

The Mild-Moderate Case Presentation of COVID-19 in Adult Male Patient, Al Wakra Study

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Abstract

Background: COVID-19 is currently one of the most infectious diseases worldwide. In this study, we focused on the mild and moderate cases of COVID-19 that can present with mild respiratory symptoms or non-respiratory symptoms. Many of that cases got miss diagnoses. We aim to help emergency physicians in reaching a proper and faster diagnosis of COVID-19 cases. **Method:** In this retrospective cross-sectional qualitative study, we collected 100 confirmed cases of COVID-19 that were presented in April 2020 in Al Wakra Hospital, Qatar. All that cases were mild-moderate cases without severe respiratory symptoms. We reviewed the electronic files on patient presentation, emergency department physician's note, temperature data, and chest X-ray findings. **Result:** Our result showed about 49% of the total COVID-19 confirmed cases had respiratory symptoms, while the remaining 51% had no respiratory symptoms. The respiratory symptoms, such as cough and sore throat, and non-respiratory symptoms like headache, vomiting, abdominal pain, and skin rash. Regarding fever presentation, we found that 66% of cases had a fever, while 34% had no fever complaints. The most frequently observed body temperature of patients was 37+ °C, followed by 38+ °C, 36+ °C, and 39+ °C. About 41% of cases had non-significant X-ray findings, and 40% cases had significant X-ray findings. The remaining 19% of cases did not undergo any X-ray examination due to mild and stable presentation. **Conclusion:** The presentations and symptoms of a mild-moderate case of COVID-19 are not respiratory only, there are extra-pulmonary symptoms and presentations should be considered. The most common presentation for mild-moderate COVID-19 was found to be fever. Chest X-ray may be performed depending

on the patient's condition, red flags, and abnormal findings in clinical examination, and should not be routine in cases with the mild presentation of COVID-19 suspicion in the emergency department.

Keywords

COVID-19, Mild-Moderate Case, Respiratory Symptoms, Non-Respiratory Symptoms, Fever and Chest X-Ray

1. Introduction

The coronavirus disease 2019 (COVID-19) is a pandemic disease spread all over the world [1]. It caused many countries to close their borders, with lockdown implemented in numerous areas to control the spread of COVID-19. The disease has high multiplication rates and, thus, is highly prevalent. This new disease has no specific treatment as of now, and almost all the suggested treatment options are still under trial [2].

COVID-19 has an incubation period of 2 to 14 days [2], and the symptoms can be detected after four to five days from exposure [3].

Disease severity may be mild, moderate, or severe. The mild presentation may include symptoms like body ache, cough or mild fever. The moderate presentation may include fever and pneumonia. The severe presentation may include severe pneumonia and hypoxia. Critical cases with significant hypoxia and organ failures may need a mechanical ventilator and ICU admission [3] [4] [5]. Asymptomatic cases have also been documented [1] [5] [6].

Currently, the mortality rate of COVID-19 is about 2% to 5% according to the community and may reach up to 7% as observed in Italy [7] [8] [9].

We have research questions: Do COVID-19 cases present with respiratory or acute respiratory symptoms only? Can COVID-19 cases present with fever or without fever?

In our hospital, as emergency medicine physicians, we wanted to understand the new disease presentation to facilitate the diagnosis process. We believe it is too easy to diagnose the COVID-19 case with severe infection because they almost presented with respiratory failure and may get early diagnoses. In mild-moderate cases, the patient may present without respiratory symptoms and may release to home without any precaution, which means more spread of the infection. Thus, we conducted this study to examine COVID-19 presentation in mild and moderate cases. We hope our results and conclusion will be helpful for emergency department (ED) physicians anywhere in the world.

2. Materials & Methods

This is retrospective, cross-sectional study examined mild and moderate cases of COVID-19 who presented to the adult emergency department in Al Wakra hospital for respiratory symptoms, fever or COVID-19 suspicion and were dealt

with by adult ED physicians. During the period from 1st of April 2020 until 30th of April 2020, we collected 100 COVID-19 confirmed cases via the Cerner Computer program. These 100 cases were the available cases for our study after the exclusion process. Our study included the male patients who tested positive in COVID-19 PCR test in our fever tent clinic, and all of these cases had mild to moderate presentations (*i.e.*, no ICU admissions, we considered the symptomatic case without lower respiratory infection as mild case while the patient with lower respiratory tract infection with oxygen saturation more than 94% as moderate case) and were either admitted to the medical ward or sent to Quarantine centres. We excluded severe cases, *i.e.*, oxygen saturation less than 94%, those admitted in ICUs, the patient who has negative COVID PCR, female patients and pediatric cases. Because of the special consideration in females as Child-bearing, pregnant, lactating, premenopausal and menopausal, we believe they need special consideration and separate study. Our Emergency department is adult emergency department and our scope service is according to Hamad Medical Corporation policy for adult people above 15 years old. So the children under 15 years old are excluded from our study.

Primary outcome: The primary outcomes were the signs and symptoms that presented in mild-moderate COVID-19 cases, and their respective frequencies in the included patients. Symptoms of COVID-19 other than respiratory symptoms were also considered for primary outcome.

Secondary outcome: The mode of temperature in mild -moderate COVID-19 case.

Tertiary outcome: The tertiary outcomes included the benefits of using chest X-ray in COVID-19 diagnosis.

We used our computer program “Cerner” to collect the data from ED physicians’ notes and vital signs table. We collected the patient complaints and presentation symptoms from ED physicians’ note. We collected the temperature from the vital sign table from the first column that showed the vital sign and temperature on time of registration. Chest X-ray interpretations were obtained from ED physicians’ note or from radiologists’ notes when the physicians’ notes did not include any comments on chest X-ray. We preferred the ED physicians’ notes to the radiologists’ notes because the former note included the first impressions of chest X-rays without any radiologist’s opinions. These impressions were considered before making any clinical decisions.

We managed our data according to their respective frequencies and mode as qualitative descriptive data.

3. Results

From 100 COVID-19 confirmed cases, with mild-moderate presentations, we found that 27 cases (27%) presented with fever only, 2 cases (2%) presented with epigastric pain, 29 cases (29%) presented with fever and cough, 2 cases (2%) had vomiting, 1 case (1%) had skin rash and fever, 9 cases (9%) had upper respirato-

ry tract infections (URTI), 8 cases (8%) had a history of exposure to COVID-19 but had no significant symptoms, 9 cases (9%) presented as with fever and headache, 2 cases (2%) presented with headache only, 2 cases (2%) presented with shortness of breath (SOB), and 9 cases (9%) presented with cough only.

Thus, the total cases with respiratory symptoms were 49 cases, *i.e.*, 49% (29 cases of fever and cough + 9 cases of upper respiratory tract infection URTI + 2 cases of shortness of breathe SOB + 9 cases of cough only). The remaining 51 patients (51%) presented without respiratory symptoms (27 cases of fever, 2 cases of epigastric pain, 2 cases of vomiting, 1 case of fever and rash, 8 cases of exposed history only without any symptoms, 9 cases of fever and headache, and 2 cases of headache only) (Table 1).

In total, 66 patients (66%) presented with fever while the remaining 34 patients (34%) had no fever complaints (Table 1).

With respect to body temperature of our patients, we found 24 cases (24%) had 36+ °C (from 36°C to 36.9°C), 38 cases (38%) had 37+ °C (from 37°C to 37.9°C), 29 cases (29%) 38+ °C (from 38°C to 38.9°C), and 9 cases (9%) had 39+ °C (from 39°C to 39.9°C) (Table 2).

With respect to chest X-ray examination of our patients, we found 19 patients (19%) had no X-ray requested at the time of presentation in our ED, while 81 cases (81%) had X-rays.

Of the total 81 cases with X-rays, 25 cases (25%) had congested X-rays, 8 cases (8%) had bilateral pneumonia, 5 cases (5%) had unilateral pneumonia, 14 cases (14%) had normal chest X-rays, 27 cases (27%) had non-significant chest X-ray findings, and 2 cases (2%) had ground glass appearance in their X-rays (Table 3).

Table 1. The symptoms and complaints of mild COVID-19 cases at the time of presentations.

| Symptoms or complain | * Respiratory symptoms | | | | | | *Non respiratory symptoms | | | | | Total |
|----------------------|------------------------|-------|-------|------------------|-----------------|---------------------|---------------------------|----------|---------|---------------|---|-------|
| | Non-fever complaints | | | Fever complaints | | | Non-fever complaints | | | | | |
| | **URTI | cough | **SOB | Fever with cough | Fever with rash | Fever with headache | Epigastric pain | vomiting | exposed | Headache only | | |
| Number of case | 9 | 9 | 2 | 29 | 27 | 1 | 9 | 2 | 2 | 8 | 2 | 100 |
| Total | 49 | | | | | | 51 | | | | | 100 |
| Total | 20 | | | 66 | | | 14 | | | | | 100 |

*Respiratory symptoms included URTI, cough, SOB and Fever with Cough. *Non respiratory symptoms include: fever, fever with, fever with headache, epigastric pain, vomiting, exposed and headache only. **URTI: upper respiratory tract infection without fever, **SOB: shortness of breath.

Table 2. The temperature of mild COVID-19 cases at the time of presentation.

| Temperature by centigrade (°C) | 36+ | 37+ | 38+ | 39+ | Total |
|--------------------------------|-----|-----|-----|-----|-------|
| Case number | 24 | 38 | 29 | 9 | 100 |

Table 3. The X-ray finding in our mild cases of COVID-19.

| Chest X-ray | Not required | Non-significant findings | | | Significant findings | | | Total |
|-----------------|--------------|--------------------------|--------|-----------------|----------------------|---------------------|----------------------|-------|
| | | NA | Normal | Non-significant | Congested | Bilateral pneumonia | Unilateral pneumonia | |
| Number of cases | 19 | 14 | 27 | 25 | 8 | 5 | 2 | 100 |
| Total | 19 | | 41 | | | 40 | | 100 |
| Total | 19 | | | | 81 | | | 100 |

In general, 41 cases of 81 cases (about 51%) had non-significant chest X-ray findings, while 40 cases of 81 cases about (49%) had significant X-ray findings. By another expression 40 cases of 100 cases had significant findings, 41 cases of 100 cases had non-significant findings while 19 cases of 100 had no X ray in the Emergency department (**Table 3**).

4. Discussion

Qatar is now part of those regions affected by the COVID-19 pandemic as the first positive case was detected in Qatar on 29 February 2020 [10].

During March 2020, we had prepared well to receive more cases of COVID-19. Our information about this disease was based on severe acute respiratory syndrome coronavirus 2 (SARS-COV2) [11], so we considered respiratory presentation for this disease such as cough, SOB, and/or sore throat. With time, we observed simple fever cases without any respiratory symptoms that were diagnosed with COVID-19. Our colleagues have also reported COVID-19 cases with gastroenteritis presentation or fever of unknown sources [12]. This resulted in the need for more in-depth knowledge of this disease. Our experience regarding COVID-19 grows day by day. Thus, we documented our experiences so as to share them internationally to contribute to evidence-based practice.

The international experience regarding COVID-19 has documented five types of COVID-19 presentations: asymptomatic, mild, moderate, severe and critical [13]. The mild case may presented with mild respiratory symptoms, fever, body ache or other mild manifestations without evidence of pneumonia. The moderate case is symptomatic case with pneumonia or bilateral infiltrations without respiratory distress or oxygen desaturation. The severe case has severe pneumonia with oxygen desaturation. The critical case has severe pneumonia with respiratory distress and may multiple organs failure. The severe and critical cases can be easily diagnosed by clinical presentation, images such as chest X-ray and that guide to urgent PCR. However, it is difficult to diagnose cases with to moderate presentations because some presentations are without respiratory symptoms or have overlapping symptoms with other diseases. For example, some cases initially presented with headaches and were prescribed pain killers, but they later returned with severe respiratory distress and more disease spread in

the community.

Based on our findings, COVID-19 presentation may include, fever symptoms, cough or respiratory symptoms, headache without fever, vomiting, abdominal pain, and skin-related symptoms. The history of patients, such as exposure to the disease, travel history or working in high-risk contaminated areas like airports or lockdown zones may guide in the proper diagnosis of COVID-19. We cannot neglect any history of fever with headaches, abdominal pain, or fever of unknown origin without confirming it with COVID PCR or COVID antigen at least.

With respect to the requirement of chest X-ray in COVID diagnosis, we found that 19% of our sample had no X-ray request from ED physicians, which may be because they had stable or mild presentations. About 41% had non-significant X-ray findings and 40% had significant X-ray findings such as bilateral pneumonia, glass ground prance, and basal infiltration. Thus, we suggest that a chest X-ray should be done according to case presentation and clinical examination findings.

5. Conclusion

COVID-19 mild and moderate case is not respiratory symptoms only and extra-respiratory symptoms should be respected and considered. In our study, fever was the most frequently observed symptom in COVID-19 cases. The most frequent temperature observed in COVID-positive cases was 37+ °C, and also other normal and high temperatures were reported. Chest X-ray may be required according to the patient's condition, red flags, and abnormal clinical findings exam, and should not be a routine in all cases with suspected COVID-19 in ED.

6. Strength and Limitations

One of the points for strengths and limitations of this study is that it focuses on adult male patients and excludes the female and pediatric patients. Because our department is the adult emergency department, our sample focused on adult patients and we consider the female and pediatrics as a special consideration. The female patient has a special period for menstruation, pregnancy, lactation, and menopause, so there are special considerations about the physiological changes in that period. The study focused on adult males to be more accurate in the result without any bias in the result. We think we need 2 more studies, one for females and the other for pediatrics with full consideration of the physiological changes. Also, one of the limitations of this study is that it used only one single centre but our centre is rich enough to do the COVID PCR for the mild case that suspicion as COVID-19 and we think it's not available in many countries because it's costly. So this study has a good explanation to understand the COVID-19 mild case presentation in the emergency department and in medical clinics. May this study need to repeat again to estimate the patient for 3 months

at least. This study showed how to use the chest X-ray to diagnose mild cases of COVID-19, and also discussed the temperature presentation of mild cases of COVID-19.

The Authors' Contributions

Data are collected and analyzed by Dr. Islam Elrobaa, and reviewed by Dr. Abdallah Elsaedy. The manuscript was reviewed and scientifically reviewed by Dr. Amr Elmoheen. The study director was Dr. Khalid Bashir.

Conflicts of Interest

The authors have no conflict of interest.

Ethical Statement

No personal data used or involved in this study. This study got medical research center approval in Hamad Medical Corporation Qatar under reference MRC-01-20-1097.

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Appendix

What is already known about COVID-19?

- COVID-19 is one of most of infectious disease in the world and still new discovered without specific treatment [almost under trial]
- The disease has serious respiratory symptoms and complications
- The disease has high morbidity and mortality rate in some communities

What is this study adds?

- To confirm COVID-19 Case can be presented without respiratory symptoms, COVID-19 is not only respiratory disease.
- To be aware about the mild and moderate case of COVID-19: symptoms, temperature and presentations to prevent the spread of the disease.
- To be aware about chest X-ray indication and when to use it in COVID-19 suspicion cases.