

Dijagnostika i lečenje COVID-19 u primarnoj zdravstvenoj zaštiti

Diagnosis and treatment of COVID-19 in primary healthcare

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Sažetak

Pandemija COVID-19 izazvana je virusom SARS-Cov-2 i najpre se pojavila u gradu Vuhan, u Kini, u decembru 2019. U Domu zdravlja, Kruševac Ambulanta za respiratorne infekcije osnovana je 24. marta 2020. U njoj je do sada obavljeno blizu 100.000 pregleda.

Među ljudima se virus prenosi kapljičnim putem ili, ređe, prljavim rukama i ulazno mesto su sluznice nosa, usta, oči.

Infekcija se odvija u dva stadijuma. Prvi, u gornjem respiratornom traktu (GRT) i traje 5-7 dana i drugi, kada se virus spušta na pluća i zatim daje sistemsku upalu, pre svega krvnih sudova.

Dijagnoza se postavlja na osnovu anamneze, kliničke slike, fizikalnog pregleda, specifičnih virusnih testova, laboratorijskih analiza i eventualno, rendgen snimanja pluća.

Terapija je uglavnom simptomatska, a od marta 2021. godine dostupan nam je antivirusni favipiravir, dok se u januaru 2022. pojavio i molnupiravir. Kod pojave upale pluća oralni kortikosteroidi su dali dobre rezultate.

Primarna zdravstvena zaštita je, i ovog puta, bila brana ka sekundarnom i tercijarnom nivou zdravstvene zaštite. Kao i naše kolege u svetu, učili smo u hodu i taj proces traje i dalje. Prokužavanje većeg broja ljudi bilo prirodnim zaražavanjem, ili vakcinacijom vremenom će dovesti do završetka pandemije, koja će verovatno postati sezonska infekcija, ali sa mnogo blažom kliničkom slikom.

Ključne reči: COVID-19, primarna zdravstvena zaštita, lečenje

Abstract

COVID-19 pandemic is caused by the SARS-Cov-2 virus and it was first isolated in Wuhan, China, in December 2019. In Primary Healthcare Center (PHC), Kruševac, the outpatient clinic for respiratory infections was formed on March 24th, 2020. Nearly 100.000 medical exams were performed there, up to now.

The virus transmission is carried out by airborne droplets, or rarely using contaminated hands. The entrance site of the infection is nose, mouth, or eye mucosa.

The infection develops in two stages. The first happens in the upper respiratory tract (URT) and lasts 5-7 days, and the second, when the virus descends to the lungs, and from there causes systemic inflammation, primarily of the blood vessels.

The diagnosis is based on the personal history, clinical presentation, physical exam, specific viral tests, lab analysis, and eventually, chest X-ray.

Therapy is mainly symptomatic, and since March 2021 we got antiviral favipiravir, and in January 2022 another antiviral, molnupiravir, became available. Oral corticosteroids showed promising results in patients with viral pneumonia.

Primary healthcare was a dam against the secondary and tertiary healthcare this time, too. As our colleagues worldwide, we were learning in stride, and the process is ongoing. The more people get exposed to the virus, either naturally or by vaccination, the sooner the pandemic will end but not entirely and probably stay with us as a seasonal infection with easier clinical presentation.

Keywords: COVID-19, primary healthcare, treatment

Uvod

Pandemija COVID-19 izazvana je virusom SARS-Cov-2. Najpre se pojavila u gradu Wuhan, u Kini, decembra 2019, da bi se zatim proširila po celom svetu. Svetska zdravstvena organizacija (SZO) proglasila je pandemiju 11. marta 2020. Ovo je tragedija velikih razmera koja još uvek uzrokuje ogromne zdravstvene, društvene i ekonomske probleme u celom svetu. SZO, kao krovno svetsko zdravstveno savetodavno telo, sve vreme pokušava da koordiniše borbu sa ovim virusom. U praksi, različite zemlje imaju različite mere u borbi sa virusom. Jedino što se pokazalo delotvornim je izolacija, nošenje maski i držanje fizičke distance. Pojava vakcina krajem 2020. dala je nadu u borbi sa virusom, ali su nove mutirane varijante delimično umanjile delotvornost vakcina.

U Domu zdravlja Kruševac 24. marta 2020 osnovana je Ambulanta za respiratorne infekcije – ARI. U njoj je do sada obavljeno blizu 100.000 pregleda. U svom sklopu ima i laboratoriju, rendgen službu i svoje sanitetsko vozilo. Broj zdravstvenih radnika varira zavisno od epidemiološke situacije (maksimalno 16 lekara i 25 sestara). Osoblje obezbeđuje Služba za zdravstvenu zaštitu odraslog stanovništva, koja takođe daje i kadar za vakcinaciju protiv COVID-a 19, a bavi se i lečenjem non-COVID pacijenata.

Metod

Pregled aktuelne literature i podataka o propisivanju antibiotika iz elektronskog kartona pacijenata koji su se javljali u ARI, Kruševac u periodu od 01.01.2020. do 31.01.2022.

Epidemiologija

Još uvek ne postoje čvrsti dokazi o tome kako je virus od zoonoze postao antropozoon. Među ljudima virus se prenosi kapljičnim putem i ulazno mesto su sluznice nosa, usta, oči.¹ Inkubacija traje 1-14 dana (najčešće 2-5 dana). Pacijent je zarazan 2-3 dana pre pojave simptoma i do 10-tak dana od pojave prvih simptoma. Ove karakteristike se menjaju zavisno i od soja virusa. Pacijenti u riziku za teške forme bolesti su gojazni, dijabetičari, kardiovaskularni bolesnici, kao i bolesnici sa komorbiditetima, nevakcinisani, starije osobe.

Patogeneza

Infekcija se odvija u dva stadijuma. Prvi, u gornjem respiratornom traktu - GRT i traje 5-7 dana, a drugi, kada se virus spušta na pluća i dovodi do sistemskog zapaljenja krvnih sudova. Sa imunološkog aspekta ovo su dve različite bitke. Virus se brzo razmnožava u GRT i već za 3-5 dana ljudi dobijaju simptome i postaju zarazni. Veoma važnu ulogu ima urođeni imunitet koji treba da uspori replikaciju vi-

Introduction

COVID-19 pandemic is caused by the SARS-Cov-2 virus. It was first isolated in Wuhan, China, in December 2019 and it spread worldwide. World Health Organization (WHO) proclaimed the pandemic on March 11th, 2020. This is a tragedy of epic proportions and it's still causing huge health, social, and economic problems all over the world. The WHO, as a cover world advisory organization endeavors continuously to coordinate the fight against the virus. In practice, different countries have different measures in their fight against the virus. The only measures that proved to be effective are isolation, face masks, and keeping physical distance. The emergence of the vaccines, at the end of 2020, gave hope in the fight against the virus but the new mutant variants partially weakened their efficacy.

In PHC, Kruševac the Outpatient Clinic for Respiratory Infections was founded on March 24th, 2020. Over 100.000 medical exams were performed there. The clinic also has its lab, X-ray, and its own ambulance. The number of health workers working there varies, depending on the epidemiological situation (max numbers, 16 physicians and 25 nurses). The staff is provided by the Department of General Medicine, which also provides the personnel for the vaccination against COVID 19, and treats non-COVID patients, as well.

Method

Review of the current literature and the data obtained from the electronic health records on antibiotic prescription in Outpatient Clinic for Respiratory Infections, Kruševac, from 01.01.2020. to 31.01.2022.

Epidemiology

There's still no solid evidence on how the virus became anthroponosis from zoonosis. The virus is spread among people by inhaling viral droplets and the entrance sites are the nose, mouth, and eye mucosae.¹ The incubation period lasts from 1-14 days (most commonly 2-5 days). A patient is contagious 2-3 days before the onset of the symptoms and approximately 10 days after the onset. These characteristics are changing, depending on the virus strain. Patients at risk for the severe forms of the disease are obese, diabetics, cardiovascular patients, as well as, patients with comorbidities, unvaccinated, older persons.

Pathogenesis

The infection develops in two stages. The first is in the upper respiratory tract - URT and it lasts 5-7 days and the second is when the virus descends to the lungs and then

rusa. Aktiviranje urođenog imuniteta je signal za aktivaciju stečenog imuniteta (*CD4*, *CD8*, memorijske *B* ćelije) koji je odgovoran za odbranu donjeg respiratornog trakta. Dok je replikacija virusa u GRT brza, razvoj pneumonije nije i ona se javlja tek nakon 7-14 dana (objašnjenje za efikasnu zaštitu od teže bolesti i hospitalizacije kod vakcinisanih pacijenata). Veoma je važno poznavati patogenezu virusa zbog tumačenja simptoma, odlučivanja za odgovarajuće laboratorijske i dijagnostičke postupke, kao i određivanje terapije.

Klinička slika

Rani simptomi – Većina pacijenata se žali na subfebrilne temperature (ređe visoka febrilnost), jezu, drhtavicu, malaksalost, glavobolju, mijalgije, gušobolju, zapušeni nos, nadražajni kašalj, gastrointestinalne tegobe (ređe kod odraslih, češće kod dece). Jedan broj pacijenata se žali i na gubitak ili izmenjeno čulo ukusa i /ili mirisa, što se u pogledu ozbiljnosti kliničke slike pokazalo kao dobar prognostički znak. Pacijenti sa anosmijom su značajno ređe hospitalizovani i završavali u jedinicama intenzivne nege u poređenju sa pacijentima kod kojih su ova čula bila očuvana tokom COVID-19 infekcije.²

Kasni simptomi – Javljaju se kada se bolest spusti na pluća. Manifestuju se nastavkom febrilnosti, kašljem koji je praćen gušenjem, osećajem nedostatka vazduha, zamaranjem, gubitkom apetita. Kod ovih pacijenata se razvija upala pluća koja neretko progredira u ARDS (akutni respiratorni distress sindrom).

Dijagnoza

Anamneza i klinička slika – COVID-19 u početnom stadijumu liči na većinu drugih respiratornih infekcija. Teško ga je razlikovati bez dodatne dijagnostike. Pacijenti obično imaju subfebrilne temperature, malaksali su, žale se na glavobolje, mijalgije. U epidemiološkoj anamnezi često navode kontakt sa zaraženom osobom.

Fizikalni pregled – grlo je obično blaže hiperemično, podvilične žlezde nisu bolne, niti uvećane, nos je često zapušeni. Iako pneumonija počinje inicijalno u intersticijumu (samim tim bi bila nedostupna auskultaciji) u praksi se pokazalo da se auskultatorni nalaz vrlo jasno manifestuje krepitacijama nad jednim ili oba plućna krila. Pulsna oksimetrija može biti od pomoći u proceni težine bolesti, ali je treba tumačiti u sklopu kliničke slike (na nju utiču i anemija, hladni prsti, lak za nokte na noktima ruku, pridružene bolesti). Preporuke iz protokola za lečenje COVID-a 19 kažu da pacijenta sa saturacijom ispod 94% i upalom pluća ili komorbiditetima treba uputiti na bolničko lečenje, ali u praksi to nije uvek izvodljivo, pre svega zbog preopterećenosti bolničkih kapaciteta. Svakog pacijenta treba ponaosob procenjivati. Ako simptomatologija to zahteva vrši se i merenje krvnog pritiska, EKG.

leads to systemic blood vessel inflammation. From the immunological aspect, these are two different battles. The virus spreads fast in the URT and already in 3-5 days people show symptoms and become contagious. There's a very important role of innate immunity which should be slowing down the viral replication. Activation of the innate immunity is the signal for the activation of the acquired immunity (*CD4*, *CD8*, memory *B* cells) which is responsible for the defense of the lower respiratory tract. And while the viral replication in the URT is fast, pneumonia occurrence isn't and it appears 7-14 days later (the explanation for the effective protection from the severe forms of the disease and hospitalization in vaccinated patients). It's very important to learn about the virus pathogenesis to be able to interpret the symptoms, decide on appropriate lab analysis, and diagnostic procedures, as well as, the therapy protocols.

Clinical presentation

Early symptoms – The majority of patients complain of subfebrile fevers (rarely high fever), chills, shivering, exhaustion, headache, myalgias, sore throat, stuffed nose, irritating cough, gastrointestinal problems (rarely in adults, more often in children). A certain number of patients complain of the loss of smell and/or taste which proved to be a good prognostic sign, as far as the severity of the disease was concerned. Patients with anosmia were significantly more rarely hospitalized and ended up in the ICU, as compared to the patients with the intact senses during the COVID-19 infection.²

Late symptoms – They appear when the lungs are infected. They present with the continuation of febrility, cough followed by difficulty breathing, sense of breathlessness, fatigue, and loss of appetite. Pneumonia develops in these patients and very often it progresses into ARDS (*Acute Respiratory Distress Syndrome*).

Diagnosis

Personal history and clinical presentation – COVID-19 is similar to any other respiratory infection in its early stages. It's very difficult to separate it from other respiratory diseases without further diagnostics. Patients usually present with subfebrile temperatures, fatigue, headaches, myalgias. In epidemiological history they often mention contacts with diseased persons.

Physical examination – throat is usually mildly hyperemic, submandibular lymph glands are non-tender, and not enlarged, nose is often stuffed. Although pneumonia initially starts in the interstitium (therefore it would be unavailable for auscultation), in practice, auscultatory findings are very clear with crepitations above one or both lungs. Pulse oximetry can be helpful in the assessment of the disease severity but should be interpreted in line with clinical findings (it is affected by

Virusni testovi:

RT-PCR (Reverse Transcription Polymerase Chain Reaction) – visokosenzitiv i specifičan test. Registruje jedan ili više virusnih *RNA* gena i ukazuje na trenutnu ili nedavnu infekciju. Duže vreme detektuje prisustvo čestica virusa i nije dokaz da je osoba trenutno zaražena. Treba ih tumačiti u sklopu kliničke slike.

Brzi antigenski test – Registruje specifičan virusni antigen. Manje je senzitiv i nego *PCR*, ali je praktičan za brzu dijagnostiku. Treba ga uraditi u odgovarajućem vremenskom razmaku (između 1.-7. dana od početka bolesti, po uputstvu proizvođača, ali su se u praksi pokazali najpouzdaniji između 2.-5. dana).

Serološki testovi – nemaju svrhu u dijagnostici akutne bolesti. Prva *IgM* antitela se javljaju tek nakon 7 dana od početka bolesti³.

Laboratorijska dijagnostika: U ambulantnim uslovima dostupni su nam krvna slika (KS) sa leukocitarnom formulom, *CRP* i glikemija (glukometar). Krvna slika je neretko nespecifična, ali se sreću i nalazi limfopenije⁴ (može biti prediktor ozbiljnije bolesti), neutrofilija sa limfocitopenijom, trombocitopenija, smanjen *PCT* (procenat zapremine trombocita u krvi). *CRP* (C-reaktivni protein) je produkt jetre koji nastaje kao odgovor organizma na bilo koji oblik inflamacije. U *COVID* ambulantama pokazao se kao koristan parametar za praćenje stanja pacijenata. Njegove vrednosti treba pratiti u kontekstu kliničke slike i pogodan je za odlučivanje o uvođenju odgovarajuće terapije. Dostupno nam je i merenje glikemije na glukometrima. Pogoršanje glukokontrole pokazalo se kao loš prognostički znak kod *COVID*-a.

Rendgen dijagnostika – Ne preporučuje se za dijagnostikovanje *COVID*-a⁵. Naročito je ne treba raditi prvih dana bolesti, jer se virus tek nakon 5-7 dana spušta na pluća. Radiografski nalazi kod *COVID*-a nisu specifični (mogu ličiti na druge respiratorne bolesti) i treba ih tumačiti u sklopu kliničke slike.

Terapija

Do sada je u Republici Srbiji izdato 13 protokola o lečenju *COVID*-19 infekcije koji su se menjali kako su se sticala nova znanja u lečenju bolesti. Deo protokola koji se odnosi na lečenje u PZZ od terapije nije preporučivao ništa drugo osim vitamina (vit C, vit D) i antioksidansa (alfalipoininska kiselina). Budući da se radi o virusnoj infekciji za koju ne postoji specifično lečenje, ovakav pristup je opravdan, ali je u praksi to izgledalo drugačije. Mnogo je pacijenata kod kojih dođe do pojave upale pluća i pogoršanja saturacije (i po protokoli-ma bi ih trebalo uputiti na bolničko lečenje), ali zbog preopтереćenosti zdravstvenog sistema to nije bilo uvek moguće.

anemia, cold fingers, nail polish, and comorbidities). The *COVID* 19 treatment protocol recommendations suggest that patients with saturation of less than 94% and pneumonia or comorbidities should be sent to a hospital. But, in practice, it's often impossible, mostly due to the overwhelmed hospital capacities. Every patient should be evaluated individually. If it was necessary, we also measured arterial tension and performed ECGs.

Viral tests:

RT-PCR (Reverse Transcription Polymerase Chain Reaction) test – is a highly sensitive and specific test. It registers one or more viral *RNA* genes and **signifies current or recent infection**. It detects viral particles for a longer period of time and is not necessarily a proof of current infection. It should be interpreted in the current clinical setting.

Rapid antigen test – It registers specific viral antigens. It is less sensitive than *PCR* but practical for rapid diagnosing. It should be performed at the right moment (between 1.-7. day since the disease onset, as advised by the producer, but in practice, they proved to be the most sensitive between 2.-5. day).

Serological tests – are of no use in diagnosing acute illness. First *IgM* antibodies appear mostly after 7 days from the disease onset³.

Lab results: In our outpatient clinic we had CBC (complete blood count) with leukocyte formula, *CRP*, and glycemia (measured by glucometer). CBC is often non-specific but lymphopenia can be present⁴ (may be a predictor of the severe illness), neutrophilia with lymphocytopenia, thrombocytopenia, lower *PCT* (percentage of platelets volume). *CRP* (C-reactive protein) is emerging as a body's response to any form of inflammation. In the *COVID* outpatient clinics, it proved as a very useful parameter in following the patient's condition. Its values should be interpreted in line with clinical presentation and it's useful for therapy decision making. We also had glucometers. Worsening of glucocontrol proved to be a bad prognostic sign in *COVID*.

Chest X-ray – is not recommended for *COVID* diagnosis⁵. It shouldn't be performed in the early days of the disease since the virus descends to the lungs only after 5-7 days. Radiologic findings in *COVID* are not specific (they may resemble any other respiratory disease findings) and should be interpreted in the current clinical setting.

Therapy

There were 13 *COVID*-19 treatment protocols in Serbia and they changed as new information on the disease treatment occurred. A part of the protocols referring to primary health-

Ovaj rad pisan je dok je na snazi bio 12. protokol za lečenje COVID-19 infekcije u Republici Srbiji.

Lečenje COVID-19 infekcije u PZZ podrazumeva:

Odmor, dovoljan unos tečnosti – mnogi pacijenti ne uzimaju za ozbiljno ove preporuke, a one su od esencijalne važnosti u borbi organizma sa virusom. Često smo svedoci kolabiranja pacijenata zbog dehidracije (febrilnost, nedovoljan unos tečnosti).

Vitaminska terapija – protokoli preporučuju veći unos vitamina D (minimum 2000 i.j./dan), vitamin C 1g/dan. Alfa-lipoinna kiselina je preporučivana u prvim protokolima zbog svojih antioksidativnih dejstava i eventualnog lečenja anosmije, ali nije dala željene rezultate i izbačena je iz protokola. Voditi računa kod doziranja vitaminske terapije zbog neželjenih dejstava u vidu mučnine, dijareje.

Favipiravir – antivirusni koji je primarno korišćen u lečenju ozbiljnijih oblika gripa. Prema studijama dovodi do smanjenja virusnog prisustva nakon upotrebe⁶. Od marta 2021. dostupan je u COVID ambulancama. Preporučuje se za testom potvrđene COVID pacijente, koji imaju simptome i kod kojih postoji rizik od komplikacije bolesti. Preporuka je da se uvede u terapiju do petog dana od početka simptoma. Doziranje 1.600 mg/12h prvog dana, a zatim 600 mg/12h još 4 dana.

Molnupiravir – takođe antivirusni novije generacije, specifičan za lečenje COVID-a. Funkcioniše po principu izazivanja grešaka u genetskom kodu virusa i na taj način sprečava njegovu dalju reprodukciju⁷. Preporučuje se pacijentima kod kojih je potvrđena infekcija i imaju rizik za teži oblik bolesti. Takođe se preporučuje davanje do 5. dana od početka simptoma. Tablete su od 200mg i preporučeno doziranje je 800 mg/12h.

Antibiotici – nemaju ulogu u lečenju COVID-a, osim ako ne dođe do bakterijske superinfekcije⁸. Po nekim dosadašnjim saznanjima to je u PZZ negde u oko 7%-8% pacijenata. Zabunu je uvela preporuka za azitromicin u prvim protokolima (zajedno sa hidroksihlorokinom), ali je ideja za preporuku bilo njegovo imunomodulatorno dejstvo. Nažalost, u praksi nije dao željene efekte, te je ubrzo isključen iz protokola. Statistika u našoj ambulanti početkom 2020 govori da je oko 50% pacijenata sa potvrđenom dijagnozom COVID-a dobijala antibiotik, a 50% simptomatsku terapiju. U oktobru 2021, antibiotik je dobijalo 65%, antivirusne 9%, a simptomatsku terapiju 26%. Početkom 2022. propisivanje antibiotika i dalje ostaje visoko 64%, antivirusne dobija 21%, a simptomatsku terapiju 15%. U PZZ nemamo mogućnost određivanja prokalcitonina (ukazuje na postojanje bakterijske infekcije), te se eventualno uvođenje antibiotika zasniva na proceni kliničke slike, Le formule i CRP-a.

care treatment recommended only vitamins (Vit C, Vit D) and antioxidants (alpha-lipoic acid). Since this is a viral infection, without specific treatment, this approach may be justified but the reality was different. There were a lot of patients with pneumonia and deterioration of saturation (and if following the protocol they should have been sent to the hospital) but due to the patient overload, it wasn't always possible. This paper was written while the 12th protocol for COVID-19 treatment was effective in the Republic of Serbia.

The COVID-19 treatment in PCP includes:

Rest, fluid intake – many patients don't take these recommendations seriously and they are of essential importance in a body's fight against the virus. We often witnessed patients fainting due to dehydration (febrility, insufficient fluid intake).

Vitamin therapy – protocols recommend a higher intake of vitamin D (minimum 2000 I.U./day), vitamin C 1g/day. Alpha-lipoic acid was recommended in the first protocols for its antioxidant characteristics and as a possible anosmia treatment but it failed to be effective so it was removed from the protocol. Vitamins should be given with precaution due to their side effects in the form of nausea, diarrhea, etc.

Favipiravir – is an antiviral, primarily used in the treatment of severe forms of flu. According to studies, it leads to a decrease in the viral load⁶. Since March 2021 it was available in the COVID outpatient clinics. It's recommended for COVID positive symptomatic patients who are expected to develop a severe form of the disease with complications. The recommendation is to introduce it until the fifth day from the symptom onset. Dosing as follows: 1.600 mg/12h, on the first day, and then 600 mg/12h for 4 more days.

Molnupiravir – is also an antiviral of the new generation, a COVID specific treatment. It works by causing mistakes in the viral genetic code and thus prevents its replication⁷. It's recommended for patients with confirmed infection and at higher risk for the severe forms of the disease. It should also be taken within 5 days from the symptom onset. Tablets are 200mg and the recommended dosing is 800 mg/12h.

Antibiotics – play no role in COVID treatment, unless there is a bacterial superinfection⁸. As far as we know now, it's around 7%-8% in PHC patients. The confusion appeared with azithromycin in the treatment recommendations, at first (together with hydroxychloroquine) but the whole idea for its use was his immunomodulatory effect. Unfortunately, it didn't produce a desirable effect in practice, so it was soon discontinued from the protocol. The statistics from our clinic show that at the beginning of 2020 about 50% of patients with the confirmed diagnosis of COVID got an antibiotic and 50% got symptomatic therapy. In October 2021, an antibiotic was prescribed to 65%, an antiviral to 9%, and symptomatic

Kortikosteroidi – u protokolima nisu predviđeni za lečenje u PZZ (tek od 13. protokola) ali nas je aktuelna situacija i preopterećenost bolnica naterala da ih i mi koristimo kod lečenja virusnih pneumonija, što je dalo odlične terapijske odgovore kod većine pacijenata. Treba naći pravo vreme za njihovo uvođenje (ne na početku bolesti da se ne suprimira imunološki odgovor, ali svakako u kasnijem stadijumu kada se razvije pneumonija i dođe do pada saturacije)⁹. U praksi najčešće koristimo prednizon, jer preporučene doze deksametazona zahtevaju unos mnogo tableta (kod nas na tržištu su u dozi od 0.5 mg). Davati ih u jutarnjoj dozi, uz obaveznu gastroprotekciju. Polako smanjivati dozu ali ne prerano jer može doći do ponovnog skoka citokina.

Simptomatska terapija – imamo mogućnost primene infuzione terapije, vitamina parenteralno, oksigenoterapije.

Zaključak

Primarna zdravstvena zaštita je dala veliki doprinos u lečenju pandemije i bila je brana ka sekundarnom i tercijarnom nivou zdravstvene zaštite. Kao i naše kolege u svetu, učili smo u hodu i taj proces traje i dalje. Čitav zdravstveni sistem i sada je izdržao pre svega zahvaljujući natčovečanskim naporima zdravstvenih radnika. Vakcinacija je spasila živote mnogih pacijenata, koji bez nje inače ne bi imali šansu. Ono što se može videti u COVID ambulantama je da vakcinisani pacijenti, čak i ako se zaraze, prođu sa mnogo blažim kliničkim slikama i prežive. Prokužavanje većeg broja ljudi, bilo prirodnim zaražavanjem, bilo vakcinacijom, vremenom će dovesti do završetka pandemije, koja će verovatno postati sezonska infekcija, ali sa mnogo blažom kliničkom slikom.

therapy to 26% of patients. At the beginning of 2022 antibiotic prescription still remained at a high level of 64%, antivirals were given to 21%, and symptomatic therapy to 15% of patients. In the PHC setting we can't order procalcitonin (informs of the possibility of the bacterial infection), so the prescription of an antibiotic is based on the clinical judgment, Le formula, and CRP value.

Corticosteroids – were not recommended for the treatment in the PHC (only since the 13th protocol) but the current situation and hospital overload made us use them, as well, in the treatment of viral pneumonia, which gave excellent results in the majority of patients. The timing for their introduction should be right (not at the beginning, in order not to suppress an immune response but surely later with the appearance of pneumonia and the drop in saturation)⁹. We mainly used prednisone because the recommended doses of dexamethasone require intake of a lot of tablets (in our market there is only a dose of 0.5 mg). They should be given in a single, morning dose, with gastroprotection. The dose should be tapered down slowly because there is a danger of a repeated cytokine increase.

Symptomatic therapy – we were able to give infusion therapy, parenteral vitamins, oxygen.

Conclusion

Primary healthcare made huge effort in the fight against pandemic and was a dam against the secondary and tertiary healthcare system. As our colleagues worldwide, we were learning in stride, and the process is ongoing. The entire health system is still standing, primarily thanks to the extreme effort of all health workers. Vaccination surely saved many patients' lives, who would have no chance without it otherwise. We witnessed, in our clinic, that vaccinated patients, even if they got infected, had milder symptoms and they survived. The more people get exposed to the virus, either naturally or by vaccination, the sooner the pandemic will end but not entirely and probably stay with us as a seasonal infection with easier clinical presentation.

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