

## **Clinical characteristics, risk factors and outcome of the mild and moderate COVID-19 infection**

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**The aim of this study was to present our personal experience on the basis of the results of the treatment of patients with COVID-19 in our clinic. Clinical results of COVID-19 patients treated and observed by authors at the AMU Surgical Hospital were investigated. Patients' demographics, the severity of infection, co-morbidities, clinical signs, viral examination, lung X-ray and CT, complications, treatments and their results were analyzed. Diagnosis and treatment of COVID-19 were carried out under the recommendations of TABIB and WHO. Antiviral Arbidol (Umifenovir) and Vitamin C were mainly used for the treatment of patients of the mild group (stable vital functions, normal saturation, no pneumonia). Arbidol, vitamin C, inhalation, prone position and antibiotics were used in the middle group (with symptoms of pneumonia, and not need oxygen therapy). Treatment was carried out for 11-14 days. Clinically improved patients with positive dynamics on X-ray and negative results on repeated PCR examinations were discharged from the hospital and sent for the supervision of an outpatient doctor. A total of 77 patients were under our supervision, of which 58 had mild and 19 had moderate COVID-19 infection. Of these patients, 57 were women and 20 were men, with an average age of 47.5 (18-84). Patients over 50 years of age accounted for 45.4%, and over 60 years of age for 15.5%. The average age was 45.6 % among mild patients and 53.8% among the moderate patients. The proportion of men in the moderate group increased in comparison with the mild group (from 19% to 47.4%). Concomitant diseases were found in 34 (44.2%) patients, asthma, pregnancy, epilepsy, viral hepatitis, cirrhosis, coronary heart disease, coronary stent, psychiatric illness, chronic kidney failure, bed sickness were observed besides smoking (11.7%), hypertension (9.1%) and diabetes (6.5%). In the moderate group, concomitant diseases were observed more in comparison with the mild group (39.7% and 57.9%). The most common clinical presentations were loss of smell and taste (67.5%) which were followed by cough (57.1%), fever (42.8%), shortness of breath and difficulty swallowing (24.6%). Mortality was not observed, complications were observed in 5 patients (6.5%), and all of these patients had concomitant diseases. Analysis of patients with mild and moderate COVID-19 infection allows us to come to the following primary conclusions: weakness, loss of smell and taste, and cough are the most common presenting symptoms; age over 60 years, age, diabetes, hypertension, smoking and chronic liver disease are aggravating risk factors; inhalation and prone position seem to be useful in moderate patients.**

**Keywords:** *Covid 19, symptoms, demographics, concomitant diseases, treatment, prone position*

### **INTRODUCTION**

The COVID-19 infection outbreak in China in December 2019 and rapidly spreading worldwide caused more than 60 million infections and 1,200 000 deaths of people. During this period, more than

40,000 infections and 1200 deaths were registered in our country. It should be noted that about 250 of 3000 clinical trials are registered regarding COVID-19 in the world have been completed. Unfortunately, these studies sometimes produce conflicting results (Pundi et al., 2020). Therefore, there

is a need to continue research, including the study of regional features of the disease.

The aim of the study was to present our personal experience regarding the results of mild and moderate COVID-19 patients treated in our hospital.

## MATERIALS AND METHODS

Results of the patients with diagnosis of COVID-19 who followed by authors during April-May 2020 at the Azerbaijan Medical University Surgery Hospital were analyzed. Demographics (age, sex), severity of infection, comorbidity, symptoms, viral examination, lung X-ray and CT, complications, treatments and outcomes were analyzed.

The diagnosis of COVID-19 was confirmed according to WHO recommendations, and the patients have been hospitalized if they had positive PCR test for COVID-19.

The treatment approach was selected according to severity and was based on WHO and TABIB 's protocols (Table 1). The management of mild patients was consist of in-hospital follow-up, antiviral, vitamin and symptomatic treatments. Moderate patients were also monitored in the ward, and in addition to antiviral, vitamin, and symptomatic treatments the inhalations, prone position and antibiotics (azithromycin, fluoroquinolones, cefalosporins, ampicillin) were used to them. Severe and critical patients were treated in the intensive care unit.

Patients whose condition worsened during treatment were transferred to the intensive care unit.

The treatment was carried out within 12-14 days. Clinically improved patients with positive dynamics on X-ray and negative results on repeated PCR examinations were discharged from hospital and sent for supervision of an outpatient doctor.

**Table 1.** Severity of COVID-19 infection and treatments.

Severity	Explanation	Treatment
Mild	No or weak signs of systemic inflammation No clinical signs of pneumonia	Arbidol (Umifenovir) 200 mg 3 times a day Infusion -Ringer 500 ml Vitamin C 50 mg Symptomatic
Moderate	Symptoms of systemic inflammation. Clinical and imaging sings pneumonia No need for continouse oxygen therapy Saturation at rest and in room air $\geq 93\%$	Arbidol (Umifenovir) 200 mg, 3 times Infusion -Ringer 500 ml Vitamin C 50 mg Symptomatic Antibiotics Inhalation Prone position
Severe	Signs of systemic inflammation Signs of pneumonia Saturation is provided by non-invasive oxygen therapy (nasal warm oxygen flow or mask)	Arbidol Antibiotics Non-invasive oxygen therapy (nasal oxygen, oxygen mask) Inhalation Prone position
Critical	Organ failure Need for invasive oxygen therapy (mechanical ventilation, ECMO)	Supportive treatments Invasive Oxygen Therapy (Mechanical Ventilation, ECMO) Antibiotics Steroids Anticoagulant

**Table 2.** Characteristics of the patients.

Index	Total		Mild		Moderate	
	n	%	n	%	n	%
Total number of patients	77	100.0	58	75.3	19	24.6
Average age	47.5 (18-84)		45.6		53.8	
18-39	20	26.0	16	27.6	4	21.1
40-49	22	28.6	19	32.8	3	15.8
50-59	23	29.9	17	29.3	6	31.6
60-64	8	10.4	5	8.6	3	15.8
65 and over	4	5.2	1	1.7	3	15.8
Male	20	26.0	11	19.0	9	47.4
Female	57	74.0	47	81.0	10	52.6
Cases						
Medical institutions	41	53.2	35	60.3	6	31.6
Home	20	26.0	13	22.4	7	36.8
Workplace	7	9.1	5	8.6	2	10.5
Public place	5	6.5	2	3.4	3	15.8
Coming from abroad	4	5.2	4	6.9	0	0.0
Concomitant diseases	34	44.2	23	39.7	11	57.9
No	43	55.8	35	60.3	8	42.1
Asthma	1	1.3	0	0.0	1	5.3
Diabetes	5	6.5	5	8.6	0	0.0
Epilepsy	1	1.3	1	1.7	0	0.0
Pregnancy	3	3.9	2	3.4	1	5.3
HBV+HCV	1	1.3	0	0.0	1	5.3
Hypertension	7	9.1	3	5.2	4	21.1
Pneumonia	1	1.3	0	0.0	1	5.3
Smoking	9	11.7	3	5.2	6	31.6
Coronary stend	1	1.3	1	1.7	0	0.0
Ischemic heart disease	1	1.3	0	0.0	1	5.3
Chronic renal failure	1	1.3	1	1.7	0	0.0
Cirrhosis	1	1.3	0	0.0	1	5.3
Psychiatric	1	1.3	1	1.7	0	0
Symptoms						
Weakness, loss of smell and taste	32	41.6	32	55.2	0	0.0
Cough	5	6.5	5	8.6	0	0.0
Cough + loss of smell and taste	20	26.0	20	34.5	0	0.0
Cough and shortness of breath	19	24.7	0	0.0	19	100.0
No complaints	1	1.3	1	1.7	0	0.0
Normal fever	44	57.1	41	70.7	3	15.8
High fever	33	42.9	19	32.8	14	73.7
Signs of pneumonia on X-ray or CT	76	98.7		0.0	19	100.0
Complications	5	6.5	3	5.2	2	10.5
Liver failure	1	1.3	0	0.0	1	5.3
Respiratory failure	3	3.9	2	3.4	1	5.3
Premature delivery	1	1.3	1	1.7	0	0.0
Standard treatment	56	72.7	56	96.6	0	0.0
Standard + inhalation	19	24.7	0	0.0	19	100.0
Prone position	18	23.3	0	0	18	94.7
Supportive treatment	2	2.6	0	0.0	2	10.5

## RESULTS

The results of total of 77 patients with mild to moderate severity are given in Table 2. There were 57 women and 20 men, an average age was 47.5.

The oldest age was -84, the youngest age -18. Patients over 50 years old were 45.4%, and over 60 years old were 15.5%. The average age among the mild severity patients was -45.6, and moderate ones was 53.8 years.

From a sex point of view, women predominate in the general (74% women) and mild (81%) groups, but the proportion of men increases in the moderate group in comparison with the mild group (from 19% to 47.4%).

Patients get infection at medical institution, home, workplace, public place and foreign country. Most of patients infected in medical institutions (53.2%) and more than half of those were mild severity (60.3%).

Comorbidity were found in 34 patients (44.2%), including hypertension, diabetes, smoking, asthma, pregnancy, epilepsy, viral hepatitis, cirrhosis, coronary heart disease, benign psychiatric illness and chronic kidney failure. Smoking (11.7%), hypertension (9.1%) and diabetes (6.5%) were most common concomitant diseases. In comparison with mild group total comorbidity (39.7% vs 57.9%), smoking (5.2% vs 31.2%), and hypertension (5.2% vs 21.1%) were more common in moderate group. Three patients had pregnancy, two of them were mild and one of was moderate severity. Two of these pregnant women recovered, and premature delivery was in another. Both patients with chronic liver disease had moderate pneumonia, their condition worsened during treatment and were transferred to the intensive care unit.

Weakness and decreased or altered sense of smell and taste (67.5%) was most common presenting symptoms, followed by cough (57.1%), fever (42.8%), shortness of breath and difficulty swallowing (24.6%). Transient fever up to 38 C were noted in mild severity, but it was more than 38 C and lasted for several days in moderate severity patients.

Mortality was not observed, complications were observed in 5 patients (6.5%), and all of these patients had concomitant diseases. Respiratory failure was seen in 3 patients, one of them had been asthma, the second one had been hypertension and diabetes, and the third had been HBV + HCV and drug abuse. A patient in the early weeks of pregnancy had been premature delivery. In one patients with cirrhosis an acute decompensation was developed, which was treated with appropriate management.

## DISCUSSION

Analysis of a series of patients with mild and moderate COVID-19 infection allows us to draw the following preliminary conclusions: weakness, loss of smell and taste and cough are the most common symptoms; age of 60 and more, concomitant diseases, diabetes, hypertension, smoking and chronic liver disease are risk factors that aggravate the disease; inhalation and prone position seem to be beneficial for moderate patients.

Other studies also have reported loss of taste and smell, cough, fever, and shortness of breath as a most common presenting symptoms in COVID-19 infection (Wiersinga et al., 2020; Xie et al., 2020).

Although most studies have shown age, diabetes and hypertension, lung disease, and smoking as risk factors for aggravating COVID-19 disease, there are no consensus on the role of chronic liver disease (Wiersinga et al., 2020; Xie et al., 2020; Boettler et al., 2020) and extensive researches are needed. Antivirals, especially arbidol and antibiotic therapy, have been reported no benefit in mild to moderate patients (Wiersinga et al., 2020). Although few studies have shown that inhalation and prone position beneficial (Guérin et al., 2013).

We should be noted that there are several limitations of this study. The first is the relatively small number of patients. Second one, there is no comparison group that is why it is difficult to determine effectiveness the treatments.

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### **Yüngül və orta dərəcəli COVID-19 infeksiyasının klinik xüsusiyyətləri, risk faktorları və nəticələri**

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Tədqiqatın məqsədi klinikamızda müalicə alan COVID-19 xəstələrinin müalicə nəticələri ilə əlaqədar şəxsi təcrübəmizi təqdim etməkdir. ATU klinikasında müəliflərin nəzarəti altına olan xəstələrin əldə olan məlumatları araşdırıldı. Xəstələrin demografik göstəriciləri, yoluxduğu şərait, yanaşı xəstəlikləri, klinik əlamətləri, viral müayinə, ağciyər rentgeni və kompyuter tomoqrafiyası ağırlaşmalar, aldığı müalicələr və nəticələri təhlil edildi. COVID-19 diaqnostikası və müalicəsi Ümumdünya Səhiyyə Təşkilatı və Tibbi Ərazi Bölmələrini İdarəetmə Birliyinin tövsiyələrinə əsasən aparılmışdır. Yüngül qrupda (həyatı funksiyaları stabil, saturasiyası normal, pnevmoniyası olmayan) əsas müalicə kimi antiviral Arbidol (Umifenovir) və Vitamin C verilmişdir. Orta qrupda (pnevmoniya əlamətləri olan, orqan yetməzliyi və oksigenoterapiyaya ehtiyac olmayan) Arbidol, vitamin C və simptomatik müalicələrə əlavə olaraq inhalyasiya, üzüaşağı vəziyyət və antibiotiklər verilmişdir. Müalicə 11-14 gün ərzində aparılmış, klinik olaraq düzələn, rentgendə müsbət dinamika və təkrari PCR müayinələrində neqativ nəticə gələnlər ambulator həkim nəzarətində evə yazılmışdır. Nəzarətimiz altında toplam 77 xəstə olmuş, bunlardan 58-i yüngül, 19-u isə orta dərəcəli COVID-19 xəstələri olmuşdur. Xəstələrin 57-si qadın, 20-si kişi olmuş, ortalma yaş 47.5 (18-84) təşkil etmişdir. 50 yaşdan yuxarı xəstələr 45.4%, 60 yaşdan yuxarı isə 15.5 % təşkil etmişdir. Yüngül dərəcəlilər arasında ortalama yaş-45,6, orta dərəcəlilər arasında isə 53.8 olmuşdur. Yüngül qrupla müqayisədə orta qrupda kişilərin nisbəti artmışdır (19%-dən 47.4%). Yanaşı xəstəliklər 34 (44.2%) xəstədə rastlanmış, siqaret (11.7%), hipertoniya (9.1%) və diabetlə (6.5%) yanaşı astma, hamiləlik, epilepsiya, viral hepatit, sirroz, koronar xəstəlik, stend, psixatrik xəstəlik, xroniki böyrək yetməzliyi, yataq xəstəliyi müşahidə edilmişdir. Yüngül qrupla müqayisədə orta qrupda yanaşı xəstəliklər (39.7% və 57.9%) daha çox rast gəlinmişdir. Klinik əlamətlər arasında ən çox halsızlıq və qoxu-dad hissiyyətinin dəyişməsi (67.5%) rast gəlinmişdir, bunu öksürək (57.1%), yüksək hərarət (42.8%), nəfəs darlığı və udqunma çətinliyi (24.6%) izləmişdir. Letallıq rastlanmamışdır, ağırlaşma 5 xəstədə (6.5%) müşahidə edilmişdir və bu xəstələrin hamısında yanaşı xəstəliklər olmuşdur. Yüngül və orta dərəcəli COVID-19 infeksiyası olan xəstə seriyasının təhlili aşağıdakı ilkin nəticələrə gəlməyə imkan verir: halsızlıq, qoxu-dad dəyişikliyi və öksürək ən çox rast gəlinən simptomlardır; 60-dan yuxarı yaş, yanaşı xəstəliklər, diabet, hipertoniya, siqaret və xroniki qaraciyər xəstəlikləri ağırlaşdırıcı risk amilləridir, orta dərəcəli xəstələrdə inhalyasiya və üzü aşağı yatızdırma müalicələri faydalı görünür

**Açar sözlər:** Covid 19, simptomlar, demografik göstəricilər, yanaşı gedən xəstəliklər, müalicə

## Клинические характеристики, факторы риска и исходы легкой и умеренной инфекции COVID-19

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В этом исследовании мы хотели представить наш личный опыт, приобретенный на основе результатов лечения пациентов COVID-19 в нашей клинике. В клинике АМУ были изучены данные, полученные от пациентов, находившихся под наблюдением авторов. Были проанализированы демография пациентов, условия инфицирования, сопутствующие заболевания, клинические признаки, вирусные обследования, рентгеноскопия легких и компьютерная томография, осложнения, методы лечения и их результаты. Диагностика и лечение COVID-19 проводились в соответствии с рекомендациями ТАВІВ и ВОЗ. Антивирусные Arbidol (Umifenovir) и витамин С были применены в качестве основного лечения пациентов легкой группы (стабильные жизненные функции, нормальное насыщение, без симптомов пневмонии). Арбидол, витамин С, ингаляция, положение «лицом вниз» и антибиотики прописывались пациентам средней группы (с симптомами пневмонии, кислородная терапия не требовалась). Лечение проводилось в течение 11-14 дней. При исчезновении симптомов, положительной радиологической динамике, отрицательных результатах многократных ПЦР-обследований, больные были выписаны домой, где находились под наблюдением амбулаторного врача. 77 пациентов находились под нашим наблюдением, из них 58 больных были легкой, а 19 - средней степени тяжести. Среди пациентов 57 женщин и 20 мужчин, средний возраст которых составлял 47,5 лет (18-84 года). На долю пациентов в возрасте старше 50 лет приходилось 45,4%, а в возрасте старше 60 лет - 15,5%. Средний возраст составлял 45,6 для пациентов легкой и 53,8 для пациентов средней степени тяжести. Доля мужчин в средней группе увеличилась по сравнению с легкой группой (19% до 47,4%). Сопутствующие заболевания были обнаружены у 34 пациентов (44,2%), помимо курения (11,7%), гипертонии (9,1%) и диабета (6,5%), наблюдались астма, беременность, эпилепсия, вирусный гепатит, цирроз, сердечно-сосудистые заболевания, стенокардия, психические заболевания, хроническая почечная недостаточность, пролежни. В средней группе сопутствующие заболевания наблюдались в большей степени, чем в легкой группе (39,7% и 57,9%). Среди клинических признаков наиболее распространенными были усталость и потеря запаха и вкуса (67,5%), за ними следовали кашель (57,1%), лихорадка (42,8%), одышка и трудности с глотанием (24,6%). Смертность не наблюдалась, осложнения наблюдались у 5 пациентов (6,5%) и все эти пациенты имели сопутствующие заболевания. Анализ 9 пациентов с COVID-19 легкой и средней тяжести позволяет сделать следующие основные выводы: наиболее распространенными симптомами являются слабость, потеря запаха и вкуса, кашель; возраст (более 60 лет), диабет, гипертония, курение и хронические заболевания печени - усугубляющие факторы; ингаляция и положение «лицом вниз» полезны для больных средней тяжести.

**Ключевые слова:** Covid 19, симптомы, демографические показатели, сопутствующие заболевания, лечение