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## Editorial

## What is the Difference between the First and Second COVID-19 Outbreak in Iran? - 6

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## EDITORIAL

The outbreak of the novel coronavirus (SARS-CoV-2) has caused major public health concerns across the globe. Currently, there is no antiviral drug or vaccine to combat COVID-19, mainly because of our limited knowledge about its pathogenesis. Iran was one of the first countries that faced the pandemic. With more than 100,000 infections and 5000 deaths, Iran has mobilized a countless number of resources to combat the virus by ceasing almost all activities until May 7, 2020. At that time, with less patients remaining to recover, the outbreak seems to be under control. But, after the reopening of businesses in nearly all around the country, the second wave of the outbreak began since May 10, 2020 [1]. Based on another study, we found that the main complaint of COVID-19 patients had changed overtime during the first COVID-19 outbreak from March 1, 2020, until May 1, 2020 [2]. Common complaints of COVID-19 patients during the early days of the first outbreak were fever, cough, fatigue, and dyspnea and then changed: gastrointestinal symptoms, olfactory dysfunction, vertigo, otalgia, and skin rash [2,3]. Therefore, we suggest that the pathogen may change in unknown ways over time. Currently, there is no clear image of the spectrum of symptoms of COVID-19. In the present study, we evaluated approximately 350 patients with COVID-19 (for the first time), based on the laboratory-confirmed diagnosis (reverse transcription-polymerase chain reaction, RT-PCR), who were admitted to ShahidModarres Hospital in Saveh, Iran, from May 10, 2020 to July 10, 2020.

In the first ten days, the main chief complaint of most of the patients was low-grade fever, myalgia and weakness without cough and dyspnea as compared to fever, cough, dyspnea, and weakness during the first two weeks of the first outbreak. Most of the patients were between 30 and 50 years old. Almost none of them was admitted to the Intensive Care Unit (ICU) during the hospital stay.

In the second ten days, the main chief complaint of most of the patients was fever, weakness, gastrointestinal symptoms, and cystitis signs (e.g., dysuria and urinary frequency) at the time of admission. We report that most of the patients with gastrointestinal symptoms were young people during the first outbreak [2,4]. In the second outbreak, patients with various ages (ranged from 5 and 55 years old) presented gastrointestinal symptoms, and it was approximately equal between various age categories. However, most of the patients with cystitis symptoms were young females. Although some of them had some defect in their chest CT scans, they did not complain of any respiratory symptoms. Also, almost none of them was admitted to ICU during their admission.

In the third ten days, the majority of our patients reported weakness, fever, myalgia, cough and olfactory dysfunction as their

main chief complaint. Most of them had some defect on their chest CT scans at the time of admission. Some of them were admitted to the Intensive Care Unit (ICU) during their hospital stay. Most of the patients were between 25 and 45 years old.

In last month from June 10, 2020 to July 10, 2020, most of our patients complained of fever, weakness, cough and myalgia at the time of admission and the majority of them had the pattern of COVID-19 changes on their chest CT scan. Most of the patients with these chief complaints were between 30 and 50 years old as compared to the first outbreak that were older [2] and we admitted some of them to ICU during their hospitalization.

Hydroxychloroquine and KALETRA (lopinavir/ritonavir) were mainly administered to treat the severe patients, and if necessary, antibiotics were also used, depending on the patient's condition. The current study is a response to the worries from other countries that the outbreak may rise in the next months while it is under control. But, it is still unclear whether other countries should also follow similar steps since the outbreak showing signs of ending. As SARS-CoV-2 can spread without causing any critical symptoms in the first days of the second outbreak, it is worthwhile to find new cases by screening all possible cases to avoid the fast spread of the virus and its mutation resulting in serious form of the disease. To the best of our knowledge, this is the first study that investigated the changes of main complaints of patients overtime during the second wave of COVID-19 outbreak. Further clinical studies are required to determine the changes in the patients' main complaints over time, as these changes may be related to virus mutation or its spread in different parts of the body, leading to the changes in the patient's main complaints over time.

## ETHICAL APPROVAL

The institutional ethical committee at Saveh University of Medical Sciences approved all study protocols.

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