



Imam Reza General Hospital Newsletter Tabriz University of Medical Sciences



Editorial

Masood Faghihdinevari

Founder and Director-In-Charge
Assistant Professor of Internal Medicine,
Division of Adult gastroenterology
Dean of Imam Reza General Hospital
**Healthcare Workers' Burnout
in the COVID-19 Crisis**



Burnout was first introduced to healthcare workers (HCWs) by Freudenberg in 1974. Currently, the COVID-19 pandemic, as a global public health crisis, has caused healthcare workers to be more exposed to physical and mental exhaustion. Problems such as pain of losing patients and colleagues, risk of infection for themselves and their family members, limited resources, longer shifts, interruptions in sleep hours and work-life balance status, job-related risks by exposure to COVID-19 have contributed to physical and mental fatigue, stress and anxiety, and burnout. Physicians and nurses are worried about their families, and fear of exposing their family members to infection make hesitation to go home. Front-line health care providers suffer from emotionally problems mainly due to the extra pressure of choosing between family responsibilities and their inner sense of duty toward patients. "Coronaphobia," is a non-medical term, has recently evolved to represent the psychological effect of this pandemic. This term has been defined as an extreme triggered reaction of fear of the virus. As a result, the reaction of fear leads to physiological, cognitive, and behavioral changes which cause a considerable amount of stress, safety-seeking behaviors, avoidance of presence in public places, and marked trouble in daily life functioning. A new survey from The Physician's Foundation found that:

- 57% of physicians have had feelings of anger, tearfulness or anxiety due to COVID-19.
- 46% have withdrawn or isolated.
- 34% have felt hopeless or without a purpose.
- 61% experienced feelings of burnout which has shown 40% growth from the year 2018.

Still, only 14% of physicians report seeking help for their mental health symptoms.

To our knowledge, at this time, there are only a few researches that give information about the impact of the COVID-19 pandemic on physician burnout. Front-line health care providers are exposed to more pressure and consequently psychological stress. Other studies conducted in the United States and Iran have also linked coronaphobia with depression, anxiety, and poor mental well-being. Therefore, it needs urgent actions to be taken to evaluate and promote mental well-being among health-care workers.

Hassan Soleimanpour

Editor-In-Chief's message
Professor of Intensive Care Medicine
Dean of Deputy
Education and Research



COVID-19 Published Articles: At a Glance

Reviewing of the published articles in the Scopus index shows that among the 3 million 137 thousand 364 published articles in 2020, 80 thousand and 344 of articles have been published in the COVID-19 area which is about 2.56% of the whole articles. Fortunately, Professors and researchers of our country have researched great in the field of COVID-19, and with the production of 1898 articles, they have been ranked 12th among the countries that have produced articles in this field. There are 159 countries all around the world that have published scientific articles in the area of Coronavirus research. Among this number, more than a thousand articles belong to 19 countries with the ranking of 12th which Iran is included, 52 countries published less than a thousand articles, and 88 countries have less than 100 articles in this area. The United States, with the highest number of research in the COVID-19 area records about 20,737 articles which are approximately 25 per cent of all research. It is my pleasure to announce that Imam Reza General Hospital, Tabriz, Iran as the main referral centre for COVID-19 patients have an important role during the pandemic period. Furthermore, this hospital has also been very active in researches in COVID-19 and medical professors and students have participated in the production of 131 articles in the field of COVID-19 which have been published in prestigious scientific journals. Among these 131 published articles, 37 are original articles, 55 are review articles and 39 are others. In this issue, based on research indicators, we will introduce 8 original articles, 2 review article and 3 other types of articles in which the author is

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Happy 1st Anniversary of
publishing of Bilingual Newsletter
of Imam Reza General
Hospital, Tabriz, Iran

**Happy New Year
Wishing a Corona-Free life
in 2022**



Prof. Ata Mahmoodpoor, Professor of Intensive Care Medicine, Department of Anesthesiology and Critical Care, with 5 original articles, 5 review articles and 19 editorial articles in the field of Covid-19, is the most participation in publishing the article among professors and students in the center. Deputy of Education and Research of the Imam Reza General Hospital, Tabriz, congratulates him and also to the Department of Anesthesiology and Critical Care on this valuable achievement.



Many thanks and appreciation from deputy of Education and Research, Imam Reza General Hospital, Tabriz, to Dr. Pourya Sadeghi, internship medical student, because of publishing a review article in the field of Covid-19 in the journal (TrAC) Trends in Analytical Chemistry with an impact factor of 12.296. Whishing him success and pride.

In this issue, we introduce the top articles of Covid-19 Imam Reza General Hospital, Tabriz, Iran

Co-Authors in original research articles and reviews published in the area of COVID-19 with IF>5 in Imam Reza General Hospital, Tabriz, Iran

- Original Research article by Dr. Farid Rashidi, Dr. Parisa Rezaeifar, Dr. Samira Matin and Dr. Ooria Tahamatan, Internal Medicine - Pulmonary Division, Dept. (JAMA - Journal of the American Medical Association, IF: 56.272) Page 2
- Review article by Hamed Valizadeh, Internal Medicine - Pulmonary Division Dept. (Journal of Cellular Physiology, IF: 6.384). Title: Vaccine development and therapeutic design for 2019-nCoV/SARS-CoV-2: Challenges and chances.
- Review article by Prof. Sakineh Haj Ebrahimi, Department of Urology. (Journal of European Urology Focus, IF: 5.996) Page 2

Corresponding and first authors of original research articles published in the area of COVID-19 with IF≥3 in Imam Reza General Hospital, Tabriz, Iran

- Dr. Haleh Mikaeili and Dr. Armin Sadeghi, Internal Medicine - Pulmonary Division Dept. (Journal of Cellular Physiology, IF: 6.384) Page 2
- Dr. Hamed Valizadeh, Internal Medicine - Pulmonary Division Dept. (INTERNATIONAL IMMUNOPHARMACOLOGY, IF: 4.932) Page 2
- Prof. Ata Mahmoodpoor, Anesthesiology and Critical Care Dept. (Journal of Molecular Immunology, IF: 4.407) Page 3
- Prof. Mohammad Reza Ardalan, Internal Medicine - Kidney Division and Prof. Khalil Ansarin Internal Medicine - Pulmonary Division, Dept. (BioImpacts, IF: 3.831) Page 3
- Prof. Hamid Tayyebi Khosroshahi and Dr. Jalal Etemadi, Internal Medicine - Kidney Division, Dept. (Journal of Immunological Investigations, IF: 3.657). Title: Prevalence of SARS-CoV-2 Specific Antibodies in Asymptomatic Hemodialysis Patients.
- Prof. Akbar Sharifi, Internal Medicine - Pulmonary Division, Dept. (INTERNATIONAL JOURNAL OF INFECTIOUS DISEASES, IF: 3.623) Page 3
- Prof. Hassan Soleimanpour and Dr. Hamidreza Morteza Bagi, Emergency Medicine Dept. (Journal of PLOS ONE, IF: 3.24) Page 3

Top review article published in the area of COVID-19 in Imam Reza General Hospital, Tabriz, Iran

- Dr. Pourya Sadeghi, Medical student of Tabriz University of Medical Sciences. (Trends Journal in Analytical Chemistry, IF: 12.296) Page 2

Corresponding and first authors of top three other articles published in the area of COVID-19 in Imam Reza General Hospital, Tabriz, Iran

- Prof. Alireza Khabazi, Internal Medicine-Rheumatology Division and Prof. Khalil Ansarin, Internal Medicine - Pulmonary Division, Dept. (BMJ journal, IF: 19.103) Page 3
- Dr. Aida Malek Mahdavi, Connective Tissue Research Centre and Prof. Alireza Khabazi, Internal Medicine-Rheumatology Division Dept. (BMJ journal IF: 19.10) Page 4
- Prof. Ata Mahmoodpoor, Anesthesiology and Critical Care Dept. (Journal of Clinical Anesthesia, IF: 9.452) Page 3

Visiting of DANA Pharmaceutical Company in 13 November, 2021



Covid-19 published articles are available in the website of Imam Reza General Hospital, Tabriz, Iran

Deputy of Education and Research of Imam Reza General Hospital, Tabriz University of Medical Sciences, expresses its gratitude and appreciation from the DANA Pharmaceutical Company, Dr. Ahmad Kharazi and the staff of the company, in holding of one-day scientific tour of visiting the achievements of company.

Abstract

Effect of Intermediate-Dose vs Standard-Dose Prophylactic Anticoagulation on Thrombotic Events, Extracorporeal Membrane Oxygenation Treatment, or Mortality among Admitted to the Intensive Care Unit-19-Patients with COVID-19.
(The INSPIRATION Randomized Clinical Trial)
JAMA: Journal of the American Medical Association (Q1), IF: 26.272



Farid Rashidi,
Associate Professor of Internal
Medicine - Pulmonary Division



Parisa Rezaeifar
Fellow of Pulmonology



Uria Tahamatan
Internal Medicine Resident

Co - Authors



Samira Matin,
Internal Medicine Resident

One of the important questions raised since COVID pandemic has been the effect of higher doses of anticoagulants in reducing mortality in critical COVID patients. To investigate and answer this question, a randomized multicenter study was designed and conducted with the participation of 11 referral centers.

In this study, a total of 600 critically ill patients in the two groups receiving intermediate dose and prophylaxis dose were included. The results showed that higher doses had no effect on reducing mortality. This is the first randomized study in this field that has published in JAMA journal and has been cited more than 100 times. I would like to thank you so much from Dr. Rezaeifar (pulmonary fellow), Dr. Tahamatan (internal medicine resident) and Dr. Matin (internal medicine resident) who had an important role in collecting data of patients in the ICUs of Imam Reza Hospital.



Abstract
Management of Female and Functional Urology Patients During the COVID-19 Pandemic
European Urology Focus (Q1)
IF: 5.996

Sakineh Haj Ebrahimi (Co-Author)
Professor of Urology

Coronavirus 19 (COVID-19) has altered the standard practice of urology worldwide, affecting not only uro-oncological patients but also patients with benign and debilitating conditions. Many patients will suffer delays in urology treatment because of COVID-19, with consequent impairment of their physical and psychological health and deterioration of their quality of life. The global effect of Covid-19 epidemic is likely to continue for some time, during which national health systems must treat Covid-19 and non-Covid-19 patients simultaneously. Therefore, functional urology units must reorganize their activities according to patient preference and the extent of the epidemic in each region. The European Association of Urology (EAU recently published EAU guidelines that were compatible with the COVID-19 era, including guidelines for incontinence, lower urinary tract symptoms, neurology, and chronic pelvic pain. In all treatment plans presented in the COVID-19 epidemic literature, female and functional urological (FFU) surgery is not sufficiently covered and is usually grouped into categories that are not urgent or can be delayed, but in a sustained epidemic scenario, there are cases where they cannot be delayed and should be considered a priority for surgery to minimize the burden on this group of patients, without compromising patients and healthcare staff. In this study, a classification of FFU surgical activity based on indication and urgency as well as textual recommendations for FFU during COVID-19 was proposed. Evidence was reviewed using limited data in urological literature on SARS-Cov-2 and the experi-

ence of FFU specialists from several countries around the world. FFU leaders from several countries around the world, including the countries most affected by COVID-19, such as Belgium, Brazil, Colombia, France, Iran, Italy, Portugal, Russia, Spain, and the Netherlands, Turkey, the United Kingdom and the United States were asked to design a strategy for reorganizing functional urology (diagnosis and treatment) that would be applicable in most parts of the world. Two factors were considered when designing these recommendations: First, some functional urological procedures are invasive and require the use of urinary and rectal catheters and aerosol production methods. And second, any pathway other than airborne droplets / aerosols may transmit SARS-CoV-2. Functional, benign, and pelvic floor conditions are often considered appropriate for delaying challenging times. The long-term consequences of this reduction in the clinical activity of functional urology are currently unknown. Several scientific societies have since published guidelines for managing this new situation and providing general recommendations. Asymmetries between countries, regions and even hospitals, not only in the number of approved cases, but also in the available resources, make it impossible to make predictions and recommendations. And the continuation of this Delphi story is called the Turnover project, in which a standard questionnaire has been prepared to examine the practice of functional urology during the pandemics, and the opinions of experts in this regard are given. The second article is being published in NAU journal and the next articles are waiting to be reviewed and the results will be provided after publication.

Abstract

Lateral Flow Assays (LFA) as an Alternative Medical Diagnosis Method for Detection of Virus species: The Intertwined of Nanotechnology with Sensing Strategies
TrAC Trends in Analytical Chemistry (Q1)
IF: 12.296



Dr. Pourya Sadeghi,
Medical student of Tabriz University of Medical Sciences
(First Author)

Viruses are responsible for multiple infections in humans that impose huge health burdens on individuals and populations worldwide. Therefore, numerous diagnostic methods and strategies have been developed for prevention, management, and decreasing the burden of viral diseases, each having its advantages and limitations. Viral infections are commonly detected using serological and nucleic acid-based methods. However, these conventional and clinical approaches have some limitations that can be resolved by implementing other detector devices. Therefore, the search for sensitive, selective, portable, and costless approaches as efficient alternative clinical methods for point of care testing (POCT) analysis has gained much attention in recent years. POCT is one of the ultimate goals in virus detection, and thus, the tests need to be rapid, specific, sensitive, accessible, and user-friendly. In this review, after a brief overview of viruses and their characteristics, the conventional viral detection methods, the clinical approaches, and their advantages and shortcomings are firstly explained. Then, lateral flow assay (LFA) systems working principles, benefits, classification are discussed. Furthermore, the studies regarding designing and employing LFAs in diagnosing different types of viruses, especially SARS-CoV-2 as a main concern worldwide and innovations in the LFAs' approaches and designs, are comprehensively discussed here. Furthermore, several strategies addressed in some studies for overcoming LFA limitations like low sensitivity are reviewed. Numerous techniques are adopted to increase sensitivity and perform quantitative detection. Employing several visualization methods, using different labeling reporters, integrating LFAs with other detection methods to benefit from both LFA and the integrated detection device advantages, and designing unique membranes to increase reagent reactivity, are some of the approaches that are highlighted.

Hassan Soleimanpour,
(Editor-In-Chief's message) Cont.

the first or responsible author of the professors and students of the centre. It is worth mentioning that, we have also introduced two review and original articles of prestigious journals in which the professors of this centre have been collaborated. Although researches show that different countries across the world have started valuable researches in the research area of COVID-19, there are still unknown issues that require more investigations. At the end, I would like to thank all the professors and students of Imam Reza General Hospital who have taken important steps despite the difficulties and limitations of the COVID-19 period.

Abstract

Th17 and Treg Cells Function in SARS-CoV2 Patients Compared with Healthy Controls
Journal of Cellular Physiology (Q1)
IF: 6.384

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Haleh Mikaeili (Corresponding Author),
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In the course of the coronavirus disease 2019 (COVID-19), raising and reducing the function of Th17 and Treg cells, respectively, elicit hyper inflammation and disease progression. The current study aimed to evaluate the responses of Th17 and Treg cells in COVID-19 patients compared with the control group. Methods: Forty COVID-19 intensive care unit patients were compared with 40 healthy controls. The frequency of cells, gene expression of related factors, as well as the secretion levels of cytokines, were measured by flow cytometry, real-time polymerase chain reaction, and enzyme-linked immunosorbent assay techniques, respectively. Results: The findings revealed a significant increase in the number of Th17 cells, the expression levels of related factors (RORγt, IL-17, and IL-23), and the secretion levels of IL-17 and IL-23 cytokines in COVID-19 patients compared with controls. In contrast, patients had a remarkable reduction in the frequency of Treg cells, the expression levels of correlated factors (Forkhead box protein P3 [FoxP3], transforming growth factor-β [TGF-β], and IL-10), and cytokine secretion levels (TGF-β and IL-10). The ratio of Th17/Treg, RORγt/FoxP3, and IL-17/IL-10 had a considerable enhancement in patients compared with the controls and also in dead patients compared with the improved cases. Conclusions: The findings showed that enhanced responses of Th17 cells and decreased responses of Treg cells in 2019 CoV patients compared with controls had a strong relationship with hyper inflammation, lung damage, and disease pathogenesis. Also, the high ratio of Th17/Treg cells and their associated factors in COVID-19 dead patients compared with improved cases indicates the critical role of inflammation in the mortality of patients.

Abstract

Nano-Curcumin Therapy, a Promising Method in Modulating Inflammatory Cytokines in COVID-19 Patients
INTERNATIONAL (Q2)
IMMUNOPHARMACOLOGY
IF: 4.932

Hamed Valizadeh, (First Author),
Assistant Professor of Internal
Medicine - Pulmonary Division



As an ongoing worldwide health issue, Coronavirus disease 2019 (COVID19) has been causing serious complications, including pneumonia, acute respiratory distress syndrome (ARDS), and multi-organ failure. However, there is no decisive treatment approach available for this disorder, which is primarily attributed to

(Continue on Next Page)

Hamed Valizadeh Cont.

the large amount of inflammatory cytokine production. We aimed to identify the effects of Nano-curcumin on the modulation of inflammatory cytokines in COVID-19 patients. Forty COVID-19 patients and 40 healthy controls were recruited and evaluated for inflammatory cytokine expression and secretion. Subsequently, COVID-19 patients were divided into two groups: 20 patients receiving Nano-curcumin and 20 patients as the placebo group. The mRNA expression and cytokine secretion levels of IL-1 β , IL-6, TNF- α and IL-18 were assessed by Real-time PCR and ELISA, respectively. Our primary results indicated that the mRNA expression and cytokine secretion of IL-1 β , IL-6, TNF- α , and IL-18 were increased significantly in COVID-19 patients compared with healthy control group. After treatment with Nano-curcumin, a significant decrease in IL-6 expression and secretion in serum and in supernatant ($P = 0.0003, 0.0038, \text{ and } 0.0001$, respectively) and IL-1 β gene expression and secretion level in serum and supernatant ($P = 0.0017, 0.0082, \text{ and } 0.0041$, respectively) was observed. However, IL-18 mRNA expression and TNF- α concentration were not influenced by Nano-curcumin. Nano-curcumin, as an anti-inflammatory herbal based agent, may be able to modulate the increased rate of inflammatory cytokines especially IL-1 β and IL-6 mRNA expression and cytokine secretion in COVID-19 patients, which may cause an improvement in clinical manifestation and overall recovery.

Abstract

Reduction and Exhausted Features of T lymphocytes under Serological Changes, and Prognostic Factors in COVID-19 Progression

Molecular Immunology (Q2), IF: 4.407

Ata Mahmoodpoor,

Professor of Intensive Care Medicine

(First Author)



Coronavirus disease 2019 (COVID-19) was officially described as pandemic since it distributed all over the world from December 2019. The virus has also been known as SARS-CoV-2 due to possessing similar characteristics as SARS-CoV, and belongs to β -lineage coronaviruses. Currently there exists no effective treatment strategy and vaccination programs are not publicly available yet. T lymphocytes play an important role in antiviral defenses. However, T cell frequency and functionality may be affected during the disease. Despite the fact that numerous studies have focused on T cell changes during COVID-19 and have highlighted the differences of T cell characteristics in mild and severe patients, our knowledge of the factors contributing to the progression of the disease is limited. Besides, the serological features, including hyperglycemia and hyperlipidemia, may provide valuable information which could serve as prognostic factors. Therefore, the aim of this study was to compare T cell traits in patients with mild and severe COVID-19, as well as finding immunological prognostic factors related to the serological features. Material and methods: One hundred adult patients with approved COVID-19 disease, who were admitted into the general hospital of Imam Reza at Tabriz University of Medical Sciences, Tabriz, Iran, from May until August 2020, were enrolled in this study. Fifty healthy individuals (aged 52.8 ± 15.32) referring to the hospital for routine physical examination were also considered as controls. Total blood samples were collected from patients with mild and severe COVID-19, and the total lymphocyte number, as well as CD4+ and CD8+ T cells were assessed using flow cytometry. Besides, the expression of exhausted T cell markers was evaluated. The levels of proinflammatory cytokines were also investigated in the serum of all patients using enzyme-linked immunosorbent assay (ELISA). Finally, the obtained results were analyzed along with laboratory serological reports. Results: COVID-19 patients showed lymphopenia and reduced CD4+ and CD8+ T cells, as well as high percentage of PD-1 expression by T cells, especially in severe cases. Serum secretion of TNF- α , IL-1 β , and IL-2 receptor (IL-2R) were remarkably increased in patients with severe symptoms, as compared with healthy controls. Moreover, high levels of triglyceride (TG) and low density lipoprotein cholesterol (LDL-C), were correlated with the severity of the disease. Conclusion: SARS-CoV-2 infection affects T lymphocytes that are substantial players in the fight against viruses, through reducing number and impairing functionality, which may become worse as the disease progresses. Meanwhile, pro-inflammatory cytokines, such as TNF- α and IL-1 β , as well as IL-2R, are elevated in severe cases in comparison to mildly infected individuals. Besides, serum metabolic changes, such as hyperlipidemia and diabetic background, may be valuable as feasible prognostic factors in COVID-19 progression. Possibly, further researches could clarify the precise mechanism through which T cells are affected by COVID-19, and focus on serum changes to predict and manage the consequence of a patient's condition.

Abstract

Effect of Bromhexine on Clinical Outcomes and Mortality in Patients: A Randomized Clinical Trial COVID-19

BioImpacts (Q1), IF: 3.831

Khalil Ansarin, Professor of Internal Medicine - Pulmonary Division (First Author)

Mohammad Reza Ardalan,

Professor of Internal Medicine - Kidney Division (Corresponding Author)



Bromhexine is a potential therapeutic option in COVID-19, but no data from a randomized clinical trial has been available. The present study aimed to evaluate the efficacy of bromhexine in intensive care unit (ICU) admission, mechanical ventilation, and mortality in patients with COVID-19. An open-label randomized clinical trial study was performed in Tabriz, North-West of Iran. They were randomized to either the treatment with the bromhexine group or the control group, in a 1:1 ratio with 39 patients in each arm. Standard therapy was used in both groups and those patients in the treatment group received oral bromhexine 8 mg three times a day additionally. The primary outcome was a decrease in the rate of ICU admissions, intubation/ mechanical ventilation, and mortality. Results: A total of 78 patients with similar demographic and disease characteristics were enrolled. There was a significant reduction in ICU admissions (2 out of 39 vs. 11 out of 39, $P = 0.006$), intubation (1 out of 39 vs. 9 out of 39, $P = 0.007$) and death (0 vs. 5, $P = 0.027$) in the bromhexine treated group compared to the standard group. No patients were withdrawn from the study because of adverse effects. The early administration of oral bromhexine reduces the ICU transfer, intubation, and the mortality rate in patients with COVID-19. This affordable medication can easily be administered everywhere with a huge positive impact(s) on public health and the world economy.

Abstract

Serum Trace Elements Levels and Clinical Outcomes Among Iranian COVID-19 Patients

INTERNATIONAL JOURNAL OF

INFECTIOUS DISEASES (Q1), IF: 3.623

Akbar Sharifi, Professor of Internal Medicine Pulmonary Division (Corresponding Author)



The relationship between safety level and trace elements is well known. Our aim was to estimate the relationship between serum trace elements and severity and consequences in patients with coronavirus 2019 (COVID-19). In this prospective, descriptive observational study, we included 114 patients admitted to the intensive care unit (ICU) and 112 non-ICU patients who were unified in terms of gender and age. Demographic information, clinical profile and outcomes were all collected. We strongly analyzed serum levels of zinc (zinc), copper (copper), selenium (Se) and manganese (Salek et al.) in both groups. Serum levels of copper, selenium and manganese in both groups were in the normal range and serum zinc levels were lower than normal. Based on these findings, serum levels of zinc, copper, selenium and manganese were not associated with disease severity ($P < 0.05$). While we found that serum zinc levels were strongly associated with patient outcomes ($P = 0.005$). Our results showed that lower serum manganese levels were associated with age over 55 years ($P = 0.006$). Our results were not in favor of a clear significant relationship between serum trace element levels and disease severity. We found zinc levels as a strong indicator of patient outcomes that can be considered to monitor patients' prognosis. Nutritional supplements or supplements can help reduce the poor consequences of low zinc levels in Iranian COVID-19 patients.

Abstract

Evaluation of Clinical Outcomes of Patients with Mild Symptoms of Coronavirus Disease 2019 (COVID-19) Discharged from the Emergency Department

PLOS ONE (Q1), IF: 3.24

Hamidreza Morteza Bagi, Associate Professor of Emergency Medicine (First Author)

Hassan Soleimanpour, Professor of Intensive Care Medicine (Corresponding Author)



In comparison to the previous Coronaviruses, the new coronavirus epidemic is more widespread in humans which indicates the highly contagious strength of the new virus. Due to the lack of access to medicines or vaccines to reduce the prevalence of infection, this study was performed to determine the outcome of patients who were discharged with mild symptoms of COVID-19 from the emergency department of Tabriz University of Medical Sciences hospitals in 1399. In this study, 400 patients have participated. The majority of patients had a family of four members. In the first week of patients' discharge, 240 were in good condition, 137 were in bad condition and 23 deaths were reported. In the third week, the outcome has changed which was 324 patients in good condition and 48 number in a bad situation. After 30 days, 377 patients with the good general condition were reported. The results showed that 69 patients and 25 patients for the second time and for the third time, respectively referred to the emergency department. After discharge, it was 81 patients transferred to their families. It has been observed that there is a significant relationship between virus transmission and the number of family members. It was about 20.3% of patients did not follow the hygienic protocols,

such as hand washing, social distancing and mask use. It has been observed that there is a significant relationship between the patients mortality and not keeping health protocols. This study showed that Covid-19 is more common in men than women and also has a high transmission rate. It has been observed that there is also a significant relationship between the rate of spread with patient history, mortality of patients, and the number of infected family members. The results also showed that 23 per cent of discharged patients with a mild condition from the emergency department of Sina and Imam Reza General hospitals died after one week, 17.3% of patients referred to the emergency department for the second time and 6.36% of patients referred to the emergency department for the third time.

Abstract

COVID-19 Outcomes in Patients with Systemic Autoimmune Diseases Treated with Immunomodulatory Drugs

BMJ journal (Q1), IF: 19.103

Khalil Ansarin, Professor of Internal Medicine - Pulmonary Division (First Author)

Alireza Khabazi, Professor of Internal Medicine - Rheumatology Division (Corresponding Author)



Patients treated with immunomodulatory drugs are vulnerable to viral infections, and worse prognosis of COVID-19 is probable in patients with autoimmune diseases (AD) that need to be studied. Here, we would like to share our study results that were conducted on patients with ADs treated with immunomodulatory drugs. In our single-centre retrospective study, charts of patients diagnosed with COVID-19 who were admitted to Imam Reza Hospital and were discharged or deceased were reviewed. Imam Reza Hospital is a referral centre for COVID-19 in the East Azerbaijan province, which is one of the high-risk areas in Iran. In this centre, patients with symptoms suggestive of COVID-19 who had oxygen saturation lower than 90% were admitted. Diagnosis was made using positive PCR or findings consistent with COVID-19 pneumonia based on chest CT scan and ruling out other causes of pneumonia. Disease outcomes were assessed based on the level of care, the time interval between the onset of symptoms and intubation, duration of intubation, duration of admission in intensive care unit (ICU) and the number of patients who died. Four hundred and eleven patients who were diagnosed with COVID-19 pneumonia were included in this study. Thirty of these patients had ADs. In the immunomodulatory drugs-naïve and treated with immunomodulatory drugs groups 69.9% and 62.5% of patients were PCR positive for COVID-19, respectively ($P=0.615$). The frequency of some clinical manifestations such as malaise, dyspnoea, myalgia, anosmia and taste loss was significantly higher in patients with ADs treated with immunomodulatory drugs compared with immunomodulatory drugs-naïve patients ($P < 0.05$). In addition, lymphopenia was found to be less prevalent in patients treated with immunomodulatory drugs ($P=0.015$). No significant differences were observed in the admission level, time interval between the onset of symptoms and intubation, duration of intubation, duration of admission in ICU and number of deceased patients in the two groups. To the best of our knowledge, no study has been conducted to assess the outcomes of COVID-19 in patients with ADs treated with immunomodulatory drugs in comparison with other patients. Our preliminary findings suggest that the severity and mortality of COVID-19 in patients with ADs treated with immunomodulatory drugs are probably not significantly different from the general population.

Abstract

Early application of prone position for management of Covid-19 patients

Journal of Clinical Anesthesia (Q1), IF: 9.452

Ata Mahmoodpoor, Professor of Intensive

Care Medicine (First Author)



Among the critically ill patients with COVID 19, acute respiratory distress syndrome (ARDS) is the most common presentation. Based on the recent guidelines, prone positioning (PP) should be performed as a rescue therapy in severe ARDS patients which can decrease the mortality. The primary effect of PP is due to more uniform alveolar size throughout the lung which is complemented by reduction in the effects of heart and abdomen. It is important to note that because of technical difficulty and long duration of this intervention (12–16 h per day), application of PP should be performed by skilled health care workers. It seems that early identification of high risk and critically ill COVID-19 patients with appropriate management and early application of PP in hypoxemic non-intubated patients results in a modest benefit. Each physician should consider factors like diffuse pulmonary edema and dependent alveolar collapse, elevated intra-abdominal pressure or decreased chest wall compliance of patients before performing PP. Moreover, although routine PP is not recommended in obese patients because of more procedural challenges, (Continue on Next Page)

Ata Mahmoodpoor, Cont.

this intervention can be performed in obese COVID-19 patients. Using this intervention and possible prevention of intubation is very important for patients who have chronic nocturnal NIV requirements, patients with chronic respiratory failure who have high baseline oxygen requirements, and patients with do-not-intubate status. Optimization of the safety of this method requires each department to have a written procedure and specific training of its nursing team. Combining other adjunctive therapies with PP appears to have an additive effect in improving oxygenation; thus, it can help clinicians to manage their patients accordingly. Finally, at this critical moment in the global outbreak of COVID-19, our simple and effective clinical expert-guided management can help to achieve success in the battle against the high mortality of COVID-19. This intervention at least acts as "buying time" with minimum cost and damage to decrease the intubation incidence in the critically ill patients.



A view of the Imam Reza General Hospital, Tabriz, Iran



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Abstract
COVID-19 Outcomes in Patients with Systemic Autoimmune Diseases Treated with Immunomodulatory Drugs
Annals of the Rheumatic Diseases (Q1)
IF: 19.103

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It has been reported that 15.1% of patients with rheumatic disease suspend their medications during COVID-19 crisis. To address medication non-adherence in our population, we conducted a study about medication adherence in patients with rheumatic diseases in the East Azerbaijan province, which is one of the provinces of Iran with a high prevalence of COVID-19. For a period of 2 weeks from 10 to 24 July 2020, information about adherence to medication behaviors of patients after COVID-19 outbreak was obtained by telephone interview in patients with various rheumatic diseases treated with non-steroidal anti-inflammatory drugs (NSAIDs), colchicine, glucocorticoids, synthetic disease-modifying anti-rheumatic drugs (sDMARDs) and

biologic DMARDs (bDMARDs). We defined non-adherence as $\geq 20\%$ change in the dose or frequency of the mentioned medications. After a telephone interview with 1324 patients with various rheumatic diseases, 591 females and 267 males with a median (IQR) disease duration of 5 (2, 10) years were enrolled in this study. Non-adherence was observed in 56 (6.5%) patients after the COVID-19 outbreak. Thirty-nine (6.6%) females and 17 (6.4%) males were non-adherent ($P=0.448$). Complete discontinuation of medications was the most common pattern of non-adherence. Fear of the immunosuppressive effects of medications was the most common reason for medication non-adherence. bDMARDs, NSAIDs, and methotrexate were the medications that patients had the highest percentage of non-adherence to. Non-adherence in patients with seronegative spondyloarthritis was more common than other groups of diseases. The main reason was the higher rate of treatment with bDMARDs in this group of patients in our clinic. Non-adherence leads to exacerbation of symptoms in 9.6% of patients. COVID-19 was developed in 7 (0.8%) patients. The data from this study showed that medication non-adherence was not common within 6 months after the issue of COVID-19 is widely discussed in the media. It should be noted that this pandemic may last until the end of the year and possibly longer, and with cross-sectional studies, it is not possible to give a definitive opinion on the overall impact of the COVID-19 on the medication adherence of patients with rheumatic diseases for a longer period of time.



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