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SARS-COV-2 INFECTION IN PATIENS WITH CHRONIC DISEASES

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SARS-CoV-2 -ით გამონვეული ინფექცია ქრონიკული დაავადებების მქონე პაციენტებში
თბილისის სახელმწიფო სამედიცინო უნივერსიტეტი

რეზიუმე

SARS-CoV-2-ით გამონვეული ინფექცია (COVID-19) მრავალფეროვანი კლინიკური სიმპტომებით გამოირჩევა. დაავადების მანიფესტაცია და მიმდინარეობა მრავალ ფაქტორზე დამოკიდებული, მათ შორის პაციენტის ასაკზე, სქესსა და თანმხლებ დაავადებებზე. კვლევამ აჩვენა, რომ ქრონიკული დაავადებების მქონე პაციენტებში COVID-19, ძირითადად, სისტემური სიმპტომებით ვლინდება, როგორცაა ცხელება სისუსტე და ტკივილი. მწვავე ტკივილის სხვადასხვა სახეებიდან თავის ტკივილი ყველაზე პრევალენტურ სიმპტომს წარმოადგენს, იგი ხანგრძლივი მიმდინარეობითა და სიმძიმით ხასიათდება. ქრონიკულ პაციენტებში ხშირად აქვს აღვილი სხვადასხვა სახის გართულებებს, მათ შორის ბრონხოპნევმონიას, რაც, პაციენტთა 27%-ს განუვითარდა და ჰოსპიტალიზაციის ერთ-ერთი მთავარი მიზეზი აღმოჩნდა. ამგვარი გართულებები, შესაძლოა, მოგვიანებით, გახანგრძლივებული COVID-19-ის, ანუ პოსტ-კოვიდური სინდრომის განვითარების რისკის ფაქტორი გახდეს. COVID-19-ი პირდაპირ და არაპირდაპირ გააღვიძებს ახდენს თვით ქრონიკულ დაავადებებზე და ართულებს მათ მართვასა და პრევენციას. ამ მხრივ აუცილებელია ოჯახის ექიმების მომზადება SARS-CoV-2-ით ინფიცირებული ქრონიკული დაავადებების მქონე პაციენტებში ინფექციის გართულებისა და პოსტ-კოვიდური სინდრომის განვითარების რისკი-ფაქტორების დროულად ამოცნობისა და მათი გავლენის პრევენციის მიზნით.

Introduction: COVID-19 can result in respiratory distress. For those with chronic disease, the impact has been particularly profound [1,2]. Heart disease, diabetes, cancer, chronic obstructive pulmonary disease, chronic kidney disease, and obesity are all conditions that increase the risk for severe illness from COVID-19 [3]. The impact of SARS-CoV-2, the virus that causes COVID-19, on people with or at risk for chronic disease cannot be overstated. COVID-19 has impeded chronic disease prevention and disrupted disease management [4].

Goals and Objectives: The study aimed to determine clinical and epidemiological characteristics of COVID-19 in patients with chronic diseases for timely and effective intervention and prevention of impact of SARS-CoV-2 infection on the management of chronic conditions.

Methods: Cross-sectional survey was conducted in two cities of the country - Tbilisi and Rustavi from November, 2020 till February 2021 among adult patients suffering with chronic diseases. 52 study subjects were selected non-randomly. The study inclusion criteria were a single symptom of respiratory infections and positive PCR test on SARS-CoV-2. Semi-structured questionnaire was developed and disseminated among the study subjects. Informed consent was obtained from patients. Descriptive statistics were applied to the results. Statistical significance was set up as $p \leq 0.05$.

Results and Discussion: Patients age ranged from 22 to 75, mean age was 51.2 ± 3.84 (95% CI from 47.2 to 54.8). Median composed - 45. The majority of the patients were females 34 (65.4%). Of 52 patients 21 presented more than two chronic diseases (Table 1).

Table 1. Characteristics of the COVID-19 patients

Characteristics	Abs.#	%
Sex		
Female	34	61.5
Male	18	39.5
Age		
Mean age	51.2	
Median age	45	
Chronic diseases ≥ 2	21	40.4

Chronic conditions were presented with a broad variety of systemic diseases such as respiratory, cardiovascular, endocrine, circulatory and malignant. Major Chronic diseases were: Hypertension, Diabetes, Asthma, Goiter, Arthritis, Migraine, Heart disease, Circulatory diseases, Cancer. The leading symptoms of COVID-19 infection were dyspnea and cough (Fig.1). Systemic symptoms were presented by dyspnea, fever, and pain. The later with all types prevailed among the other symptoms.

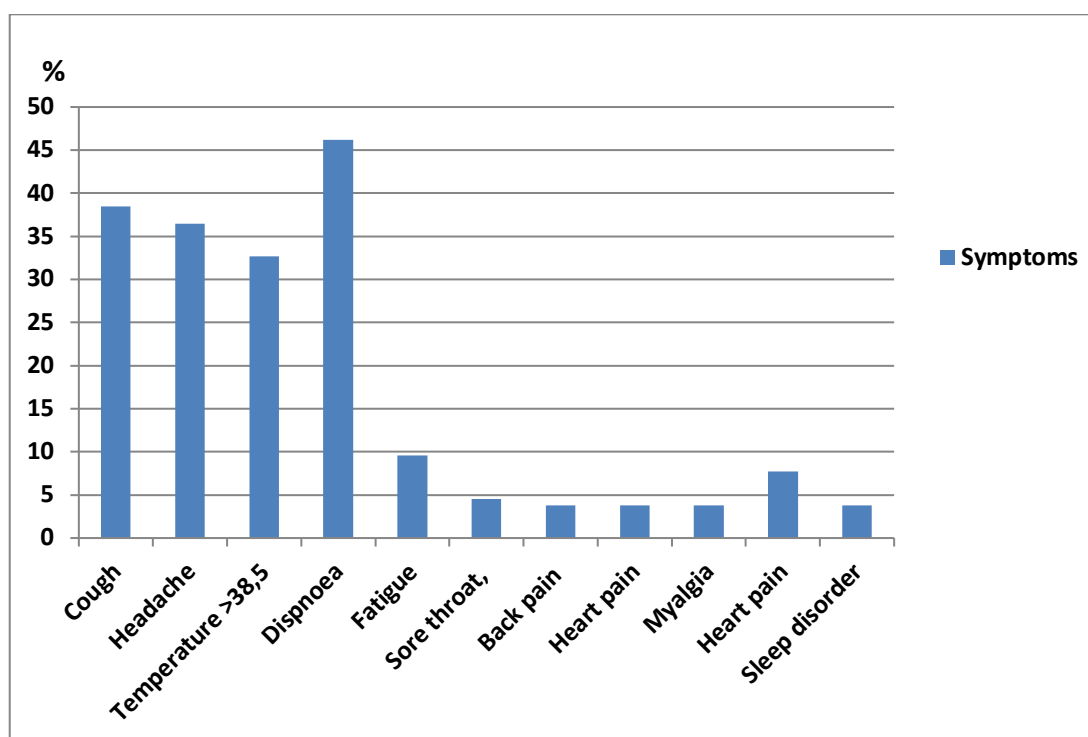


Fig. 1 COVID-19 Symptoms in patients

Over a half of the COVID-19 patients (55.8%) complained of acute pain such as sore throat, back pain, headache, heart pain and muscle pain (Fig.2). Over 1/3 of patients suffered with headache. Although headache was not a dominant symptom and rarely accompanied with high temperature, it was severe (between 7-9 scores, measured by numeric pain scale) and long-lasting in contrast to the other symptoms [5].

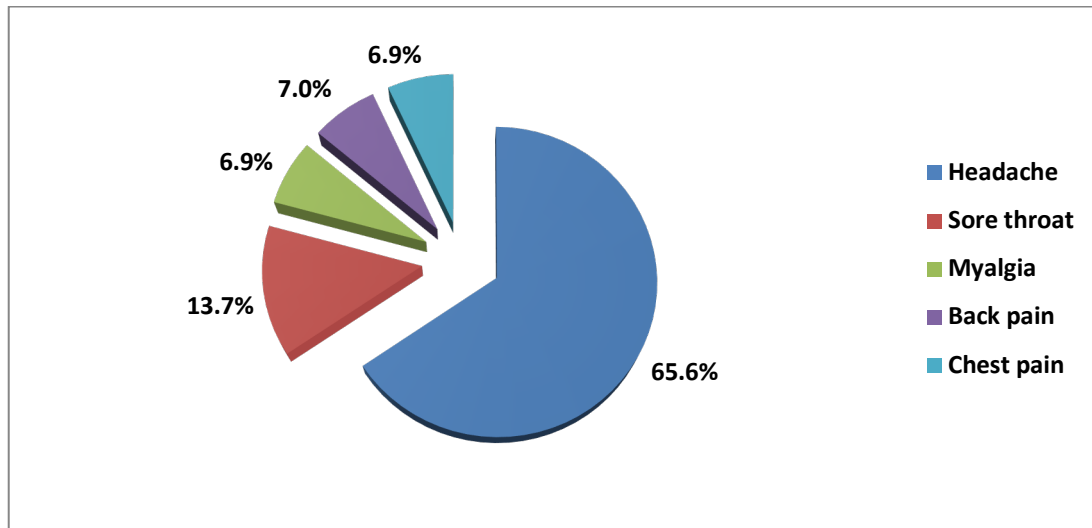


Fig.2 Acute pain frequency by sites in COVID-19 patients with chronic diseases

COVID-19 patients suffering with headache were of relatively younger ages (24-35 years old) than those with the other types of pain. The majority of the cases were of mild or moderate severity. 14 patients (26.9%) developed bronchopneumonia, of which 12 patients suffered with more than two chronic comorbidities, which is most likely to be a risk factor for the development of long Covid-19 or Post-Covid-19 syndrome. On May 13, 2021 CDC, USA updated the list of underlying medical conditions that put adults of any age at high risk for severe illness from the virus that causes COVID-19. Among these conditions are Asthma, blood disorders, cancer, cerebrovascular disease, chronic obstructive pulmonary disease (COPD), chronic kidney disease (CKD), cystic fibrosis, diabetes, Down syndrome, heart disease, hypertension, immunosuppressant medications, use of corticosteroids or other immunosuppressive medications, solid organ or blood stem cell transplantation, neurological conditions, and obesity [6]. More over elderly people and those with pre-existing chronic conditions including cardiovascular disease, cancer, hypertension, respiratory conditions and diabetes appear to be at a higher risk of developing complications and are at high risk of death [7]. The listed chronic conditions were found to be common for our study subjects (Table 1) posing them at higher risk for exacerbation of the existing diseases and progression to serious outcomes of COVID-19. It should be mentioned, that the dominated chronic conditions were hypertension and diabetes. Most of our study participants were at home care under the online supervision of family doctors. Due to the complications, 15 (28.8%) patients were hospitalized in COVID-19 clinics. Almost every second case was characterized with long-lasting recovery. Our study results are consistent with the Indian study indicating that the most prevalent chronic conditions were diabetes (71%) and hypertension (73%). Of the 29% participants diagnosed or treated for COVID-19, 12% were hospitalized for an average of 9 days (8). Based on our study outcome we agree and share the similar results described by other authors (9-11).

Conclusions: 1. Covid-19 is characterized with a broad variety of clinical symptoms in patients with chronic conditions; 2. Age, gender and various comorbidities are likely to be associated with severe forms of COVID-19 manifestation, complication and hospitalization; 3. Understanding risk factors for symptom deterioration and complication among patients with chronic patients, infected with SARS-COV-2 virus is a key for reducing late hospitalization, long-lasting recovery and progression to Post-Covid-19 syndrome. In this regard there is a serious concern regarding studying of the role of cultural and social factors and generalizability of the evidence on risk factors in COVID-19 patients, suffering with chronic conditions.

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ИНФЕКЦИЯ SARS-COV-2 У БОЛЬНЫХ ХРОНИЧЕСКИМИ ЗАБОЛЕВАНИЯМИ

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РЕЗЮМЕ

Инфекция SARS-CoV-2 (COVID-19) характеризуется множеством клинических симптомов. Проявление и течение заболевания зависят от многих факторов, включая возраст, пол пациента и сопутствующие заболевания. Исследования показали, что COVID-19 у пациентов с хроническими заболеваниями в основном проявляется системными симптомами, такими как лихорадка, слабость и боль. Из разных видов острой боли наиболее распространенным симптомом является головная боль, она отличается длительным течением и выраженностью. Хронические пациенты часто испытывают различные осложнения, включая бронхопневмонию, которая у 27% пациентов развилась и

стала одной из основных причин госпитализации. Такие осложнения впоследствии могут стать фактором риска развития длительного COVID-19 или постковидного синдрома. COVID-19 прямо или косвенно влияет на сами хронические заболевания и затрудняет их лечение и профилактику. В связи с этим необходимо проводить обучение семейных врачей у пациентов с хроническими заболеваниями, инфицированными SARS-CoV-2, для своевременного выявления факторов риска осложнения инфекции и развития постковидного синдрома и предотвращения их воздействия.

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SUMMARY

SARS-CoV-2 infection (COVID-19) is characterized by a variety of clinical symptoms. The manifestation and course of the disease depend on many factors, including the patient's age, sex, and comorbidities. Research has shown that COVID-19 in patients with chronic diseases is mainly manifested by systemic symptoms such as fever, weakness, and pain. From different types of acute pain, headache is the most prevalent symptom, it is characterized by a long course and severity. Chronic patients often experience a variety of complications, including bronchopneumonia, which, in 27% of patients, developed and became one of the leading causes of hospitalization. Such complications may later become a risk factor for the development of prolonged COVID-19, or Post-Covid Syndrome. COVID-19 directly and indirectly affects chronic diseases themselves and complicates their management and prevention. In this regard, it is necessary to train family physicians in patients with chronic diseases infected with SARS-CoV-2 in order to timely identify risk factors for the complication of infection and the development of Post-Covid syndrome and to prevent their impact.

