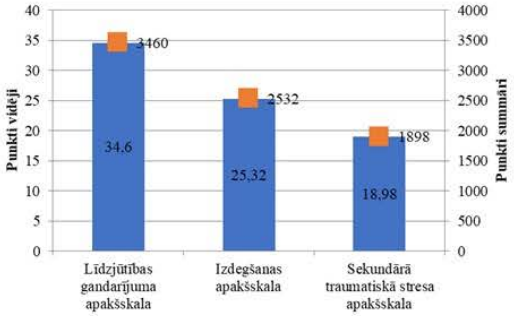
Māsas ir vislielākā veselības aprūpes sistēmas daļa.
Profesionālā dzīves kvalitāte ir būtiska, lai māsa spētu apmierināt savas personiskās vajadzības un sniedzot pacientam kvalitatīvu aprūpi, un sasniedzot organizatoriskos veselības aprūpes mērķus.

Metodes

Kvantitatīvs, salīdzinošs šķērsgriezuma pētījums

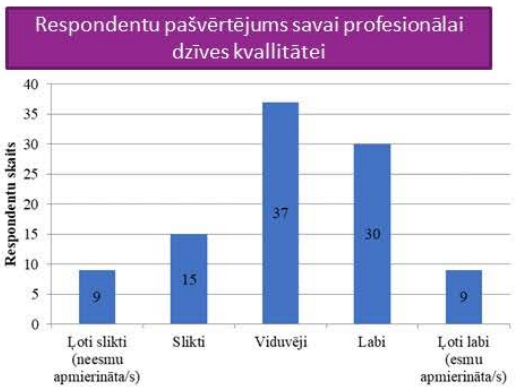
Pielietotie instrumenti:
Profesionālās dzīves īpatnību skala (ProQOL R-V), Līdzjūtības gandarījuma un noguruma apakšskalas

Ticamības pārbaudi – Kronbaha alfa koeficienta aprēķins
Atbilstības normālajam sadalījumam pārbaude – Kolmogorova-Smirnova Z testa aprēķins
Aprakstošās statistikas aprēķins – vidējo aritmētisko, minimālās un maksimālās vērtības
Secinošās statistikas aprēķins – korelācijas vai/un atšķirību aprēķins, Manna-Vitneja U kritērijs vai T tests.
Pētījuma dalībnieki bija Latvijas Republikas teritorijā reģistrētas un praktizējošas māsas.

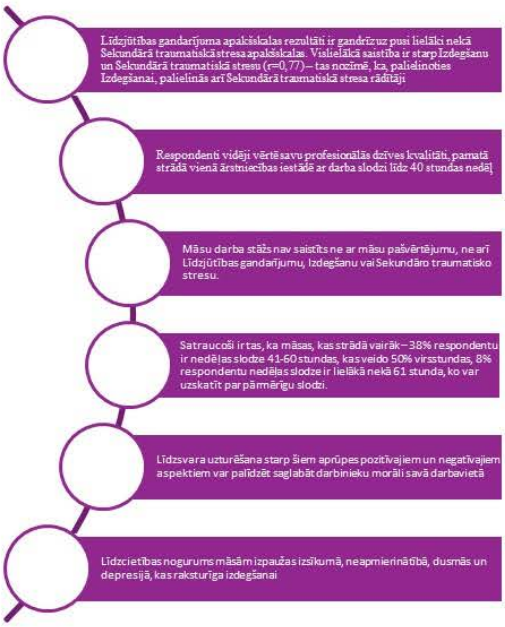


Rezultāti

- Pētījuma norises laiks 25.01.- 20.04.2021
- Aptauja publicēta visidati.lv mājaslapā
- Respondenti- 100 māsas (95 sievietes, 5 vīrieši)
- Vidējais respondentu vecums 36.8 gadi (21-64 gadi)



Secinājumi



Mirstības datu analīze saistībā ar vakcinācijas statusu personām, kuras ir pārslimojušas Covid-19

Santa Pildava, Slimību profilakses un kontroles centrs
Jurijs Perevoščikovs, Slimību profilakses un kontroles centrs
Jana Lepiksone, Slimību profilakses un kontroles centrs
Iveta Gavare, Slimību profilakses un kontroles centrs

Slimību profilakses un kontroles centrs

Aktualitāte / Mērķis

Latvijā 2021. gadā ir reģistrēti 33 947 nāves gadījumi jeb 1 793,1 gadījums uz 100 000 iedzīvotāju. Papildu mirstība 2021. gadā, salīdzinot ar 2015.-2019. gada vidējo mirstību, bija 343 gadījumi uz 100 000 iedzīvotāju jeb 23,7 % (provizoriskie dati, uz 01.02.2022). No visiem reģistrētajiem nāves gadījumiem 2021. gadā 4 344 gadījumos nāves pamatcēlonis bija Covid-19, tas ir 12,8 % no visiem reģistrētajiem nāves gadījumiem jeb 229 gadījumi uz 100 000 iedzīvotājiem. 2021. gadā Latvijā bija veikti plaši pasākumi Covid-19 epidēmijas apkarošanai, tai skaitā plaša vakcinācijas kampaņa un stingrs normatīvais regulējums, kas veicināja vakcinācijas pret Covid-19 aptveri. Pētījumos pasaulē ir pierādīts, ka vakcinācija pret Covid-19 efektīvi novērš smagu slimības gaitu un mirstību no Covid-19.

Šīs datu analīzes mērķis bija veikt sākotnējo mirstības pēc Covid-19 pārslimošanas izvērtējamu saistībā ar vakcinācijas statusu.

Metodes

Datu analīzei tika izmantoti dati no Slimību profilakses un kontroles centra (SPKC) Latvijas iedzīvotāju nāves cēloņu datu bāzes, no kuras tika atlasīti visi 2021. gadā reģistrētie nāves gadījumi (n=33 947). Šie dati tika savietoti ar SPKC Covid-19 Epidemioloģisko gadījumu reģistrācijas sistēmu (EGRIS), lai iegūtu informāciju par laboratoriski apstiprinātu Covid-19 diagnozi (n=7879). Savukārt no Nacionālā veselības dienesta Vakcinācijas datu bāzes tika iegūta informācija par mirušo personu vakcinācijas statusu. Visus atlasītos nāves gadījumus iedalīja trīs grupās atkarībā no vakcinācijas statusa uz Covid-19 inficēšanās brīdi:

- pilnībā vakcinēta persona – pagājušas 14 vai vairāk dienas pēc pilna vakcinācijas kursa saņemšanas (n=509);
- daļēji vakcinēta persona – uzsākts vakcinācijas process, saņemta viena no divām vakcīnām, vai kopš otrās vakcīnas saņemšanas nav pagājušas 14 dienas (n=305);
- nevakcinēta persona – nav uzsākts vakcinācijas process (n=7065)

Datu analīzē tika rēķināts relatīvais risks (RR), par references grupu pieņemot nevakcinētas personas, kā arī vecuma standartizēts mirstības rādītājs uz 10 000 iedzīvotāju saistībā ar vakcinācijas statusu. Datu analīzē dati stratificēti arī pēc nozīmīgākajām nāves pamatcēloņu grupām.

Rezultāti

No visiem datu analīzē iekļautajiem nāves gadījumiem 89,7 % persona pirms inficēšanās ar Covid-19 nebija vakcinējusies pret Covid-19 (6,5 % gadījumu persona bija pilnībā vakcinēta). Vidējais vecums starp grupām būtiski neatšķīrās, attiecīgi 75,5 gadi (SD 12,9) nevakcinēto personu grupā, 74,9 (SD 12,8) vakcinēto personu grupā un 75,1 (SD 12,7) daļēji vakcinētām personām.

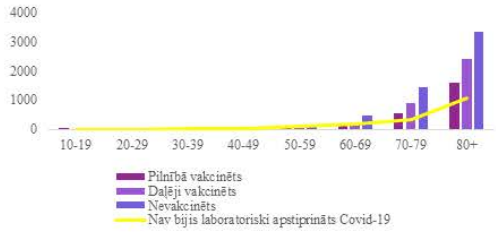
Analizējot datus pēc mirušās personas vecuma, redzams, ka pieaugot vecumam, pieaug arī mirstības rādītājs, visaugstākā mirstība visās trīs grupās ir vērojama pēc 70 (sevišķi pēc 80) gadu vecuma un šis rādītājs ir augstāks nekā personām, kurām nav bijis laboratoriski apstiprināts Covid-19.

Analizējot datus pa nāves pamatcēloņu grupām, redzams, ka visās trijās grupās biežākais nāves pamatcēlonis ir Covid-19, attiecīgi 61 % pilnībā vakcinētām personām, 65,2 % daļēji vakcinētām personām un 52 % nevakcinētām personām. Otrs biežākais nāves pamatcēlonis pēc inficēšanās ar Covid-19 ir sirds un asinsvadu slimības, attiecīgi 20 % pilnībā vakcinētu, 21 % daļēji vakcinētu un 27 % nevakcinētu personu.

Aprēķinot relatīvo risku, par references grupu pieņemot nevakcinētās personas, redzams, ka pilnībā vakcinētām personām risks nomirt pēc inficēšanās ar Covid-19 no jebkāda nāves cēloņa ir 2,5 reizes zemāks nekā nevakcinētām personām. Analizējot pa nāves cēloņu grupām, redzams, ka vakcinētām personām pēc inficēšanās ar Covid-19 risks nomirt no sirds un asinsvadu slimībām ir 3,6 reizes zemāks un risks nomirt no ļaundabīgiem audzējiem ir 2,9 reizes zemāks nekā nevakcinētām personām.

Vecuma standartizēta mirstība Covid-19 inficētām pilnībā vakcinētām personām ir 85,7 gadījumi uz 10 000 iedzīvotāju, daļēji vakcinētām personām – 138,5 gadījumi uz 10 000 iedzīvotāju un nevakcinētām personām – 217,3 gadījumi uz 10 000 iedzīvotāju.

Mirstība sadalījumā pa vecuma grupām saistībā ar vakcinācijas statusu 2021.gadā, uz 10 000 iedzīvotāju



Relatīvie riski, salīdzinot mirstību pilnībā vakcinētām vai daļēji vakcinētām personām ar nevakcinētām personām

	Vakcinācijas statuss	RR	95 % TI
RR (visi nāves cēloņi)	pilnībā vakcinēti	0,39	0,36-0,43
	daļēji vakcinēti	0,74	0,66-0,83
RR (visi nāves cēloņi bez Covid-19)	pilnībā vakcinēti	0,32	0,27-0,37
	daļēji vakcinēti	0,54	0,44-0,65
RR (nāves cēlonis sirds un asinsvadu slimības)	pilnībā vakcinēti	0,28	0,24-0,35
	daļēji vakcinēti	0,56	0,43-0,72
RR (nāves cēlonis ļaundabīgi audzēji)	pilnībā vakcinēti	0,34	0,25-0,47
	daļēji vakcinēti	0,43	2,67-0,69

Secinājumi

1. Latvijā 2021. gadā ir novērota papildu mirstība 21,6 %, salīdzinot ar vidējo mirstību 2015. – 2019. gadā.
2. 12,8 % no visiem 2021. gadā reģistrētajiem nāves gadījumiem ir bijuši tieši saistīti ar Covid-19, nāves pamatcēlonis ir bijis Covid-19 (U07 pēc SSK-10).
3. No visām 2021. gadā mirušajām personām, kuras bija inficējušās ar Covid-19, 89,7 % nebija vakcinējušās pret Covid-19.
4. Pēc Covid-19 pārslimošanas visās vecuma grupās, bet jo īpaši pēc 70 gadu vecuma, neatkarīgi no vakcinācijas statusa mirstība ir augstāka nekā personām, kuras nav slimojušas ar Covid-19.
5. Pilnībā vakcinētām personām pēc inficēšanās ar Covid-19 risks nomirt ir bijis 2,5 reizes mazāks nekā nevakcinētām personām.
6. Pilnībā vakcinētām personām, kuras ir inficējušās ar Covid-19, risks nomirt no sirds un asinsvadu slimībām ir bijis 3,6 reizes zemāks nekā nevakcinētām personām.
7. Jāņem vērā, ka šī ir sākotnējā datu analīze, kuru plānots atkārtot un padziļināt, kad būs pagājis ilgāks laiks posms, lai varētu novērtēt ilgtermiņa Covid-19 ietekmi uz mirstību.
8. Sākotnējā datu analīze norāda uz ievērojami zemāku mirstības risku pilnībā vakcinētām personām pēc inficēšanās ar Covid-19, salīdzinot ar nevakcinētām personām. Jāņem vērā, ka vakcinācijas aptvere riska grupās pieauga gada otrajā pusē, daļai vakcinēto personu vēl nav iespējams novērtēt ilgtermiņa ietekmi, jo kopš inficēšanās nav pagājis pietiekami ilgs periods.

Opinion of mental health care frontline workers on their preferred support during the COVID-19 pandemic

Gaibišele Agnese [1,2], Everte Ieva [1,3], Brūna Krista [4], Počopko Aļona [1,5], Dalbiņa Lolita [4], Taube Māris [1,2]

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Actuality / The Goal

- The COVID-19 pandemic has markedly increased the global incidence of anxiety (25,6%) and depression (27,6%) in 2020 [1].
- Frontline healthcare workers are exposed to greater psychological distress than general population, and it is well recognised that they need support in order to maintain their wellbeing [2-6].
- Mental health care frontline workers are subjects to multiple load of negative psychological consequences of the COVID-19 pandemic since they have to deal with increasing demand for mental health services.
- This multi-centre cross-sectional study aimed to screen anxiety and depression symptoms among frontline healthcare workers at Latvia psychiatric hospitals and to find out their opinion on preferred support.

Methods

- This study was conducted at admission wards of five Latvia psychiatric hospitals from March to May 2021.
- A questionnaire included demographic data, validated screening tool for anxiety (Generalised Anxiety Disorder Scale, GAD-7), validated screening tool for depression (Patients Health Questionnaire-9, PHQ-9), an open-ended question about respondents opinion on their preferred support to improve their psychological wellbeing.
- Data analysis was performed in MS Excel and IBM SPSS 27.

Results

There were 98 respondents with the mean age 45.5 (SD=11.8) years.

Clinically significant anxiety or depression symptoms (GAD-7 or PHQ-9 cut-off score 10) were found in 12.2% (n=12) and 17.3% (n=17) respondents, respectively.

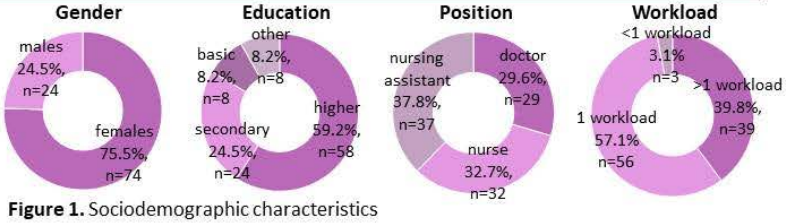

Figure 1. Sociodemographic characteristics

Table 1. Answers to open-ended question about preferred support

	Groups of answers	Examples of answers
1	other preferences that are out of control of the employer	"the end of pandemic", "cancellation of restrictions", "contact with relatives", "nature", "spring, the sun", "good reading"
2	reduced workload	"rest", "vacation", "less work"
3	additional remuneration	"to increase wage", financial support", "premium", "financial stimulus"
4	other preferences that at some extent could be supported by the employer	"physical activities", "psychotherapy", "entertainment and cultural events", "healthy food", "travelling", "spa"
5	do not know	

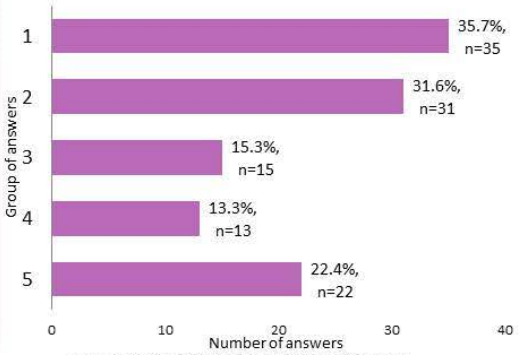

Figure 2. Opinion of mental health care frontline workers on their preferred support

Table 2. Analysis of answers associated with anxiety and depression

Variable	Anxiety (GAD-7 ≥ 10) Yes	No	P value	Depression (PHQ ≥ 10) Yes	No	P value
other preferences that are out of control of the employer			0.006			0.023
Yes	0 (0.0%)	35 (40.7%)		2 (11.8%)	33 (40.7%)	
No	12 (100.0%)	51 (59.3%)		15 (88.2%)	48 (59.3%)	
reduced workload			0.034			0.038
Yes	7 (58.3%)	24 (27.9%)		9 (52.9%)	22 (27.2%)	
No	5 (41.7%)	62 (72.1%)		8 (47.1%)	59 (72.8%)	
additional remuneration			0.474			0.656
Yes	1 (8.3%)	14 (16.3%)		2 (11.8%)	13 (16.0%)	
No	11 (91.7%)	72 (83.7%)		15 (88.2%)	68 (84.0%)	
other preferences that at some extent could be supported by the employer			0.591			0.324
Yes	1 (8.3%)	12 (14.0%)		1 (5.9%)	12 (14.8%)	
No	11 (91.7%)	74 (86.0%)		16 (94.1%)	69 (85.2%)	

Preferred reduced workload was associated with:
- higher level of education (x^2=14.523, p=0.002),
- higher rank position (x^2=14.959 p=0.001),
- more than one workload per month (x^2=12.073, p=0.002).

Conclusions

- Clinically significant anxiety and depression symptoms were found in 12.2% and 17.3% respondents, respectively.
- The optimal support for mental health care frontline workers with clinically significant symptoms of anxiety or depression on their opinion could be reduced workload.
- The healthcare worker groups that could benefit the most from reduced workload are those with higher level of education, higher rank position, more than one workload per month.

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Personalized Remote Monitoring and Prediction System for COVID-19 Patients

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Actuality / The Goal

Following the diagnosis of coronavirus, telemedicine monitoring of the patient's condition is the best strategy to prevent a large number of COVID-19 patients in hospitals. Continuous monitoring at home is necessary to make reasonable medical decisions, such as deciding whether a patient needs to be admitted to the hospital. By monitoring vital signs associated with COVID-19 prognosis, the use of telemedicine equipment at home can prevent patient's sudden deterioration and death from the disease by alerting patient and his doctor about abnormal vital signs. We did a retrospective analysis of patients who has COVID-19 vital signs and tested remote monitoring and prediction system. The system had to predict whether the patient would have a mild, moderate, or severe form of COVID-19 the next day based on person's vital signs.

Methods

We did a retrospective analysis and colected vital signs of 100 COVID-19 patients. All vital signs were then put down to a system day by day as if it was real time data collection. The system then analyzed all vital signs and suggested predictions of patient's tomorrow well-being. System's algorithms predicted whether patient will have mild, moderate or severe form of COVID-19.

Results

We collected vital signs of 100 patients, but analysis was performed only with 91 patients vital signs, because the data of 9 patients were insufficient. We collected patient's heart rate, systolic blood pressure, temperature, saturation and breathing rate. The 24-hour prognosis were calculated from retrospective data from 91 patients showed a mean prediction accuracy of 96,57% for breathing rate, 92,35% for the average heart rate prediction, 72,82% for the average saturation prediction, and a mean systolic blood pressure prediction of 94,92% and the average temperature prediction accuracy is 94,39%. Based on predictions of individual vital signs, the accuracy in predicting patient's current conditions is 90,07%. 6,673% of the predicted states were above the real state and 3,260% of the predicted states were below the real state (Table 1). When predicting patient's states of tomorrow, 84,89% of the predictions coincided with patient's actual states. 15,111% of the predicted states did not match the real state: 10,77% of the predicted states were higher than the real state and 4,341% of the predicted states were lower than the real state (Table 2).

Table 1. Predictions based on vital signs and the accuracy in predicting patient's current conditions.

		Prediction of condition	Current condition	
Higher state	6,673%	moderate	mild	6,298%
		severe	mild	0,06934%
		severe	moderate	0,3060%
Accurate state	90,07%	mild	mild	77,29%
		moderate	moderate	10,75%
		severe	severe	2,023%
Lower state	3,260%	mild	moderate	2,959%
		mild	severe	0,1371%
		moderate	severe	0,1631%

Table 2. Predictions for tomorrow based on vital signs and the accuracy in predicting patient's state of tomorrow.

		Predicted state for tomorrow	The real state of tomorrow	
Higher state	10,77%	moderate	mild	10,30%
		severe	mild	0,06934%
		severe	moderate	0,3997%
Accurate state	84,89%	mild	mild	71,80%
		moderate	moderate	10,99%
		severe	severe	2,091%
Lower state	4,341%	mild	moderate	3,917%
		mild	severe	0,1482%
		moderate	severe	0,2757%

Conclusions

The accuracy of the developed system and it's algorithm in predicting the mean respiratory rate, pulse, systolic blood pressure, and temperature of patients was over 90%. When predicting patient's states of tomorrow, 84,89% of the predictions coincided with patient's actual states. According to the obtained data of the retrospective analysis, after testing the scheme of the IT algorithm, it can be stated that the measured indicators adequately indicate the patient's condition and the developed monitoring system can be used to monitor patients with COVID-19.

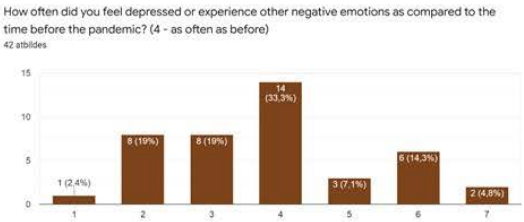
Part of the project No. 01.2.1-LVPA-T-858-01-0016

Physical Activities and Reported Emotional Well-Being among Experienced Adult Equestrians during Covid-19 Pandemic

Anastasija Ropa
Latvian Academy of Sport Education

Actuality / The Goal

This study explores the relation between physical activities and reported emotional well-being among adult equestrians who have five or more years of experience of working with horses. While physical activities have been decreased among all age groups worldwide, with an imposed sedentary lifestyle and the stress and emotional pressure have increased, it can be argued that experienced adult equestrians are more resistant to this tendency due to the nature of their sport. Horses demand daily care: unlike a bicycle, a horse cannot be put in a shed for the time of the pandemic. Also, equestrian activities can and often are conducted outdoors, and thus are less likely to be subject to restrictions designed to manage the pandemic. Thus, it is likely that physical activities among experienced adult equestrians, especially horse owners, have been sustained. It is also possible that equestrians are more resilient to the stress and demonstrate relative stability in their emotional well-being, i.e., feeling negative emotions as often as before or only somewhat more or somewhat less frequently.



Methods

A questionnaire was distributed among the worldwide equestrian community using social media. The results of the survey were collected using Google Forms and analyzed using Excel software. Additionally, a qualitative study was conducted, based on the respondents' comments entered within the survey and on social media.

Results

42 answers were received. 37 (88.1%) respondents were female, and 5 (11.9%) respondents were male. Most respondents (54.8%) were aged over 50; 23.8% were aged 40-49; 16.7% were aged 30-39%; and 4.8% were aged 20-29; there were no teenager respondents. All respondents (100%) have been riding for 5 years and longer, and nearly half of them (42.9%) owned three or more horses. 26.2% owned only one horse, and nearly the same number of respondents, 16.7% and 14.3% respectively, owned no horse or had two horses.

Two questions concerned changes in the level of physical activity, both related to working with horses and not related to training with horses (e.g., taking care of horses), during the pandemic, using a Likert scale of 1-7 (one being much less, and 7 being much more), with 4 indicating no change in the level of activity. In both questions designed to measure changes in physical activity 4 scored the highest number of responses (42.9% for training and 59.5% for other physical activities).

Concerning reported emotional well-being, the Likert scale of 1-7 was used again, and, albeit 33.3% of respondents selected 4, meaning no change, 8% were given to 2 and 3 (feeling depressed more often), whereas 7.1%, 14.3% and 4.8% selected 5, 6 and 7, respectively, signaling increased emotional well-being.

The results of the qualitative study reported no pronounced effects of restrictions on the equestrians' ability to train. Certain equestrians were able to spend more time with their horses because they did not have to travel to work and could do certain activities, e.g., participating in meetings, from the stable.

Conclusions

Overall, it was found that experienced adult equestrians as a worldwide community are resilient to the adverse effects of Covid-19 and the restrictions imposed by the national and regional governments to limit the spread of the pandemic. Equestrian sports and leisure activities require constant practice, and, for horse owners, also associated daily care for their equine partners. Also, the work being mostly done outdoors, it is safer than many other sports and leisure activities that are mostly or only conducted indoors. Horse-riding is a perennial activity that can be done outdoors, with the exception of only certain extreme weather conditions, such as severe storms, snowfalls and heavy rains. The equestrians' ability to spend time actively with their horses has positive correlation to overall stability in reported emotional well-being: although some respondents have reported feeling depressed more often, others felt depressed less often, indicating an overall positive tendency towards less stress. As a whole, equestrianism is a sustainable active lifestyle in the world affected by Covid-19. Like other outdoor activities practiced in nature, equestrian sports and leisure pastimes may provide a viable option for a society concerned with health and safety.

Psychological Distress Among the Elderly in the Baltic Nations During the Beginning of the COVID-19 Pandemic

Rubini Pasupathy Ph.D[1]., Courtney Queen Ph.D.[1, 2, 4], and Ieva Reine, Ph.D. [2,3,5]

Actuality / The Goal

The Baltic countries responded quickly to the COVID-19 pandemic in the Spring and Summer of 2020 declaring a state of emergency with fewer than 30 cases in each country. The early adoption of public health measures to prevent the transmission of COVID-19 resulted in early lockdown, state-funded testing, a robust contact tracing program and changes to service provision for greater infection control. At the same time, the population, especially the elderly, were experiencing symptoms associated with psychological distress. The primary objective of this study is to identify differences in symptoms of psychological distress among the elderly living in the Baltic nations of Latvia, Estonia and Lithuania. A secondary objective of this study is to determine if differences in psychological distress is based on gender.

Methods

Data

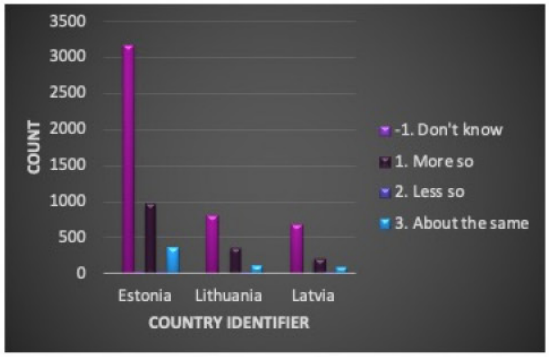
Data from Wave 8 COVID-19 data of the Survey of Health, Aging, and Retirement in Europe (SHARE) were used for this analysis. SHARE Wave 8 COVID-19 data is an early data version of the SHARE Corona survey conducted between June and August 2020. It features the data collected by telephone (CATI) on topics related to COVID-19 for a large sub-sample of SHARE panel respondents. This study examined a sample of 6,794 adults over 50 years old in the Baltic nations of Latvia, Estonia, and Lithuania.

Analysis

Bivariate analysis were performed utilizing the Pearson chi-square test for association to examine differences between the three Baltic countries, and differences in psychological distress by gender during the first six months of the COVID-19 pandemic. Level of significance is determined by p-value test statistic. Alpha level was established at .05.

Results

Felt More or Less Nervous Since COVID-19 Outbreak

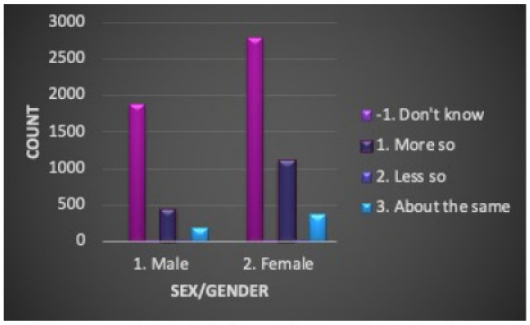


A chi-square test of association shows a statistically significant relationship between felt more or less nervous since the outbreak and country of residence, X^2 (6, N = 4661) = 23.73, p < .001.

SHARE acknowledgement
This study uses data from SHARE Wave 8. *COVID-19 Survey 1* 6103/SHARE.w8ca.800

[1]Texas Tech University Health Science Center, Lubbock, Texas, U.S.A.
[2]Rīga Stradiņš University, [3]Uppsala University, Sweden; Research supported by:
[4]Fulbright Scholar Program, [5]*Project/agreement No. 1.1.1.2/VIAA/3/19/540 'Challenges of ageing in the Baltic Sea region'*

Relationship Between Feeling More or Less Nervous Since the COVID-19 Outbreak and Gender



A chi-square test of independence shows that there was a significant relationship between feeling more or less nervous since the COVID-19 outbreak and gender, X^2 (4, N = 6771) = 76.98, p < .001. Females were more likely than males to feel more nervous.

Relationship Between Feeling More or Less Depressed Since the COVID-19 Outbreak and Gender

A chi-square test of independence shows that there was a significant relationship between feeling more or less depressed since the COVID-19 outbreak and gender, X^2 (4, N = 6771) = 87.41, p < .001. Females were more likely than males to feel more depressed.

Conclusions

Preliminary findings of this study indicate a clear need for gender-specific interventions designed to address mental health needs of the elderly during periods of uncertainty. Furthermore, additional analysis is needed to determine which sociostructural factors are associated with the between-country differences.

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Psychological, socio-demographic and economic factors can predict the level of perceived stress during the COVID-19 pandemic

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Actuality and The Goal

The SARS-CoV-2 (COVID-19) pandemic began in December 2019 and has rapidly spread around the world. Due to its severe negative health effects, it can also wreak havoc on mental health by increasing the levels of anxiety and stress (Qiu et al., 2020).

Short- and long-term effects of the pandemic can lead to an increase of cases of adjustment disorder and post-traumatic stress disorder among the population (Greene et al., 2022). This determines the need of studying the level of perceived stress among the population during COVID-19 and the factors that determine it.

The aim of our research was to develop a predictive model for the perceived stress during the pandemic, based on a considerable number of various factors (psychological, social, economic, demographic, etc.).

Methods

A web-based survey was distributed to assess participants' characteristics (Korotkova et al., 2021). We used the following methods: a structured interview addressing respondents' demographic, economic, social and clinical characteristics and their attitudes and behaviours in the studied period of time; The Perceived Stress Scale-10 (PSS-10), The Ways of Coping Questionnaire (WCQ), The State-Trait Anxiety Inventory (STAI), The Hospital Anxiety and Depression Scale (HADS), The Sixteen Personality Factor Questionnaire (16PF, shortened version, form C).

The sample consisted of 611 respondents aged 18–82, 84% of the female. At the time of the study, 74% of them had a bachelor's (or higher) degree, 69.6% of respondents had a full-time job, 62.8% rated their income as average, while 32.7% as low and 4.5% as high. 87.3% reported no chronic diseases.

Results

The average score of the level of perceived stress in the studied cohort was 28.92. Regression tree-based methods were used in order to build a predictive model for the variable "level of perceived stress", since both quantitative and qualitative variables were included in the model; gradient boosting turned out to be the optimal method. To avoid overfitting, multiple cross-validation was carried out using the Monte Carlo method. The model used made it possible to rank the input variables according to their degree of importance for the predictive model (to determine the specific weight or "contribution" of each variable). Cross-validation was performed 50 times; the resulting average errors were the following: MAE 3.75, MSE 4.69. The resulting model makes it possible to predict the level of perceived stress for each respondent with an accuracy of ±3.75 points.

An additional test was carried out to reduce the dimension of the model and check the possibility of removing low-ranking variables without losing its predictive power. As a result, the list of independent variables was reduced to 22 indicators (Table 1).

As shown in Table 1, the factors that make a significant contribution to the level of perceived stress are related to respondents' emotional sphere (anxiety –state and trait–, depression), coping strategies (such as escape-avoidance, confrontive, self-controlling, etc.), personality traits (tension, dominance, emotional stability, etc.), and few socio-demographic characteristics (age, marital status, changes in habitual behaviour, financial situation, and consumer buying behaviour due to the epidemiological situation).

It should be added that many other variables were assessed but turned out to be irrelevant for the predictive model.

Table 2. The rating data obtained as a result of applying the gradient boosting method for variables that make a statistically significant contribution to the variable "level of perceived stress"

№	Variables	Significance	Unbiased standard deviation
1	State anxiety (STAI)	62.68	4.36
2	Anxiety (HADS)	12.57	3.47
3	Escape-avoidance (WCQ)	2.45	0.81
4	Confrontive (WCQ)	2.33	0.93
5	Self-controlling (WCQ)	1.20	0.63
6	Factor Q4: Tension (16PF)	1.20	0.63
7	Trait anxiety (STAI)	1.10	0.46
8	Distancing (WCQ)	1.08	0.65
9	Planful problem-solving (WCQ)	1.03	0.60
10	Age	1.01	0.59
11	Changes in financial situation due to the current situation	0.99	0.66
12	Changes in habitual behaviour due to the epidemiological situation	0.90	0.40
13	Factor E: Dominance (16PF)	0.81	0.42
14	Depression (HADS)	0.77	0.54
15	Accepting responsibility (WCQ)	0.73	0.45
16	Factor C: Emotional stability (16PF)	0.69	0.47
17	Factor H: Social boldness (16PF)	0.61	0.48
18	Factor L: Vigilance (16PF)	0.54	0.43
19	Changes in consumer buying behaviour	0.51	0.37
20	Factor A: Warmth (16PF)	0.44	0.37
21	Positive reappraisal (WCQ)	0.43	0.30
22	Marital status	0.39	0.32

Surprisingly, the respondents' background, their health status, the presence of elderly relatives or children under care, respondents' trust in official information sources, adherence to the preventive measures and subjective assessment of risk of infection, among others, did not significantly determine the level of perceived stress.

Conclusions

The data obtained indicate, on one hand, a close relationship between perceived stress and state anxiety, and, on the other hand, a significant contribution of a wide range of psychological and socio-demographic characteristics to the level of perceived stress.

Contrariwise, some additional factors that are traditionally considered burdening for the population may not make a significant contribution to the perceived stress, and it can be argued that covid-related stress affects all groups of people regardless of their beliefs, attitudes and current situation. This aspect requires further detailed study.

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QUALITATIVE STUDY ON FAMILY HEALTH-RELATED QUALITY OF LIFE DUE TO PEDIATRIC COVID-19 INFECTION IN LATVIA – SCIENCE FOR PRACTICE

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Actuality / The Goal

Aim of the study was to obtain information on parents' perspective about the impact of pediatric COVID-19 on the family health-related quality of life.

Results

One of the main themes repeatedly coming up throughout all interviews was the emotional saturation or emotional well-being of the family. Parents noted a myriad of emotions in fifteen aspects:

1) sense of powerlessness learning the diagnosis regardless of the fact that all measures of epidemiological safety had been taken.
2) ignorance of how to tell a child the diagnosis, fear of upset him/her.
3) fear that other children will get sick.
4) fear of being able to take care of a child in case of parent's own illness.
5) fear of unpredictability of the course of the disease for the child.
6) fear of the symptoms observed, mostly the shortness of breath, fatigue and the apathy.
7) worry about long COVID-19 as part of the interviewed families experience learning difficulties, fatigue and other post-acute symptoms in their children.
8) compassion of extended family members was mentioned as an additional emotional burden.
9) emotions related to the care received – too many calls from the doctors or lack of attention from the family physician.
10) anxiety due to the contradictory information received from specialists.
11) irritation due to the sustainable flow of conspiracy theories through media.
12) stress due to the threat of relationship breakdown.
13) stress due to the disrupted work schedule and additional duties at home.
14) stress of loss of income due to inability to work.
15) fear of social isolation, condemnation as against people who have not complied with the security measures imposed.

Methods

Qualitative on-site semi-structured, in-depth interviews with 15 parents of altogether 20 underaged (1 month – 15 years) COVID-19 patients were conducted from September 2020 to October 2021. The number of infected children in families varied from 1 to 3. The parents of 12 girls and 8 boys were interviewed. The interviews were conducted with only one parent, 14 of them being mother, in order to comply with hospital's infection control policy.
Interviews were recorded and transcribed. Thematic analysis was used for data processing.

«Her grades are getting **worse** and **worse**.»

«Our GP called us once since the positive test result and then **avoided** us. I was getting medical **advice from my friends**, who had COVID-19 right before us.»

«I was very **upset** that GP did not agree to see the child in person as she had fever and cough for several days.»

«I **never expected** it to be so hard to spend time with my husband 24/7.»

«I **could not believe** the positive test result, because we followed all the safety measures.»

«What we really missed – **reliable** medical **information** and **proper contact** with the GP.»

«I felt total **disbelief** that we have contracted the *crazy bug*.»

«I felt **helpless**, because we were afraid to get sick and isolated our daughter in a separate apartment, but having a sick child away from me made me fell **anxious**.»

Conclusions

- Emotional well-being is one of the most affected components of the family health-related quality of life due to pediatric COVID-19 infection in Latvia.
- Findings demonstrate the need of particular mental health care services in the country.
- The study indicates the necessary improvements in health communication and the organization of health care and social support services.

RELATIONSHIP BETWEEN VACCINATION INTENSION AND THE HEALTH BELIEF MODEL CONSTRUCTS DURING THE COVID-19 PANDEMIC

Sandra Feldmane, Kristīne Mārtinsone, Viktorija Perepjolkina
Rīga Stradiņš University

Actuality

Vaccination intention and effective vaccination strategies development and implementation during the COVID-19 pandemic may reduce the number of hospitalized people with COVID-19, as well as reduce mortality rates related to COVID-19 (*WHO*, 2021).

Despite the availability of vaccines, the vaccination intention is one of the main influencing factors the world is facing due to COVID-19 pandemic (*WHO*, 2021).

Aim of this study was to determine relationship between vaccination intension and the Health Belief Model constructs during the COVID-19 pandemic.

Methods

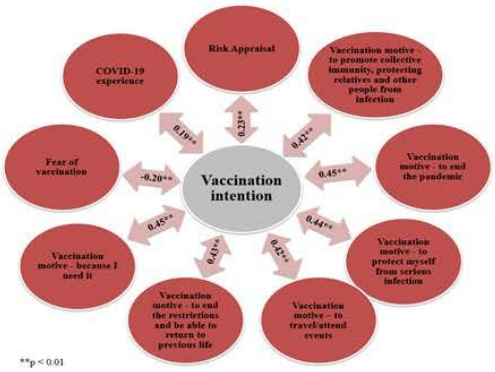
SAMPLE: 539 respondents (52.9% males, age 18 to 75, M = 45.35, SD = 15,70) who were not vaccinated against COVID-19. They were selected from a sample representative of the Latvian population surveyed by the INTERFRAME-LV study (N = 1017).
PROCEDURE: Data was collected from 10th to 22nd September 2021 by conducting direct interviews at the respondents' residences.
INSTRUMENTS: The data was collected using demographic data questionnaire and instruments based on the Health Belief Model constructs: perceived threat of disease as risk appraisal (α = 0.64); perceived benefits as vaccination motives (6 different motives); perceived barriers as fear of vaccination (α = 0.92); cues to action as COVID-19 experience.

Results

The proportion of responses for intention to have a COVID-19 vaccine, a total of 64% participants responded no/rather no to COVID-19 vaccine intent, while only 25% responded yes/rather yes.

Statistically significant positive correlations were found between vaccination intension and risk appraisal, all six vaccination motives (to promote collective immunity, protecting relatives and other people from infection; to end the pandemic; to protect myself from serious infection; to travel/attend events; to end the restrictions and be able to return to previous life; because I need it) and COVID-19 experience (e.g. a person and/or a family member, a friend got sick with COVID-19 or someone died from it) (r = 0.19 to 0.45, p<0.01). The analysis showed that people with higher vaccination intension for other individuals were significantly more likely to have many different motives to get vaccinated against COVID-19, perceived higher personal risk of contracting the COVID-19 and had COVID-19 experience.

Statistically significant negative but weak correlations were found between vaccination intension and fear of vaccination (r = -0.20, p<0.01). The analysis showed that people with higher vaccination intension for other individuals were significantly more likely have lower fear level of vaccination.



Conclusions

Vaccination against COVID-19 is the main powerful prevention tool to slow the spread of COVID-19 (*Zampetakis & Melas*, 2021). That's why it is very important to identify vaccination intentions factors. The Health Belief Model has already been successfully used as a framework to predict vaccination intentions (*Bechard et. al.*, 2021). And the results of this study show the importance of the perceived threat of the disease, many different vaccination motives (to promote collective immunity, protecting relatives and other people from infection; to end the pandemic; to protect myself from serious infection; to travel/attend events; to end the restrictions and be able to return to previous life; because I need it), the belief that the vaccine will not cause significant side effects and long-term consequences and COVID-19 experience in the COVID-19 vaccination intention in sample of adults in Latvia.

This study was conducted under The national research programme "Challenges and solutions for Latvia's state and society in an international context (INTERFRAME-LV) and was developed in collaboration with Vertically Integrated Projects.

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RELIĢISKĀS SPRIEDZES SAISTĪBA AR EMOCIJĀM, EMOCIJU REGULĀCIJAS PRASMĒM UN FIZISKĀS VESELĪBAS PAŠNOVĒRTĒJUMU LATVIJAS KRISTIEŠU IZLASĒ

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Aktualitāte / Mērķis

Reliģiozitāte un garīgums cilvēkiem kļūst aktuāls dažādās krīzes situācijās, izņēmums nav arī Covid-19 pandēmija. Laika periodā no 2020. gada februāra līdz martam, kad būtiski pieauga Covid-19 saslimšanas gadījumu skaits un pasaulē valdīja liela neziņa par notiekošo, interneta meklēšanas pārlūkā "Google" termina "lūgšana" meklēšanas pieprasījumu skaits pieauga par 50% kopumā 95 pasaules valstīs (Bentzen, 2020).

Šobrīd reliģijas psiholoģijā aktuāls jautājums, ir nevis kādu ietekmi izraisa reliģija un garīgums – pozitīvu vai negatīvu, bet gan tas, kā, kad un kāpēc dažādi reliģiskie aspekti iegūst konstruktīvas vai destruktīvas izpausmes (Doehring, 2019).

Līdz šim veiktajos pētījumos konstatēta reliģiskās spriedzes saistība ar biežāku negatīvo emociju izjūtu un slikākiem veselības rādītājiem (Damen et al., 2021; Doehring, 2019).

Šī pētījuma mērķis bija pārbaudīt mediācijas modeli par emociju un emociju regulācijas prasmju mediatora mainīgā lomu reliģiskās spriedzes saistībā ar pašnovērtētu fizisko veselību.

Metodes

Pētījumā piedalījās 306 latviešu valodā runājoši Latvijas kristieši vecumā no 16 līdz 74 gadiem.
Instrumentārijs:

- Reliģiskās spriedzes aptauja (*Religious and Spiritual Struggles Scale*)
- Emociju regulēšanas prasmju aptauja (*Emotion Regulation Skills Questionnaire*)
- Fiziskās veselības aptauja (*The Physical Health Questionnaire*)

Rezultāti

Iegūtie mediācijas analīzes rezultāti (1.att. un 2.tab.) uzrāda, ka negatīvās emocijas daļēji mediē reliģiskās spriedzes saistību ar fiziskās veselības pašnovērtējuma rādītājiem. Mediācijas modelis ir statistiski nozīmīgs.

Aprēķinātie rezultāti norāda arī uz to, ka emociju regulācijas prasmes daļēji mediē reliģiskās spriedzes saistību ar fiziskās veselības pašnovērtējuma rādītājiem un šī saistība ir statistiski nozīmīga.

Secinājumi

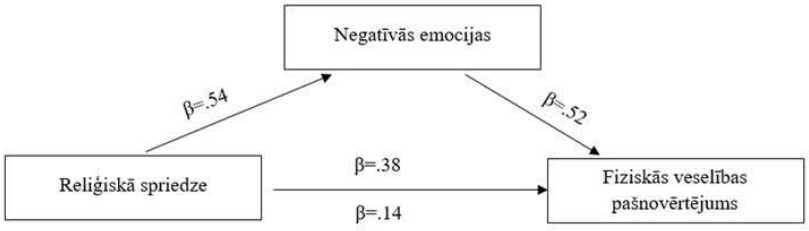
Šajā pētījumā tika secināts, ka reliģiskā spriedze ir saistīta ar tādiem sliktākas fiziskās veselības pašnovērtējuma rādītājiem, kā: biežākas galvassāpes, gremošanas sistēmas darbības traucējumi un miega traucējumi, saskan ar citos līdz šim veiktajos pētījumos iegūtajiem datiem par reliģiskās spriedzes saistību ar sliktākiem fiziskās veselības rādītājiem (Damen et al., 2021; Doehring, 2019; Oemig et al., 2016; Sherman et al., 2017; Trevino et al., 2019).

Reliģiskās spriedzes saistība ar negatīvajām izjustajām emocijām īpaši tādām emocijām, kā: nevērtīgums, vainas un apbēdinājuma izjūta arī saskan ar iepriekš veiktajiem pētījumiem, kuros konstatēta reliģiskās spriedzes saistība ar augstākām negatīvo emociju izjūtām (Zarzycka & Puchalska-Wasyl, 2020).

Šajā pētījumā iegūtais mediācijas modelis (sk. 1. attēlu) ļauj secināt, ka emocijas un emociju regulācijas prasmes daļēji mediē reliģiskās spriedzes saistību ar fiziskās veselības rādītājiem, t.i. izskaidro šo saistību.

Dotā pētījuma rezultāti norāda uz nepieciešamību pēc pierādījumos balstītas un garīgi orientētas veselības aprūpes iekļaušanas veselības aprūpes sniedzēju vidū. Būtu nepieciešamas sniegt vispārēju visaptverošu aprūpi akūtu veselības krīžu gadījumā, lai cilvēku uzskati un vērtības nevis traucētu atveseļošanās procesu, bet tieši otrādi – kļūtu par resursu (Doehring, 2019).

Dotajā pētījumā iegūtie rezultāti var palīdzēt veselības profesionāļiem efektīvāku intervenču izveidē indivīdiem, kas krīzes situācijās piedzīvo reliģisko spriedzi, aktualizējot šo indivīdu izjustās emocijas un sniedzot informāciju par emociju regulācijas prasmju pilnveides iespējām.



1. attēls. ***Mediācijas analīzes rezultāti***

2. tabula. ***Regresiju analīzes rezultāti mediācijas modeļa pārbaudē (atkarīgais mainīgais – fiziskās veselības pašnovērtējuma rādītāji)***

Mainīgie lielumi	B	SE B	β	t	R^2
Konstante	19.30	2.30	-	7.94	.14
Reliģskā spriedze	.34	.48	.38	7.08	-
Konstante	18.75	2.23	-	8.41	.28
Reliģiskā spriedze	.12	.05	.14	2.34	-
Negatīvās emocijas	.32	.04	.44	7.63	-

Seksuālās un reproduktīvās veselības (SRV) pakalpojumu nepārtrauktības nodrošināšana COVID-19 ierobežojumu laikā

G.Lazdāne, D.Rezeberga, I.Briedīte, E.Pumpure, I.Pitkēviča, M.L.Graviņa, D.Mihailova, I.Kantāne, A.Ķīvīte-Urtāne – RSU; S.Olsena - LU

Aktualitāte\mērķis

Pierādījumi no ārkārtas situāciju pārvaldības sabiedrības veselības jomā liecina par ierobežojumiem SRV pakalpojumu un kontracepcijas līdzekļu pieejamībā un krīzes situāciju ietekmi uz grūtnieču un jauno māmiņu veselības aprūpi. Pētījuma **mērķis** bija izvērtēt COVID-19 ietekmi uz SRV pakalpojumu pieejamību Latvijā un, balstoties uz pētījumā gūtiem pierādījumiem, sniegt rekomendācijas ārkārtas situāciju ietekmes mazināšanai uz iedzīvotāju SRV.

Pētījuma **uzdevumi** bija izvērtēt:

(1) COVID-19 ietekmi uz:
- Dzemdību palīdzības, kontracepcijas un abortu pieejamību
- Seksuālo veselību, nedrošu seksu, HIV un STI izmeklējumu pieejamību, vardarbību ģimenē
- Grūtnieču, viņu partneru un veselības aprūpes profesionāļu, kuri sniedz grūtniecības, dzemdību un pēcdzemdību aprūpes pakalpojumus, psiholoģisko labklājību

2) Projekta rekomendāciju īstenošanu

Projekta rekomendācijas un to īstenošanas stadija Veselības ministrijas vērtējumā

No **17** rekomendācijām SRV jomā, **6** jau tiek īstenotas.

Pārējo rekomendāciju īstenošanai nepieciešama saliedēta tālāka darbība.

Apzīmējumi: Tiks īstenots līdz 2024.g.

Apzināts, bet lēmums par īstenošanu vēl nav pieņemts

Metodes

Pētījums ir daļa no Valsts pētījumu programmas projekta «COVID-19 ietekme uz veselības aprūpes sistēmu un sabiedrības veselību Latvijā, veidi, kā sagatavot veselības nozari nākotnes epidēmijām» (VPP-COVID-2020 /1-0011) un starptautiska daudzvalstu pētījuma *International Sexual Health And Reproductive Health Survey* aptaujas.

(1) Aptauja: Uzvedības faktoru šķērsgriezuma pētījums Latvijas iedzīvotāju vidū, vecumā no 18 gadiem, izmantojot interneta ērtuma atlasi.

(2) Kvalitatīvā pētniecības sadaļa: 12 fokusgrupas diskusijas ar grūtniecēm, nedēļniecēm, jaunajām māmiņām un tēviem, dzemdību speciālistiem un ginekologiem, vecmātēm un cilvēkiem, kuriem ir HIV, 13 strukturētas intervijas ar SRV politikas veidotājiem.

RSU Pētījumu ētikas komitejas atļaujas: kvantitatīvā aptauja – 28.05.2020. lēmums Nr. 6-1/06/25, kvalitatīvā pētījuma daļa – 23.07.2020. lēmums Nr. 6-1/08/6.

Veselības ministrijai **izveidot SRV koordinācijas grupu**, kura, sadarbībā ar citām padomēm un komisijām, veicinātu SRV uzlabošanu valstī. Ārkārtējā situācijā un ierobežojumu apstākļos šī grupa koordinētu ticamas un aktuālas SRV informācijas pieejamību iedzīvotājiem un veselības pakalpojumu sniedzējiem, kā arī SRV pakalpojumu pieejamību. Izšķirīgi svarīga ir multidisciplināra (medicīna, sociālās zinātnes u.c.) un uz pacientiem, īpaši uz neaizsargātām pacientu grupām, vērsta pieeja lēmumu pieņemšanā.

Neatliekamās medicīniskās palīdzības dienestam un Nacionālam veselības dienestam krīzes situācijās **regulāri informēt ārstniecības iestādes** par grūtnieču un dzemdētāju hospitalizācijas izmaiņām.

Ārstniecības iestādēm atkarībā no to lieluma un struktūras identificēt amatu vai struktūrvienību, kas nodrošina SRV aprūpes nepārtrauktību**, informējot pacientus par vietu un laiku, kur tiks sniegts pakalpojums**, ja iestādes darbība uz laiku ir pārtraukta vai mainīts tās darba režīms, kā arī nodrošināt attālinātu konsultāciju sniegšanu.

Veselības ministrijai sadarbībā ar SRV jomas profesionālajām asociācijām attīstīt **telemedicīnu SRV pakalpojumu sniegšanā** (*missed abortion* atrisināšana agrīnā grūtniecības laikā, medikamentozais aborts, psihologa konsultācija grūtniecēm, it īpaši ar COVID-19 inficētām, STI un HIV pašdiagnostika, konsultēšana ģimenes plānošanā, kontracepcijā un seksuālā veselībā), izstrādājot šo pakalpojumu kvalitātes un drošības vadlīnijas un nosakot darba samaksu, kas neatšķiras no klātienes konsultācijas samaksas.

Uzturēt drošticamu informācijas avotu grūtniecēm www.grutnieciba.lv ar aktuālo informāciju par COVID-19 infekciju vai citām krīzi izraisošām problēmām un grūtniecību un dzemdību palīdzības pakalpojumu nodrošināšanu.

Ārstniecības iestādēm, kuras nodrošina dzemdību palīdzību, **iekļaut mājaslapās aktuālu informāciju par tā brīža noteikumiem un to pamatojumu**. Informācijas lapu pilnveidošanā iesaistīt universitātes, SRV pakalpojumu sniegšanā iesaistītās profesionālās asociācijas un nevalstiskās organizācijas. Mājaslapās veidot atsevišķu sadaļu par COVID-19 vai cita krīzi izraisoša faktora ietekmi uz SRV, iekļaujot saites uz drošticamiem avotiem.

Ar valsts institūciju un universitāšu atbalstu SRV pakalpojumu sniegšanā iesaistītām **profesionālām asociācijām un citām nevalstiskām organizācijām mājaslapās veidot atsevišķu sadaļu par COVID-19 ietekmi uz SRV**, iekļaujot saites uz drošticamiem avotiem.

Veicināt **vecmāšu plašāku iesaistīšanu SRV pakalpojumu sniegšanā**, t.sk. antenatālās aprūpes un ģimenes plānošanas pakalpojumu nodrošināšanā, t.sk. tiešsaistes režīmā.

VM sadarbībā ar IZM, pašvaldībām un SRV veicināšanā iesaistītām nevalstiskām organizācijām **nodrošināt veselības mācību,** t.sk**. dzimumizglītību,** tālmācības režīmā.

Secinājums: Nepieciešams turpināt izvērtēt VPP/SRV projekta rekomendāciju realizācijas gaitu un veikt kvalitatīvu pētījumu par to īstenošanu

SELF-RATED HEALTH OF LATVIAN POPULATION AGED 50+ DURING THE COVID-19 PANDEMIC

Ieva Reine, Ph.D. [1,3,5], Courtney Queen Ph.D.[1, 2, 4], Madara Miķelsone, MA[1], Diāna Baltmane BA[1]

Actuality / The Goal

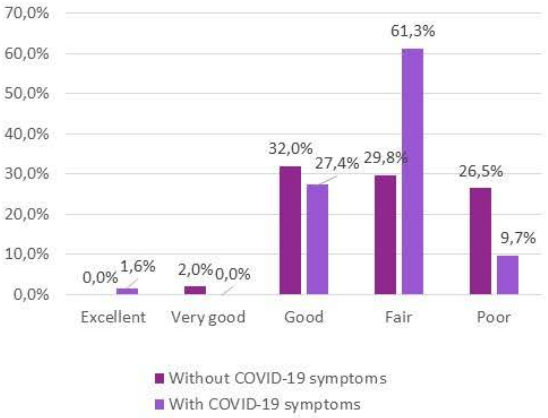
COVID-19 pandemic affected the wellbeing for all age groups, but older people were at greater risk of social isolation, restricted everyday routines and access to healthcare services. Thus, the older population of Latvia, like in many other countries, was exposed to difficulties that affected their mental and physical health, and general wellbeing.
The objective of this study is to analyse the subjective self-rated health during the second wave of COVID-19 between men and women as well as those aged 50+ having been ill with COVID-19 during the second wave of the pandemic in Latvia.

Methods

Data
Data from Wave 9 COVID-19 data of the Survey of Health, Aging, and Retirement in Europe (SHARE) were used for this analysis. SHARE Wave 9 COVID-19 data in Latvia was conducted between June and August 2021. It features the data collected by telephone (CATI) on topics related to COVID-19 for a sub-sample of 975 SHARE panel respondents in Latvia.
Analysis
Pearson chi-square test for independence was used to examine differences in self-rated health between the genders and those who had COVID-19. symptoms and those who did not.

Results

We did not find any statistically significant differences in self-reported health between men and women. However, none of the respondents reported excellent health and just a few – very good health. In general, half of the respondents (52%) assessed their health as fair, but 16.6% as poor.
Among those who had had COVID-19 symptoms, most of the respondents, i.e. 63%, had fair health, but 9.7% reported it as poor. Totally, out of 62 persons who had had COVID-19 symptoms, more that one of four assessed their health as good. The significance test showed differences between those having COVID-19 symptoms and those who did not as regards the self-reported health.



Conclusions

The results indicate that gender is an important factor, though not crucial in relation to self-reported health. Differences between the genders have been observed and may be dependant on factors not studied in this analysis. However, the COVID-19 seem to be an overarching risk factor for reporting fair health, but not poor health.The results indicate that such pandemics as COVID-19 or other unexptected events may have a considerable impact on older populations health, if it is experienced personally, but not ultimately as a risk for a serious health deterioration estimated by self-rated health consequences. Netvertheless, preparedness to develop resilience patterns against outer impact of unforseen situations is crucial for older population groups, disregard gender. Even though we have studied the respinse to the second wave of COVID-19, we still lack the knowledge on how the long-term impact of crisis such as pandemic may alternate the health of older population.

SHARE acknowledgement
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[1]Rīga Stradiņš University, [2]Texas Tech University Health Science Center, Lubbock, Texas, U.S.A.
[3]Uppsala University, Sweden; Research supported by: [4]Fulbright Scholar Program, [5]*Project/agreement No. 1.1.1.2/VIAA/3/19/540 'Challenges of ageing in the Baltic Sea region'*

Testing for COVID-19 in Latvia: analysis of public - private partnerships.

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Actuality / The Goal

Collaboration between public and private sectors are essential in the health care system. It brings resources, knowledge and opportunities to each side (Yassanye, D. M., Anason, A. P., & Barrett, D. H., 2021).

During the COVID-19 pandemic partnerships between the public and private sectors in Latvia were realized in various types. Testing of the COVID-19 was one of first that kind of cooperation during pandemic.

The goal was to have public-private partnerships evaluated in health system during times of a pandemic.

Methods

The data from the Latvian National Health service about COVID-19 testing in 2020 in Latvia were collected, reviewed and analysed.

Firstly, literature review about public - private partnership and testing was done.

After was collecting data from National Health service, databases on government reports.

As a result, analyses and conclusions were made.

Results

The first testing for COVID-19 in Latvia was conducted through 4 tests on February 26 (by Emergency medical service). The first private laboratories were the Central Laboratory and the E. Gulbis Laboratory, which provided 13 test points for seven cities (on March 23).

The mean number of tests in 2020 was 2 355,99 (interval: 4,00 - 12 091,00) per day and 2141,73 (range: 7,67 – 7365,77) per month.

In an analysis of COVID-19 testing in 2020, 95,78% of each month was carried out by the private sector together (Central Laboratory, E. Gulbja Laboratory, MFD Laboratory and NMS Laboratory) from all tests (figure 1.).

Primarily thought private laboratories in the beginning of the third quarter COVID-19 were open 109 test points (few points operated by the public sector in Riga, Rezekne and Daugavpils)

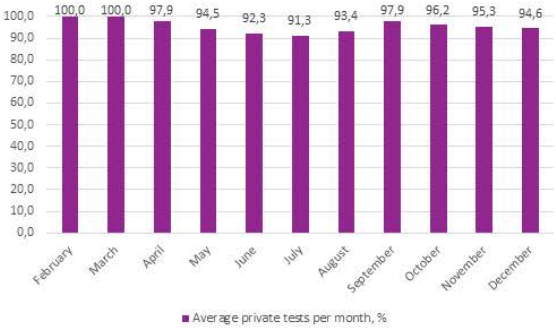

Figure 1. Average private tests from all tests per month.

Conclusions

Public and private sector cooperation in the health care system, in particular, during a pandemic can be

1) efficient - the organization of the process may be quicker and more successful;

2) more global - involves private sector resources and covers larger areas;

3) faster - the pandemic "pressure" and uncertain factors boost public support - private partnerships and allow a bit of time to cover vast areas.

The effect of COVID-19 on coverage of dental services in Latvia

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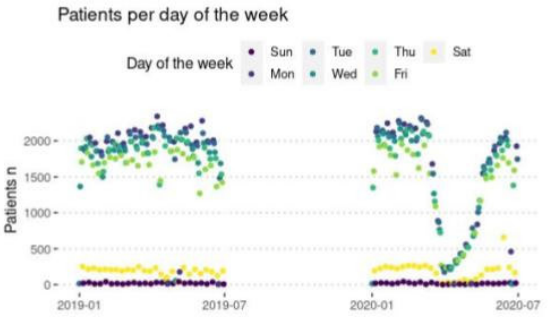
COVID-19 seku mazināšana
VPP-COVID-2020

Actuality / The Goal

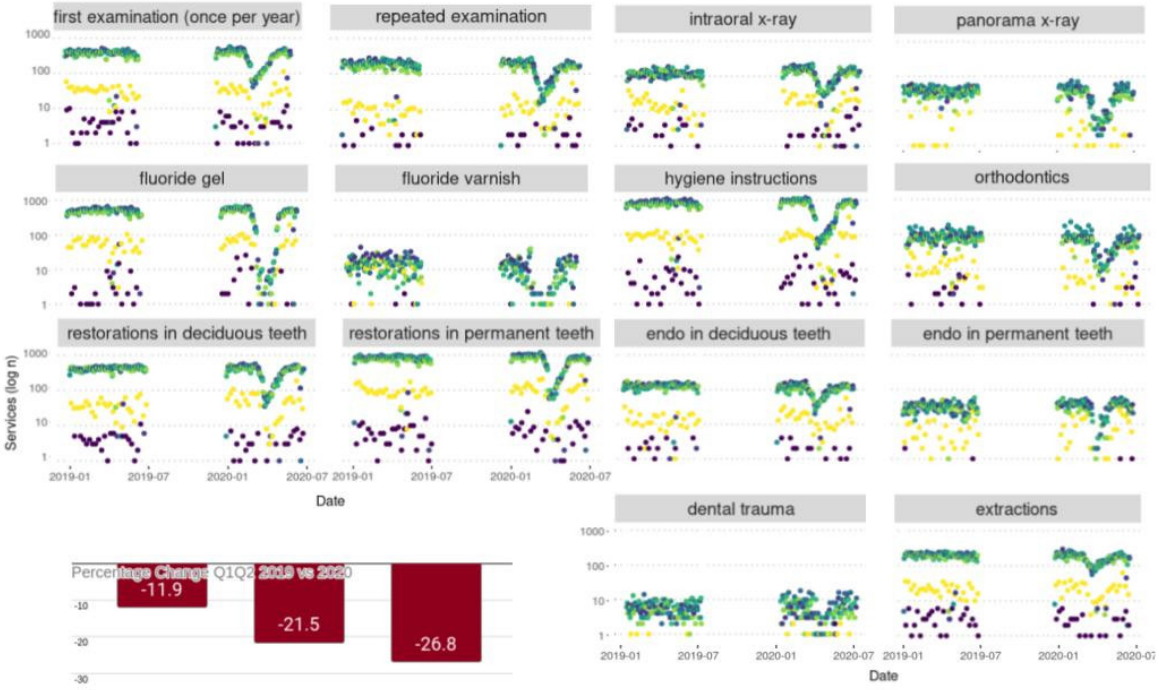
The aim was to describe the impact on dental public services during the COVID19 emergency state between January-July 2020 in Latvia and compare with the same period in 2019.

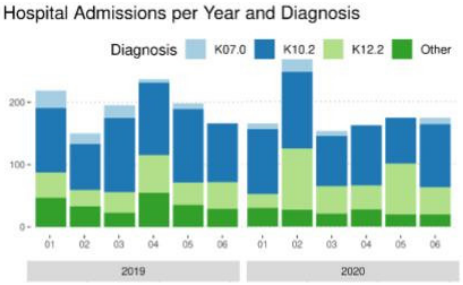
Methods

Retrospective cohort study with anonymized secondary data on Latvian national dental care services in the first semesters of 2019-2020. Data were obtained from the Latvian National Health Service and explored with descriptive statistics and visualizations.



Results





Conclusions

During the first wave of Covid-19, dental services were reduced due to existing restrictions, while emergency care was provided in both ambulatory and hospital settings. During the state of emergency from March to May 2020, access to publicly funded dental services in Latvia was negatively affected.

In order to ensure continuity of dental services even in the case of an unfavourable scenario of Covid-19 infection, the development of tele-dentistry should be promoted: funding for effective non-invasive manipulations, training of new skills for specialists working in public sector, creating financial motivation for doctors and patients, finding technological solutions.

Founded
- "Impact of COVID-19 on health care system and public health in Latvia: ways in preparing health sector for future epidemics", project nr. VPP-COVID-2020/1-0011.
- Post-doctoral-Research-Aid-Programme (1.1.1.2/VIAA/3/19/540, Contract No 9.-14.5/27)

THE IMPACT OF PHYSICAL ACTIVITY IN THE ELDERLY ON MENTAL HEALTH DURING THE COVID-19 PANDEMIC

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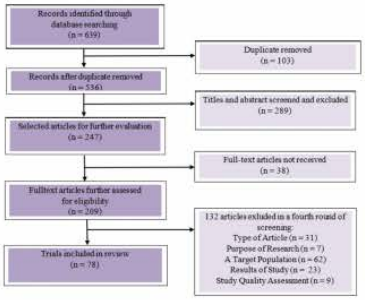
Actuality / The Goal

People worldwide are living longer. According to the WHO, the proportion of the world's population aged over 60 is expected to almost double between 2015 and 2050, from 12% to 22%. An ageing population faces mental stressors - affecting overall human health and well-being. Regular physical activity is closely linked to the mental health of the elderly, improving cognitive function and stabilising and maintaining emotional well-being. According to the scientific literature, physical activity influences mental health and well-being by maintaining existing and creating new social networks and improving quality of life [1-3]. The COVID-19 pandemic and the situation that led to isolation and indefinite quarantine have reduced the elderly's already limited opportunities for physical activity and altered mental health indicators [4]. The aim of this study is to assess the impact of physical activity in elderly on the mental and physical health during the COVID-19 pandemic.

Methods

There was a literature review conducted between September 2021 and March 2022. The study titles and abstracts of the scientific articles for the established selection criteria were evaluated in the first stage, then duplicate entries were removed in the second stage. In a third stage, non-full access articles were removed, as were articles that did not meet one of the inclusion criteria. A literature review included 78 full-text sources.



Results

A literature review found that loneliness, depression, anxiety and sleep disorders in older people, although marginal social determinants of health, have so far had a negative impact on health, and that, due to the restrictions imposed by the COVID-19 pandemic, rates of have led to significantly worse outcomes. A literature review also identified the impact of physical activity on the health determinants studied. The study showed that anxiety among the elderly increased significantly compared to the pre-COVID period (from 8.3% to 49.7%), but that regular physical activity stabilized the situation by reducing the increase in anxiety disorders. In addition, the study found evidence that quarantine actually increased loneliness in older people (from 27% in 2018 to 56% in 2020) and caused a slight increase in sleep disorders (active individuals maintained better sleep quality during quarantine). A literature reviewed presents the role of physical activity as a social support - reducing loneliness. It was also observed that the incidence of depressive symptoms was highest among the elderly, and that the situation led to a threefold increase in the prevalence of depression (from 8.5% to 27.8%). Nevertheless, the literature suggests that at least 20 minutes of regular physical activity helps to avoid and reduce negative thoughts, gives the practitioner space for distraction and improves psychological well-being. Studies focusing on the relationship between physical activity and the different components of psychological well-being have shown that physical activity, and the maintenance of physical activity, has a statistically significant reduction in the rates of loneliness (from 18.6% to 18%), anxiety rates decreased 15-34%, depression rates fell 3%, and characterized by a 41.5% lower risk of sleep disorders.

Conclusions

1. COVID-19 has caused an increase in loneliness, anxiety, depression, and sleep disorders among the elderly.
2. The pandemic significantly reduced physical activity and opportunities for older people.
3. Physical activity reduces loneliness, anxiety and depression rates and the prevalence of sleep disorders in older people.

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The quality of care in General Practice in Latvia during the COVID-19 pandemic

Cindy Heaster, Elizabete Krista Rebaine, Doc. Sandra Gintere, Baiba Sirmā

Relevance and Aims

General Practice worldwide has been at the front line of the COVID-19 pandemic which has meant that practices have had to overcome challenges in order to continue providing quality patient care. A shift towards a greater reliance on telemedicine and closer working relationships with secondary care and other family doctors has occurred during the pandemic. Patients delayed seeking healthcare due to fear of becoming infected with COVID-19, or because they assumed the doctor was unavailable or not accepting face to face appointments.

In order to assess the impact of the COVID-19 pandemic on the organization and operation of primary care practices in Latvia, the Latvian research team participated with over 35 countries in the multinational PRICOV-19 study, organised by Prof. Sara Willems and Esther Van Poel from the centre of 'Quality and Safety Ghent' (department of 'Public Health and Primary Care') at Ghent University.

The aims of the PRICOV study were to examine four major domains of quality care in general practice, that is (1) infection prevention measures (2) the use of validated and standardized protocols, (3) the organization of continuity of care, and (4) attention to vulnerable patient groups. The study also explored practitioner well-being.

Methods

Convenience sampling was used to invite 966 GP practices via email to complete an online questionnaire in Latvian. 119 practices fully completed the questionnaire using the secure platform REDCap from 14.01.2021-25.04.2021.

The 43 item questionnaire was developed by researchers at Ghent University who used a RAND-Modified Delphi method and practical experiences shared by GPs-in-training.

In order to cover the 4 major domains, information was collected about the organization of patient flow, infection control measures, data processing, communication with patients, collaboration within the practice and with external partners, self-care and care for practitioners, and finally practice characteristics.

All participants gave informed consent for participation and the study was approved by the ethics committee of RSU, and Ghent university. Data was analysed using SPSS (27.0) by means of descriptive statistics, binary logistic regression and non parametric models.

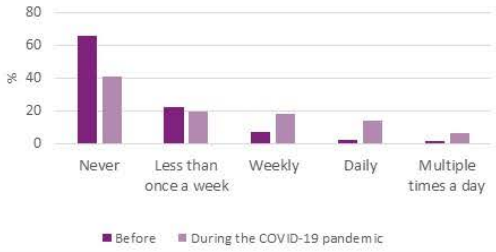
Results

1.Infection prevention methods

Both physical and process-related infection prevention measures were evaluated. Physical measures included the provision of the following equipment in GP consulting rooms: disposable gloves (49.6%), surface disinfectants (49.2%), and paper to cover the examination table (96.9%). Before the COVID-19 pandemic, 85% of GP consultation rooms were supplied with hand sanitizer: this rose to 96.9% during the pandemic. Almost all practices had a sink in the procedure room (96%), but only about half of the practices (52.4%) were those equipped with a tap that can be opened by elbow or a motion detector. Sufficient time to disinfect the consultation room was regularly or always provided in 87% of practices.

Most practices (71.6%) did not experience meaningful limitations due to the building or infrastructure to provide quality care during COVID-19. 90.4% of practices were able to limit the number of patients in the waiting room, with 95.8% of practices triaging patients by phone before they entered the practice. The use of video consultations during the COVID-19 pandemic rose in comparison with pre-pandemic levels (table 1).

Table 1: The use of video consultations before and during the COVID-19 pandemic



2. Implementation of protocols in practice

Some Latvian GPs felt that COVID had led to an improvement in work organization and patient flow, which they would like to continue in the future.

Relating to the disinfection of the practice, 90.6% of practices always use a detailed protocol for cleaning during the pandemic, compared to 79.8% always using one before the pandemic. In practices with a receptionist or administerial assistant, the rate was reported at 100% (18/18 practices) but this did not reach the level of statistical significance.

3. Continuity of care

During the COVID-19 pandemic, 63.7% of respondents reported that a patient with an urgent condition was seen late due to delayed care, but only 12% reported that a patient was seen late because they did not know how to call on a GP. Incorrect assessment of urgent conditions at telephone triage was observed in 20% of practices.

4. Vulnerable groups

The extent to which it was feasible for patients to isolate at home was checked by 90.3% of practices. Most respondents (55%) did not enquire, or enquired less than before than pandemic as to whether patients experience family violence. Only 2% of Latvian GPs record that patients mention family violence more frequently during the Covid pandemic, whilst 89.5% said that it was mentioned the same amount or not at all, and 8% stated that patients mentioned family violence less often. Only 15% of practices contacted families with a history of family violence or with difficult child rearing situations during the pandemic.

Conclusions

Infection control practices such as the regulation of patient flow and infection control procedures could be effectively implemented in Latvian General Practice during the COVID-19 pandemic.

The Covid-19 pandemic led to delayed diagnosis and urgent care for some patients. The use of telemedicine increased during the pandemic, although telephone triage was found to be inaccurate in some instances.

Most Latvian GPs did not specifically reach out to at-risk families during the pandemic, or enquire about domestic violence.

Self reported adherence to infection control protocols was high during the COVID-19 pandemic.

Authors / Autori

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