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UDC:

Karakteristike pacijenata sa sumnjom na COVID-19 infekciju i ishod posete u kovid ambulanti

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Characteristics of patients suspected of having COVID-19 and the outcomes of their visits to the COVID outpatient clinic

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Sažetak

Uvod. Oboleli od COVID-19 zbrinjavani su u kovid ambulantama domova zdravlja, što je rasteretilo sekundarni i tercijarni nivo zdravstvene zaštite.

Cilj. Ispitati karakteristike pacijenata u pogledu simptoma, rezultata testiranja, prisustva komorbiditeta i ishoda nakon pregleda.

Metod. Popunjavan je Upitnik za pacijente koji su se od 23. do 29. aprila 2021. javili na pregled. Dobijeni su podaci o polu, starosti, simptomima, komorbiditetima, vakcinalnom statusu i ishodu posete. Podaci su statistički obrađeni u *SPSS* programu.

Rezultati. Bilo je 222 ispitanika oba pola (61,7% žena), prosečne starosti 47,9±15,2 godina. Vakcinisano je 24,8%, a 60,4% je bilo kovid pozitivno. Najčešće tegobe bile su umor, bolovi u mišićima i zglobovima, kašalj i temperatura. Oko polovine je imalo komorbiditete, najčešće pacijenti starije životne dobi. Nije nađena statistički značajna razlika u rezultatu testa na COVID -19 i vakcinalnog statusa (p=0,099), niti u odnosu na prisustvo komorbiditeta (p=0,118). Pacijenti sa blažim simptomima upućeni su na kućno lečenje, 26,1% na dopunsku dijagnostiku, a 10,4% u bolnicu. Vakcinacija nije uticala na ishod posete (p=0,240). Na dopunsku dijagnostiku najčešće su upućivane osobe starosti od 51 do 65 godina, a u bolnicu stariji od 65 godina (p=0,004) i pacijenti sa komorbiditetom (p=0,003).

Zaključak. Nije nađena značajna razlika u pozitivnom rezultatu testa na COVID-19 u odnosu na vakcinaciju i prisustvo komorbiditeta. Samo 10% pacijenata je upućeno u bolnicu, najčešće stariji od 65 godina i pacijenti sa komorbiditetom.

Ključne reči: simptomi COVID-19, prisustvo komorbiditeta, testiranje na COVID-19, vakcinalni status, kovid ambulante, upućivanje u bolnicu

Abstract

Introduction. The COVID-19 patients were treated in outpatient clinics at primary healthcare centers, which alleviated the pressure on secondary and tertiary healthcare levels.

Objective. We aimed to research the characteristics of COVID patients, such as their symptoms, test results, comorbidities, and exam outcomes.

Method. We completed a questionnaire for patients who attended for examination between April 23 and April 29, 2021. We collected data on gender, age, symptoms, comorbidities, vaccination status, and examination outcomes. The data were statistically analyzed using the SPSS program.

Results. A total of 222 participants, comprising 61.7% women, were involved in the study, with an average age of 47.9 ± 15.2 years. Among them, 24.8% were vaccinated, and 60.4% tested positive for COVID-19. The most common symptoms reported included malaise, muscle and joint pain, cough, and fever. Approximately half of the participants had comorbidities, primarily among older individuals. Statistical analysis showed no significant correlation between COVID-19 test results and vaccination status (p=0.099), nor was there a significant relationship with the presence of comorbidities (p=0.118). Patients exhibiting milder symptoms were typically sent home, while 26.1% were referred for further diagnostic testing, and 10.4% were admitted to the hospital. Vaccination status did not appear to influence the outcome of the visits (p=0.240). Participants aged 51 to 65 were most frequently referred for further diagnostics, while those over 65 (p=0.004) and individuals with comorbidities (p=0.003) were more likely to be hospitalized.

Conclusion. There was no significant difference in positive COVID-19 test results regarding vaccination and comorbidities. Only 10% of the patients were referred to the hospital, primarily those over 65 and patients with comorbidities.

Keywords: COVID-19 symptoms, comorbidities, COVID-19 testing, vaccination status, COVID outpatient clinics, hospital referral

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Uvod

Krajem 2019. godine u kineskom gradu Vuhanu pojavila se epidemija nazvana COVID-19, a kao uzročnik identifikovan je novi virus *SARS-CoV-2*. Zbog velike sposobnosti prenošenja virusa, kao i velike migracije ljudi zbog poslovnih, trgovačkih i socijalnih kontakata epidemija se brzo širila, pa je Svetska zdravstvena organizacija (*WHO*) 11. marta 2020. godine proglasila pandemiju[1,2,3].

Prvi slučaj bolesti COVID-19 registrovan je u Srbiji 6. marta 2020. Pacijenti sa sumnjom na kovid javljali su se izabranom lekaru, pa su upućivani na infektivna odeljenja opštih bolnica i na infektivne klinike. Radna grupa Ministarstva zdravlja Republike Srbije i Instituta za javno zdravlje Srbije „Dr Milan Jovanović Batut'', prateći aktuelna dostupna obaveštenja i stručnu literaturu, izradila je Protokol za lečenje pacijenata sa COVID-19 koji je, u skladu sa novim stavovima i saznanjima, korigovan pa je aktuelna bila 11. verzija protokola[4]. Pošto se broj obolelih povećavao, veoma brzo su formirane kovid ambulante po domovima zdravlja u kojima su radili lekari i specijalisti opšte medicine gde su pacijenti testirani na COVID-19 brzim antigenskim i *PCR* testom, klinički pregledani, pa su na osnovu kliničke slike i težine simptoma upućivani na kućno lečenje uz terapiju i izolaciju, dodatnu dijagnostiku ili na bolničko lečenje.

Cilj istraživanja

Ispitati koje su karakteristike pacijenata pregledanih u kovid ambulanti u trećem talasu COVID-19 epidemije u pogledu simptoma, rezultata testiranja, prisustva komorbiditeta i kakav je bio ishod nakon pregleda u kovid ambulanti.

Metod

Jedan lekar u kovid ambulanti doma zdravlja popunjavao je Upitnik koji je posebno dizajniran za ovo istraživanje za svakog pacijenta, koji se u razdoblju od sedam uzastopnih dana od 23. do 29. aprila 2021. javio na pregled. Dobijeni su podaci o polu, starosti, simptomima bolesti, prisutnim komorbiditetima, vakcinalnom statusu i ishodu nakon obavljenog pregleda. Za obradu dobijenih podataka korišćene su metode deskriptivne statistike, a za poređenje grupa korišćen je Hi-kvadrat test nezavisnosti u programskom paketu *SPSS* (*Statistical Package for Social Sciences*) *20.0 for Windows*. Statistička značajnost je definisana za nivo $p< 0,05$.

Introduction

In late 2019, the COVID-19 pandemic began in the Chinese town of Wuhan, where the SARS-CoV-2 virus was identified as its cause. Due to the virus's contagious nature and the movement of people for business, commerce, and social interactions, the epidemic spread rapidly. As a result, the World Health Organization (WHO) declared it a pandemic on March 11, 2020.[1,2,3]

The first case of COVID-19 in Serbia was registered on March 6, 2020. Patients suspected of having COVID-19 visited their general practitioners (GPs), who, if necessary, referred them to the Departments of Infectious Diseases at general hospitals or specialized clinics. Working groups from the Ministry of Health of the Republic of Serbia and the Institute of Public Health of Serbia "Dr. Milan Jovanovic Batut" monitored current information and scientific literature to develop a treatment protocol for COVID-19 patients. This protocol was updated in accordance with new knowledge, and by the time of this article, the 11th version was in effect.[4] As the number of infected individuals rose, COVID-19 outpatient clinics were quickly established in primary healthcare centers. GPs and medical doctors worked in these clinics and they tested patients for COVID-19 using rapid antigen tests and PCR tests. They examined patients, and based on the clinical presentation and severity of symptoms, they either sent them home with medications and advised isolation, referred them for further diagnostics, or sent them to the hospital.

Objective

Our objective was to examine the characteristics of patients in the COVID outpatient clinics during the third wave of the pandemic, focusing on their symptoms, test results, comorbidities, and outcomes of their examinations.

Method

A general practitioner (GP) from the COVID outpatient clinic at the primary healthcare center completed a questionnaire specifically designed for this research for each patient. The data were collected from random patients who visited the COVID outpatient clinic between April 23 and April 29, 2021. The information gathered included patients' gender, age, disease symptoms, comorbidities, vaccination status, and exam outcomes. We processed the data using descriptive statistics, and for group comparisons, we applied the Chi-square test of independence using the SPSS program (Statistical Package for Social Sciences) version 20.0 for Windows. Statistical significance was defined at a level of $p < 0.05$.

Rezultati

Istraživanjem je obuhvaćeno 222 pacijenta oba pola (38,3 % muškaraca i 61,7% žena), prosečne starosti 47,9±15,2 godina. U pogledu vakcinalnog statusa samo je 24,8% vakcinisano, a 60,4% je bilo kovid pozitivno (Tabela 1).

Results

The study involved 222 patients, including 38.3% males and 61.7% females, with an average age of 47.9±15.2 years. Regarding vaccination status, only 24.8% of the patients were vaccinated, while 60.4% tested positive for COVID-19 (Table 1).

Tabela 1. Posmatrane karakteristike pacijenata
Table 1. *Patients' characteristics*

Karakteristike ispitanika/Participants' characteristics	**N**	**%**
Pol/Gender		
Muški/Male	85	38,3
Ženski/Female	137	61,7
Starost/Age		
≤ 30 godina/years	28	12,6
31–50 godina/years	104	46,8
51–65 godina/years	57	25,7
> 65 godina/years	33	14,9
Poseta/Visit		
Prva/first	141	63,5
Ponovna/return	81	36,5
Vakcinalni status/vaccination status		
Vakcinisan/vaccinated	55	24,8
Nevakcinisan/unvaccinated	167	75,2
Test na COVID-19/COVID-19 test		
COVID+	134	60,4
COVID-	88	39,6
Ukupno/Total	222	100

Najčešće tegobe pacijenata koji su se javili u kovid ambulantu bili su umor, bolovi u mišićima i zglobovima, kašalj i povišena telesna temperatura (Tabela 2). Od drugih, manje zastupljenih simptoma bili su prisutni mučnina, povraćanje, lupanje srca, zujanje u ušima, poremećaj vida i drugo.

The most common complaints from patients who visited COVID clinics included malaise, joint pain, muscle pain, cough, and fever (Table 2). Less common symptoms were nausea, vomiting, heart palpitations, tinnitus, and vision problems.

Tabela 2. Najčešće tegobe kod 222 pacijenta
Table 2. *The most common symptoms in 222 patients*

Glavne tegobe/main complaints	**N**	**%**
1. ↑ Temperatura/fever	90	40,54
2. Kašalj, gušenje, nedostatak vazduha/cough, asphyxiation, breathlessness	93	41,89
3. Glavobolja, nesvestica/headache, dizziness	34	15,32
4. Poremećaj čula mirisa i ukusa/ smell and taste disorder	21	9,46
5. Umor, bolovi u mišićima i zglobovima/ malaise, muscle and joint pain	99	44,59
6. Drugo/ other	47	21,17

U pogledu komorbiditeta kod manje od polovine pacijenata bilo je prisutno i neko drugo hronično oboljenje. Nije bilo statistički značajne razlike u odnosu na pol (p=0,516), ali su kod pacijenata starije životne dobi statistički značajno češće prisutni komorbiditeti (p=0,000) (Tabela 3).

Less than half of the participants had comorbidities. There was no statistically significant difference in relation to gender (p=0.516); however, older patients had comorbidities that were statistically significantly more prevalent (p=0.000) (Table 3).

Tabela 3. Prisustvo komorbiditeta kod pacijenata
Table 3. *Patients' comorbidities*

Karakteristike ispitanika/ participants' characteristics	**Prisutan komorbiditet/ Comorbidities (N/%)**		**Statistička značajnost/ statistical significance**
	DA/YES	**NE/NO**	
Pol/ gender			p=0,516
Muški/ male	39/45,6	46/54,1	
Ženski/ female	69/50,4	68/49,6	
Starost/ age			p=0,000
≤ 30 godina/ years	3/10,7	25/89,3	
31–50 godina/ years	32/30,8	72/69,2	
51–65 godina/ years	44/77,2	13/22,8	
> 65 godina/ years	29/87,9	4/12,1	
Ukupno/ Total	108/48,6	114/51,4	222/100,0

Kod 108 pacijenata sa komorbiditetom, 39 je imalo dva oboljenja, a njih 9 čak tri hronična oboljenja. Najviše pacijenata je imalo dijabetes melitus, 61,1%.

Comorbidities were identified in 108 patients; among them, 39 had two comorbidities, and 9 had three. The majority of these patients, 61.1%, had diabetes.

Tabela 4. Struktura komorbiditeta
Table 4. *The structure of comorbidities*

Oboljenja/ disease	**N**	**%**
KVB/ CVD	41	38,0
Hipertenzija/ hypertension	31	28,7
Dijabetes/ diabetes	66	61,1
Maligne bolesti/ malignancies	8	7,4
HOBP/ COPD	14	13,0
Drugo/ other	20	18,5

Svi pacijenti su testirani na COVID-19 brzim antigenskim testom, a po potrebi i *PCR* testom.

All patients were tested for COVID-19, using rapid antigen test, and when necessary a *PCR* test.

Tabela 5. Rezultat testiranja pacijenata na prisustvo COVID-19 infekcije
Table 5. *Patients' test results for COVID-19 infection*

Rezultat testiranja/ test results	**N**	**%**
COVID+	134	60,3
COVID-	21	9,5
Brzi antigenski test negativan (urađen *PCR* - čeka se rezultat)/ rapid antigen test negative (waiting for the PCR test results)	67	30,2
Ukupno/ total	222	100

Samo je 24,8% pacijenata prethodno primilo vakcinu protiv *SARS-CoV-2* korona virusa. Nije nađena statistički značajna razlika u rezultatu testa na prisustvo COVID-19 infekcije i vakcinalnog statusa (p=0,099), niti u odnosu na prisustvo komorbiditeta (p=0,118).

Only 24.8% of patients were vaccinated against the SARS-CoV-2 virus. There was no statistically significant difference in COVID-19 test results based on vaccination status (p=0.099) or comorbidities (p=0.118).

Tabela 6. Rezultat testiranja pacijenata na COVID-19 u odnosu na vakcinalni status i prisustvo komorbiditeta
Table 6. *Patients' COVID-19 test results in relation to vaccination status and comorbidities*

Karakteristike ispitanika/ participants' characteristics	**Rezultat PCR testa/ PCR test results N/%**		**Statistička značajnost/ statistical significance**
	Covid+	**Covid-**	
Vakcinalni status/ vaccination status			p=0,099
Vakcinisani/ vaccinated	22/40,0	33/60,0	
Nevakcinisani/ unvaccinated	99/59,3	68/40,7	
Komorbiditet/ comorbidities			p=0,118
DA/ YES	70/64,8	38/35,2	
NE/ NO	64/56,1	50/43,9	
Ukupno/ Total	134/60,4	88/39,6	

Pri dolasku u kovid ambulantu i nakon obavljenog testiranja, obavljen je klinički pregled i na osnovu težine kliniče slike određivan je i ishod posete. Pacijenti sa blažom kliničkom slikom i bez znakova za prisustvo komplikacija su, uz propisanu terapiju, upućeni na kućno lečenje i izolaciju. Zbog sumnje na neku komplikaciju COVID-19, 26,1% pacijenata je upućeno na dopunsku dijagnostiku (Rtg pluća, laboratorija, na preglede kod specijalista na sekundarnom ili tercijarnom nivou zdravstvene zaštite), a 10,4% je zbog težine kliničke slike i prisutnih znakova za komplikacije odmah upućeno u bolnicu (Tabela 7). Vakcinalni status nije uticao na ishod posete (p=0,240), ali su značajno češće kovid pozitivni pacijenti upućivani na dopunsku dijagnostiku i u bolnicu u odnosu na one koji su bili kovid negativni (p=0,000). U odnosu na starosnu dob pacijenata, na dopunsku dijagnostiku i konsultativne pregled najčešće su upućivane osobe starosti od 51 do 65 godina, a na bolničko lečenje osobe starije od 65 godina (p=0,004) i pacijenti sa komorbiditetom (p=0,003).

During their visit to the COVID outpatient clinics, patients were tested and examined. Based on the severity of their clinical presentation, the outcomes of their visits were determined. Patients with mild symptoms and no signs of complications were prescribed appropriate therapy and instructed to isolate at home. However, 26.1% of patients were referred for further diagnostics due to suspected COVID-19 complications, which included chest X-rays, laboratory tests, and referrals to specialists at secondary and tertiary health facilities. Additionally, 10.4% of patients, whose clinical presentations indicated severity and signs of complications, were referred to the hospital immediately (see Table 7). Vaccination status did not influence visit outcomes (p=0.240). However, patients who tested positive for COVID were referred more frequently for further diagnostics and hospital treatment compared to those who tested negative (p=0.000). Regarding patients' age, those aged 51 to 65 were most often referred for additional diagnostics. Patients over 65 (p=0.004) and those with comorbidities (p=0.003) were more frequently referred for hospital treatment.

Tabela 7. Ishod posete nakon pregleda pacijenta u kovid ambulanti
Table 7. *Patient outcomes following examinations at the COVID outpatient clinic*

Karakteristike ispitanika/ Participants' characteristics	**Ishod pregleda u kovid ambulanti/ visit outcome following examination at the COVID outpatient clinic**				**Statistička načajnost/ statistical significance**
	Upućen na kućno lečenje/ home treatment	**Upućen na dalju dijagnostiku/ referred to further diagnostics**	**Upućen u bolnicu/ referred to a hospital**	**Ukupno od 222 pacijenta/ Out of the total of 222 patients**	
Vakcinalni status/ vaccination status					p=0,240
Vakcinisani/ vaccinated	40/72,7	10/18,2	5/9,1	55/24,8	
Nevakcinisani/ unvaccinated	101/60,5	48/28,7	18/10,8	167/75,2	
Rezultat testa/ test results					p=0,000
COVID+	61/43,3	52/89,7	21/91,3	134/60,4	
COVID-	80/56,7	6/10,3	2/8,7	88/39,6	
Starost ispitanika/ participants' age					p=0,004
< 30 godina/ years	23/82,1	5/17,9	0/0,0	28/12,6	
31–50 godina/ years	67/64,4	31/29,8	6/5,8	104/46,8	
51–65 godina/ years	29/50,9	18/31,6	10/17,5	57/25,7	
> 65 godina/ years	22/66,7	4/12,1	7/21,2	33/14,9	
Prisustvo komorbiditeta/ comorbidities					p=0,003
DA/ YES	64/59,3	25/23,1	19/17,6	108/48,6	
NE/ NO	77/67,5	33/28,9	4/3,5	114/51,4	
Ukupno/ Total	141/63,5	58/26,1	23/10,4	222/100,0	

U strukturi komorbiditeta najzastupljeniji je dijabetes, a potom kardiovaskularne bolesti (KVB) i izolovana hipertenzija.

Among the comorbidities, diabetes was the most prevalent, followed by cardiovascular diseases (CVD), and isolated hypertension.

Tabela 8. Zastupljenost pojedinih oboljenja u okviru komorbiditeta u odnosu na stepen težine bolesti
Table 8. *The occurrence of specific diseases in relation to comorbidities and their impact on disease severity.*

Komorbiditeti/ comorbidities	**Stepen težine bolesti/ Level of disease severity N/%**			**Od 108 ispitanika sa komorbiditetima/ out of 108 participants with comorbidities**
	Kućno lečenje/ home treatment	**Dijagnostika/ diagnostics**	**Uput za bolničko lečenje/ referral to a hospital**	
KVB/ CVD	23/56,1	11/26,8	7/17,1	41/38,0
Hipertenzija/ hypertension	16/51,6	7/22,6	8/25,8	31/28,7
Dijabetes/ diabetes	37/56,1	16/24,2	13/19,7	66/61,1
Maligne bolesti/ malignancies	5/62,5	1/12,5	2/25,0	8/7,4
HOBP/ COPD	10/71,4	1/7,1	3/21,4	14/13,0
Drugo/ Other	13/65,0	4/20,0	3/15,0	20/18,5
Ukupno sa komorbiditetom/Total with comorbidities	65/60,2	24/22,2	19/17,6	108/48,6
Bez komorbiditeta/ without comorbidities	76/66,7	34/29,8	4/3,5	114/51,4

Od ukupno 23 pacijenta koji su zbog težine kliničke slike upućeni na bolničko lečenje, kod njih 19 je bilo prisustvo komorbiditeta (Tabela 9). Najčešće je bio prisutan dijabetes, KVB i hipertenzija.

Out of 23 patients referred to the hospital due to severe clinical presentations, 19 had comorbidities (Table 9). The most common conditions were diabetes, cardiovascular disease, and hypertension.

Tabela 9. Prisustvo komorbiditeta kod pacijenata koji su upućeni u bolnicu
Table 9. *The presence of comorbidities in patients who are referred to a hospital*

Struktura komorbiditeta/ structure of comorbidities N/%							
KVB/ CVD	Hipertenzija/ hypertension	DM	Maligne bolesti/ malignancies	HOBP/ COPD	Nešto drugo/ Something else	Bez komorbiditeta/ No comorbidities	Ukupno sa komorbiditetom/ Total with comorbidities
8/34,8	8/34,8	14/60,9	2/8,7	2/13,4	2/8,7	4/17,4	23/100

Komorbiditeti/ comorbidities: DM - Diabetes mellitus; HOBP - hronična opstruktivna bolest pluća/ COPD- chronic obstructive pulmonary disease

Diskusija

Kako se broj obolelih u COVID-19 epidemiji povećavao, infektivne klinike i bolnice su vrlo brzo bile preopterećene. Formiranje kovid ambulanti na nivou primarne zdravstvene zaštite u domovima zdravlja doprinelo je rasterećenju sekundarnog i tercijarnog nivoa zdravstvene zaštite i povećalo kapacitet zdravstvenog sistema da zbrine rastući broj novih slučajeva. Radna grupa Ministarstva zdravlja Republike Srbije i Instituta za javno zdravlje Srbije „Dr Milan Jovanović Batut'' izradila je Protokol za lečenje pacijenata sa COVID-19 u kome je prema težini bolesti formirano pet oblika bolesti. Za svaki oblik bolesti određena je ustanova za zbrinjavanje pacijenata sa tim oblikom bolesti i preporučena terapija. Za zbrinjavanje u okviru kućnog lečenja i izolaciju uz kontrolu i nadzor kovid ambulanti predviđen je ''Oblik bolesti 1'': 1. Pozitivan nazofaringealni bris (*PCR* na *SARS-CoV-2*, Ag test); 2. Asimptomatska; 3. Vrlo blaga klinička slika; 4. Bolesnici bez komorbiditeta i sa blagim oblikom infekcije (hospitalizovani pacijenti sa SpO_2 > 94% i bez Rtg znakova pneumonije)[4]. U ovoj epidemiji kovid ambulante su pravile trijažu i zbrinule najveći broj obolelih. Yau JWK i saradnici, koristeći podatke prikupljene između 30. avgusta 2021. i 8. juna 2022, sproveli su retrospektivnu kohortnu studiju da bi procenili ishode i efikasnost politike vakcinacije i efikasnost singapurske nacionalne strategije zbrinjavanja obolelih od COVID-19. Singapurska strategija je potencirala zbrinjavanje najvećeg broja obolelih „kod kuće" uz partnerski odnos sa lekarima primarne zdravstvene zaštite i primenu telemedicine. Na ovaj način zbrinjavan je veći broj obolelih u zajednici, a štićen je kapacitet bolnice. Kao i u Srbiji, formiran je algoritam za trijažu u više koraka koji je omogućavao stratifikaciju rizika velikog broja pacijenata sa COVID-19 na nacionalnom nivou. Bio je to, u stvari, kriterijum za pro-

Discussion

During the COVID-19 pandemic, the number of patients rapidly increased, leading to overcrowding in clinics and hospitals. To address this, outpatient COVID clinics were established at the primary healthcare level, which helped alleviate pressure on secondary and tertiary healthcare facilities and increased the overall capacity of the healthcare system to manage the growing number of cases. Working groups from the Ministry of Health of the Republic of Serbia, along with the Institute for Public Health of Serbia "Dr. Milan Jovanović Batut," developed a treatment protocol for COVID-19 patients. This protocol outlined five levels of care based on the severity of the disease, with each level assigned to a specific healthcare institution and recommended therapy. Home management and isolation, along with monitoring and surveillance of COVID outpatient clinics, was designated as "Disease Form 1." The criteria for this classification include: 1. A positive nasopharyngeal swab (PCR test for SARS-CoV-2 or antigen test); 2. The patient is asymptomatic; 3. The clinical presentation is very mild; 4. The patient has no comorbidities and presents with mild infection (hospitalized patients with SpO2 levels above 94% and no chest X-ray signs of pneumonia).[4] During the pandemic, COVID outpatient clinics focused on triaging and caring for the highest number of patients. Yau JWK et al. conducted a retrospective cohort study using data collected between August 30, 2021, and June 8, 2022, to evaluate the outcomes and effectiveness of vaccination policies and the Singapore national strategy for managing COVID-19 patients. Singapore's strategy emphasized managing the majority of patients at home, in collaboration with primary healthcare doctors and the use of telemedicine. The majority of patients in the community were managed effectively, which helped protect hospital capacity. Similar to

cenu rizika koji se sastoji od komorbiditeta, starosti, statusa vakcinacije, pregleda/kliničkih nalaza i simptoma. Prema rezultatima njihovog istraživanja, ovakvom strategijom bilo je moguće da se više od 93% slučajeva obolelih usmeri na oporavak kod kuće[5]. U našem istraživanju najveći broj pacijenata sa COVID-19 zbrinut je kod kuće, a samo je 10,4% pacijenata upućeno u bolnicu, ali ne znamo da li su tamo i zadržani.

U istraživanju koje je sprovela Sekcija opšte medicine na 676 pacijenata u nekoliko kovid ambulanti u Srbiji, najčešći simptomi kod pacijenta u kovid ambulantama su kašalj i povišena telesna temperatuta, a broj kovid pozitivnih pacijenata skoro isti: 61% u njihovom i 60,4% u našem istraživanju[6]. U istraživanju Vaughan L. i saradnika na 257 kovid pozitivnih, ambulantno testiranih pacijenata nađena je velika heterogenost simptoma, a najčešći su kašalj, groznica i temperatura[7], dok Pandey R. i saradnici kao najčešći simptom navode groznicu, umor i malaksalost[8]. U pogledu komorbiditeta u našem istraživanju najzastupljeniji je dijabetes, kardiovaskularne bolesti (KVB), kao i u istraživanju Pandey R. i saradnika i Htun YM i saradnika[9]. U našem istraživanju nije nađena statistički značajna razlika u rezultatu testa na prisustvo COVID-19 infekcije i vakcinalnog statusa, niti u odnosu na prisustvo komorbiditeta. Pacijenti sa komorbiditetom su imali težu kliničku sliku, kao što u svome radu navode Ejaz H. i saradnici[10]. Yang X. i saradnici u svom istraživanju koje su sproveli na 861 526 pacijenata Južne Karoline u periodu od januara 2021. do aprila 2022. godine su metodom logističke regresije našli da vakcinacija smanjuje morbiditet u odnosu na nevakcinisane, kao i da su potpuno vakcinisane osobe pokazale manji rizik od hospitalizacija u odnosu na nevakcinisane[11]. U našem istraživanju samo je četvrtina pacijenata prethodno vakcinisana, ali vakcinalni status pacijenata nije uticao na težinu oboljenja, odnosno na hospitalizaciju. Među našim pacijentima, osobe starije životne dobi i osobe sa komorbiditetom češće, nakon pregleda, su upućivane u bolnicu. U svome radu Malik YS i saradnici pored ostalog iznose i da su stariji i ljudi sa komorbiditetima skloniji ozbiljnim kliničkim ishodima[12]. Li H. i saradnici uradili su retrospektivnu opservacionu kohortnu studiju na 3 265 pacijenata iz kineskih regionalnih oblasti zahvaćenih epidemijom. Ovom studijom su pokušali da istraže efekte vakcinacije na težinu bolesti i faktore za uklanjanje virusa i hospitalizaciju kod inficiranih pacijenata. Rezultati studije su pokazali pozitivan efekat vakcinacije na težinu oboljenja, politiku kontrole i prevenciju pandemije COVID-19[13]. Do istog zaključa su došli i Yau JWK i saradnici u Singapuru, navodeći da su vakcinacije značajno smanjile rizik od ozbiljnosti bolesti i smrtnosti u svim starosnim grupama[5].

the approach taken in Serbia, a multi-step triage algorithm was developed that enabled risk stratification for a significant number of COVID-19 patients at a national level. This algorithm included risk evaluation criteria such as comorbidities, age, vaccination status, clinical findings, and symptoms. As a result, more than 93% of those affected were advised to recover at home[5]. In our study, most COVID-19 patients were also managed at home, with only 10.4% being sent to the hospital. However, we do not have information on whether those patients were subsequently hospitalized.

The research conducted by the Section of General Medicine involved 676 patients across several COVID clinics in Serbia. It found that the most common symptoms among patients in the outpatient clinics were cough and fever. The proportion of COVID-positive patients in their study was 61%, which is very similar to the 60.4% found in our research.[6]. In a study conducted by Vaughan L. et al. involving 257 COVID-positive outpatients, a significant variety of symptoms was observed, with the most common being cough, chills, and fever[7]. Similarly, in the research by Pandey R. et al., the predominant symptoms reported were fever, fatigue, and malaise[8]. In our research, the most common comorbidities were diabetes, cardiovascular disease (CVD), and hypertension, consistent with the findings of Pandey R. et al. and Htun YM et al[9]. There was no statistically significant difference in test results for COVID-19 infection, vaccination status, or comorbidities in our research. Patients with comorbidities displayed more severe clinical presentations, which was also confirmed by Ejaz H. et al.[10]. In their research conducted in South Carolina on 861.526 patients from January 2021 to April 2022, Yang X. et al. found through logistic regression analysis that vaccination reduces morbidity compared to those who were not vaccinated. Additionally, fully vaccinated individuals had a lower risk of hospitalization compared to unvaccinated individuals.[11]. Only a quarter of the participants in our study had been previously vaccinated; however, the vaccination status did not affect the severity of the disease or the likelihood of hospitalization. Our findings indicated that older individuals and those with comorbidities were more frequently hospitalized. Additionally, the study by Malik YS et al. stated that older adults with comorbid conditions are at a higher risk for severe clinical outcomes.[12]. Li H. and colleagues conducted a retrospective observational cohort study involving 3.265 patients from several Chinese regional counties affected by the pandemic. The aim of their research was to examine the effects of vaccination on disease severity, virus elimination, and hospitalization among infected patients. The results of the study indicated a positive impact of vaccination on reducing disease severity and highlighted the effectiveness of vaccination in controlling the pandemic of COVID-19.[13]. Yau JWK et al. reached a similar conclusion in Singapore, stating that vaccination significantly reduces the risk of disease severity and death across all age groups [5].

U pogledu komorbiditeta kod naših pacijenata koji su upućeni u bolnicu najčešće je bio zastupljen dijabetes i hipertenzija, a kod Vaughan L. i saradnika težu kliničku sliku imali su pacijenti sa bolestima bubrega, KVB bolestima, otežanim disanjem i gastrointestinalnim simptomima[7].

Zaključak

Nije nađena značajna razlika u pozitivnom rezultatu testa na COVID-19 u odnosu na vakcinalni status i prisustvo komorbiditeta kod pacijenata. Nakon pregleda, dve trećine pacijenata je zbrinuto i uz terapiju upućeno na kućno lečenje, a samo 10% pacijenata je upućeno u bolnicu, najčešće pacijenti stariji od 65 godina, kao i pacijenti sa komorbiditetom.

Patients with comorbidities who were admitted to the hospital primarily suffered from diabetes and hypertension. In the study by Vaughan L. et al., severe clinical presentations were observed in patients with kidney issues, cardiovascular diseases (CVD), respiratory problems, and gastrointestinal symptoms[7].

Conclusion

We didn't find a significant difference in correlation between positive COVID-19 test and vaccination status and comorbidities in our patients. After the examination, two thirds of the patients were priscribed medications and sent home and only 10% were sent to hospital. They were mostly over 65 and with comorbidities.

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