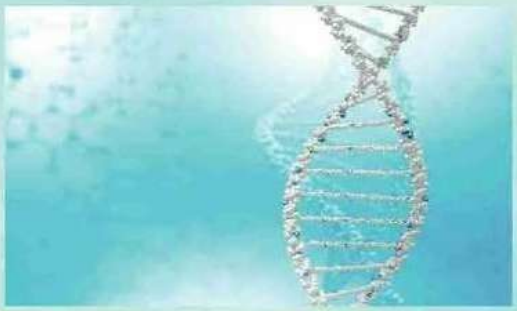
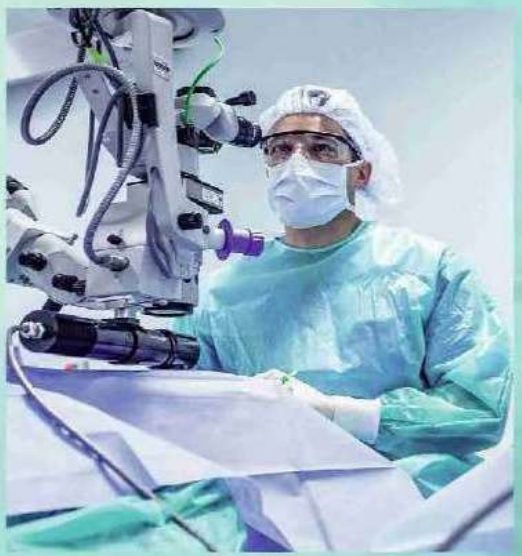
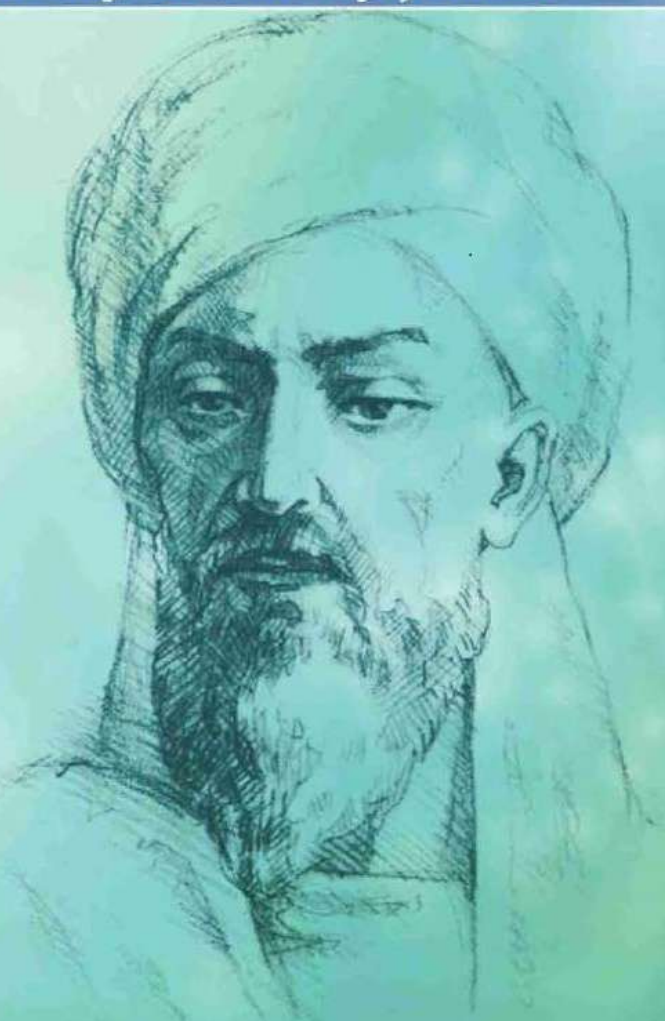
New Day in Medicine
Новый День в Медицине
NDM

TIBBIYOTDA YANGI KUN

Ilmiy referativ, marifiy-ma'naviy jurnal







AVICENNA-MED.UZ

ISSN 2181-712X.
EiSSN 2181-2187

9 (59) 2023

Сопредседатели редакционной коллегии:

Ш. Ж. ТЕШАЕВ,
А. Ш. РЕВИШВИЛИ

Ред. коллегия:

М.И. АБДУЛЛАЕВ
А.А. АБДУМАЖИДОВ
А.Ш. АБДУМАЖИДОВ
Р.Б. АБДУЛЛАЕВ
Л.М. АБДУЛЛАЕВА
М.М. АКБАРОВ
Х.А. АКИЛОВ
М.М. АЛИЕВ
С.Ж. АМИНОВ
Ш.Э. АМОНОВ
Ш.М. АХМЕДОВ
Ю.М. АХМЕДОВ
Т.А. АСКАРОВ
М.А. АРТИКОВА
Ж.Б. БЕКНАЗАРОВ (главный редактор)
Е.А. БЕРДИЕВ
Б.Т. БУЗРУКОВ
Р.К. ДАДАБАЕВА
М.Н. ДАМИНОВА
К.А. ДЕХКОНОВ
Э.С. ДЖУМАБАЕВ
Н.Н. ЗОЛОТОВА
А.Ш. ИНОЯТОВ
С. ИНДАМИНОВ
А.И. ИСКАНДАРОВ
Э.Э. КОБИЛОВ
Д.М. МУСАЕВА
Т.С. МУСАЕВ
Ф.Г. НАЗИРОВ
Н.А. НУРАЛИЕВА
Б.Т. РАХИМОВ
Х.А. РАСУЛОВ
Ш.И. РУЗИЕВ
С.А. РУЗИБОЕВ
С.А.ГАФФОРОВ
С.Т. ШАТМАНОВ (Кыргызстан)
Ж.Б. САТТАРОВ
Б.Б. САФОЕВ (отв. редактор)
И.А. САТИВАЛДИЕВА
Д.И. ТУКСАНОВА
М.М. ТАДЖИЕВ
А.Ж. ХАМРАЕВ
А.М. ШАМСИЕВ
А.К. ШАДМАНОВ
Н.Ж. ЭРМАТОВ
Б.Б. ЕРГАШЕВ
Н.Ш. ЕРГАШЕВ
И.Р. ЮЛДАШЕВ
Д.Х.ЮЛДАШЕВА
А.С. ЮСУПОВ
М.Ш. ХАКИМОВ
Д.О. ИВАНОВ (Россия)
К.А. ЕГЕЗАРЯН (Россия)
DONG JINCHENG (Китай)
КУЗАКОВ В.Е. (Россия)
Я. МЕЙЕРНИК (Словакия)
В.А. МИТИШ (Россия)
В И. ПРИМАКОВ (Беларусь)
О.В. ПЕШИКОВ (Россия)
А.А. ПОТАПОВ (Россия)
А.А. ТЕПЛОВ (Россия)
Т.Ш. ШАРМАНОВ (Казахстан)
А.А. ЩЕГОЛОВ (Россия)
Prof. Dr. KURBANHAN MUSLUMOV(Azerbaijan)
Prof. Dr. DENIZ UYAK (Germany)

www.bsmi.uz
https://newdaymedicine.com
E: ndmuz@mail.ru
Тел: +99890 8061882

ТИББИЁТДА ЯНГИ КУН

НОВЫЙ ДЕНЬ В МЕДИЦИНЕ

NEW DAY IN MEDICINE

Илмий-рефератив, маънавий-маърифий журнал
Научно-реферативный,
духовно-просветительский журнал

УЧРЕДИТЕЛИ:

БУХАРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ ИНСТИТУТ
ООО «ТИББИЁТДА ЯНГИ КУН»

Национальный медицинский исследовательский центр хирургии имени А.В. Вишневского является генеральным научно-практическим консультантом редакции

Журнал был включен в список журнальных изданий, рецензируемых Высшей Аттестационной Комиссией Республики Узбекистан (Протокол № 201/03 от 30.12.2013 г.)

РЕДАКЦИОННЫЙ СОВЕТ:

М.М. АБДУРАХМАНОВ (Бухара)
Г.Ж. ЖАРЫЛКАСЫНОВА (Бухара)
А.Ш. ИНОЯТОВ (Ташкент)
Г.А. ИХТИЁРОВА (Бухара)
Ш.И. КАРИМОВ (Ташкент)
У.К. КАЮМОВ (Тошкент)
Ш.И. НАВРУЗОВА (Бухара)
А.А. НОСИРОВ (Ташкент)
А.Р. ОБЛОКУЛОВ (Бухара)
Б.Т. ОДИЛОВА (Ташкент)
Ш.Т. УРАКОВ (Бухара)

9 (59)

2023

сентябрь

Received: 20.08.2023, Accepted: 05.09.2023, Published: 15.09.2023.

UDC 578.834.1:616-08

COMPARATIVE CHARACTERISTICS OF LABORATORY DATA IN PATIENTS WITH COVID-19

Ergasheva Munisa Yakubovna, Email: munisaergasheva@gmail.com
Matyakubova Feruza Egamovna, Email: feruzamatyakubova23@gmail.com
Rabbimova Nodira Tashtemirovna, https://orcid.org/0000-0003-4748-8149
Subkhonova Sarvinoz Komilovna, Email: komilovnasarvinoz@gmail.com

[1]Samarkand State Medical University, Uzbekistan, Samarkand, st. A. Timura, 18, +998 (66) 233 08 41 e-mail: samgmi@mail.ru

✓ ***Resume***

The purpose of the study was conducting a comparative analysis of laboratory data of patients with COVID -19. Patients in the study group showed higher levels of leukocytes and percentage of neutrophils, as well as lower levels of total proteins, lymphocytes, eosinophils and monocytes compared to the control group from clinical recovery to the recovery stage after discharge. Further analysis showed that decreases in lymphocytes, total protein, and increases in neutrophils, CRP, PCT, D-dimer, and ESR were more common in severe than moderate cases of COVID-19 during hospitalization. Leukocytosis, neutrophyllosis, lymphocytopenia, D -DIMER, PCT AND CRP levels, which were significantly associated with COVID-19 severity, were prognostic biomarkers for predicting disease severity.

Key words: COVID-19, SARS-Cov-2, pneumonia, respiratory failure, lymphocytes, neutrophils, recovery, total protein, CRP, ESR.

СРАВНИТЕЛЬНАЯ ХАРАКТЕРИСТИКА ЛАБОРАТОРНЫХ ДАННЫХ У БОЛЬНЫХ С COVID-19

Эргашева Муниса Якубовна, Email: munisaergasheva@gmail.com
Матякубова Феруза Эгамовна, Email: feruzamatyakubova23@gmail.com
Раббимова Нодира Таштемировна, https://orcid.org/0000-0003-4748-8149
Субхонова Сарвиноз, Email: komilovnasarvinoz@gmail.com

Самаркандский государственный медицинский университет, Узбекистан, г.Самарканд, ул. А.Тимура, 18, +998 (66) 233 08 41, E-mail: samgmi@mail.ru

✓ ***Резюме***

Целью исследования явилось провести сравнительный анализ лабораторных данных больных с COVID-19. У пациентов основной группы были обнаружены более высокий уровень лейкоцитов и процентное содержание нейтрофилов, а также низкие уровни общих белков, лимфоцитов, эозинофилов и моноцитов по сравнению с контрольной группой от клинического выздоровления до стадии восстановления после выписки. Дальнейший анализ показал, что снижение лимфоцитов, общего белка, а также повышение нейтрофилов, СРБ, ПКТ, D-димер и СОЭ чаще встречались в тяжелых, чем в умеренных случаях COVID-19 во время госпитализации. Лейкоцитоз ,нейтрофиллез, лимфоцитопения, уровни D-димера, ПКТ и СРБ, которые были в значительной степени связаны с тяжестью COVID-19, были прогностическими биомаркерами для прогнозирования тяжести заболевания.

Ключевые слова: COVID-19, SARS-Cov-2, пневмония, дыхательная недостаточность, лимфоциты, нейтрофилы, выздоровление, общий белок, СРБ, СОЭ.

COVİD-19 BILAN OG`RIGAN BEMORLARDA QIYOSIY LABORATOR MA`LUMOTLARNI TAHLIL QILISH

Ergasheva Munisa Yakubovna, Email: munisaergasheva@gmail.com
Matyakubova Feruza Egamovna, Email: feruzamatyakubova23@gmail.com
Rabbimova Nodira Tashtemirovna, https://orcid.org/0000-0003-4748-8149
Subkhonova Sarvinoz Komilovna, Email: komilovnasarvinoz@gmail.com

Samarqand davlat tibbiyot universiteti, O‘zbekiston, Samarqand, ko‘ch. A. Timura, 18, +998 (66) 233 08 41 e-mail: samgmi@mail.ru

✓ ***Rezyume***

Maqsad: COVID-19 bilan kasallangan bemorlarda laborator ma'lumotlarini qiyosiy tahlil qilish.

Asosiy guruhdagi bemorlarda leykotsitlar va neytrofillar ulushi yuqori, shuningdek, umumiy oqsillar, limfotsitlar, eozinofillar va monotsitlar darajasi nazorat guruhiga nisbatan pastroq bo'lgan. Keyingi tahlillar shuni ko'rsatdiki, limfotsitlar, umumiy protein miqdorining pasayishi va neytrofillar, CRP, PCT, D-dimer va ESR ko'payishi kasalxonaga yotqizish paytida COVID-19ning o'rtacha holatlariga qaraganda og'irroq bo'lgan. COVID-19 og`ir darajada kechishi bilan sezilarli darajada bog'liq bo'lgan leykotsitoz, neytrofiloz, limfotsitopeniya, D-dimer, PCT va CRP darajalari kasallikning og`ir kechishini bashorat qilish uchun bashorat qiluvchi biomarkerlar hisoblanadi.

Kalit so'zlar: COVID-19, SARS-Cov-2, pnevmoniya, nafas etishmovchiligi, limfotsitlar, neytrofillar, tiklanish, umumiy oqsil, SRO, ECHT.

Relevance

The unexpectedness of the appearance and the ease with which new coronaviruses spread around the world, revealing vulnerabilities in the organization of medical care and leading to catastrophic consequences in the economy, require joint efforts of researchers from different countries to develop ways to predict the severe course of viral infections, create diagnostic tests, and preventive vaccines and drugs acting on key factors of disease progression [2]. Community-acquired pneumonia (CAP) is one of the most pressing problems of modern healthcare due to high morbidity and mortality. Currently, the pandemic of the new coronavirus infection COVID-19 once again forces us to turn to this topic, since the analysis of the issues of diagnosis, treatment of pneumonia and lung damage by the SARS-CoV-2 virus is extremely important [1]. In the fight against COVID-19 disease severity and patient mortality, prognostic factors must be identified as early as possible to provide better treatment strategies [3]. In a recent Chinese study on predicting the rates and pathogenesis of critical cases of COVID-19, they concluded that predictive factors for disease progression, including biochemical (eg, aspartate aminotransferase [AST] and alanine aminotransferase [ALT]), hematological (eg, white blood cells) white blood cell count and lymphocyte count), inflammatory (eg, C-reactive protein [CRP]), and coagulation biomarkers (eg, **D** -dimer) may improve clinical efficacy, delay progression of mild/moderate to severe/critical disease, and reduce mortality rates

The purpose of the study was to study these laboratory test results and provide a comparative analysis in patients with COVID -19.

Materials and methods

The material for the analysis was the case histories of 6 0 patients who were treated at the Samarkand Regional Infectious Diseases Clinical Hospital for 2021-2022, aged over 25 years, with a diagnosis of “Coronavirus infection (COVID -19, PCR-positive), in whom community-acquired pneumonia was confirmed clinically and radiologically. All patients were divided into two groups: the first (main) group consisted of 30 (50 %) patients who were diagnosed with COVID -19 infection, which occurred with pneumonia. The second (control) group consisted of 30 (50 %) patients with diagnosed COVID -19 infection without pneumonia.

Result and discussions

The average age of patients ranged from 26 to 73 years. An analysis of the age structure of patients showed that patients aged 26-40 years made up 5%, 41-50 years old - 5%, 51-60 years old - 45%, 61-

70 years old - 35% and 71 and above - 10%. There were 61.3% men, 38.7% women. From the epidemiological history, all patients were in contact with patients with COVID -19 infection. In the moderate form, the disease was manifested by an increase in body temperature to 38-38.5 ° C and weakness; almost all examined patients had aches (91.6%), headaches (86.7%), predominantly dry, prolonged cough (100%). In severe forms of the disease, patients experienced weakness, fever, body aches, cough, shortness of breath, and chest tightness - in 95% of patients. Table 1 presents comparative characteristics of laboratory parameters in patients of the first and second groups.

Table 1

Comparative characteristics of laboratory tests data from patients with covid-19 .

Indicator/group	Patients with COVID-19 without pneumonia , n=30	Patients with COVID-19 complicated by pneumonia, n=30	R
Total protein	62.6 ± 5.6	57.8 ± 6.4	p <0.018
Lymphocytes _	1.63 ± 0.67	1.00 ± 0.53	p <0.002
Monocytes (units /l)	0.46 ± 0.22	0.40±0.20	p <0.193
ESR (mm/hour)	27.7 ± 13.7	63.4 ± 34.3	p <0.007
Leukocytes (x 10 in 9th century)	2.89 ± 12.7	4.6 ± 15.7	p <0.001
Neutrophils	3.85 ± 1.46	5.47 ± 2.89	p < 0.014
CRP (mg/l)	5.3 ± 10.3	39.6 ± 56.9	p <0.003
Procalcitonin (ng/ml)	0	≥ 0.5	
D-dimer	158.7-268	151-351	p <0.603

*Note. P – significance of differences between the compared groups. * – p<0.01.*

As can be seen from the table, the level of total protein decreased to 62.6 ± 5.6 in patients with COVID-19 without pneumonia and to 57.8 ± 6.4 in patients with pneumonia. The ESR level in patients of the second group was significantly increased compared to the first group (1.8 times) .

Since, according to the literature, CRP is considered the most sensitive “reference” laboratory marker of systemic inflammation, tissue damage and infectious alteration , its concentration in the blood serum of patients with community-acquired pneumonia correlates with the severity of the disease. At the same time, a high initial level of the biomarker, its long-term persistence and increase in dynamics are associated with an unfavorable course of pneumonia.

In our study, in order to predict the severity of the disease, the level of CRP was determined in patients of the second group, which was increased by 2.9 times compared to patients of the first group. The level of lymphocytes was increased 1.1 times in patients of the second group compared to the first group.

One of the predictors of bacterial infection is the level of procalcitonin (PCT) in plasma. The prognostic value of a positive PCT test in hospitalized patients with community-acquired pneumonia was revealed. Plasma PCT concentration was determined by semiquantitative immunochromatographic method. Thus, 30 hospitalized patients with community-acquired pneumonia had a positive PCT test (≥ 0.5 ng/ml). Whereas in patients of the first group, procalcitonin (PCT) was not detected in the plasma.

COVID-19 is associated with increased blood clotting. Patients with COVID-19 often have elevated levels of D-dimer, a high concentration of which is a predictor of death. Experts from the International Society of Thrombosis and Hemostasis (ISTH) believe that an increase in D-dimer levels by 3-4 times in a patient with COVID-19 is an independent indication for hospitalization. According to our studies, the level of D-dimer in patients of the second group was increased by 0.6 times compared to patients in the first group.

The current study determined the correlation between laboratory data of most inflammatory markers and the severity of the disease. The main pathophysiology of COVID-19 infection in critically ill patients is related to the consequences of cytokine storm. The presence of a cytokine storm in

patients with reduced lymphocyte counts may indicate uncontrolled viral progression, as seen in severe cases. Above the activated immune response leads to a cytokine storm that is closely associated with lymphopenia, possibly due to increased apoptosis by proinflammatory cytokines, which requires further study

Conclusions

1. Hemogram parameters (leukocytosis, C-reactive protein level, leukocyte entropy index) are significant for predicting bacterial complications in pneumonia in patients with COVID -19.
2. Decreased lymphocyte and total protein counts and increased neutrophils were more common in severe cases than in moderate cases of COVID-19 during hospitalization.
3. High levels of the inflammatory markers CRP and ESR are associated with COVID-19 severity during hospitalization, confirming earlier findings. These results provide new insights to improve understanding of COVID-19 and improve therapy and care for patients affected by these types of pandemics in the future.

LIST OF REFERENCES:

1. Nikolaeva S.V. Clinical and laboratory characteristics of coronavirus infection in children / S.V. Nikolaeva, Z.A. Zvereva, E.V. Kanner, S.B. Yatsyshina, D.V. Usenko, A.V. Gorelov // Infectious diseases. 2018;16(1):35–39.*
2. Orzikulov A.O., Rustamova Sh.A., Karamatullaeva Z.E., Ibragimova E.F. COVID -19 kasalligida thromboembolic asoratlar rivozhlanishida D -dimer ahamyati // Biology va tibbiyot muammolari. 2021;6(132):240-246.
3. Rabbimova N.T. Samibaeva U.Kh. Subkhonova S.K. Baizhanov A.K. Features of the microflora of the respiratory tract in patients with COVID -19 infection against the background of pneumonia. // AVICENNA No. 88 2021. 38-40 b.

Entered 20.08.2023