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General Medicine

EPIDEMIOLOGIC AND CLINICAL CHARACTERISTICS OF 46 ASYMPTOMATIC PATIENTS HOSPITALIZED WITH COVID-19

KEY WORDS: COVID-19; Asymptomatic Patients; Clinical Characteristics of COVID-19.

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ABSTRACT

Coronavirus disease (COVID-19) is a pandemic disease as declared by WHO are is infected over 14 million people till date. The clinical spectrum of the disease varies between asymptomatic patients, mildly symptomatic, and those who are severely affected requiring ICU care. Although the clinical manifestations such as fever, cough, sore throat, loss of taste and smell, loose stools, fatigue, etc. are being expressed in patients in different proportions, patients who are infected with the disease and still show no signs and symptoms pose a threat. This is because they are very less likely to seek medical help after being infected, and would go undetected into the community as a carrier, and may spread the disease to others, which is still unclear. This study explains the epidemiological and clinical manifestations of asymptomatic patients admitted to our covid care centre in a span of 12 days. It may be imperative to increase the number of testing done within the community to identify the asymptomatic carriers of the disease to avoid a super spread event.

INTRODUCTION

The coronavirus disease (COVID-19) is a rapidly spreading disease caused by the novel coronavirus also known as Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2). The COVID-19 was first reported from the Wuhan city in China, which is now spread to over 196 countries and territories around the world [1]. The World Health Organization have declared it as a Public Health Emergency of International Concern on 30th January 2020, and as pandemic on 11th March 2020 [2, 3]. The first case reported in India was at Kerala, on 30th January 2020 for three students who returned from Wuhan.

Seven species of coronavirus have been identified that are capable of affecting humans. The virus is a enveloped positive sense RNA virus with a diameter between 60 to 140nm and having club like spikes around it, giving a crown like appearance, hence its name (corona in latin means crown) [1]. The clinical spectrum of COVID-19 varies from asymptomatic, mildly symptomatic, severe illness, those with respiratory distress (ARDS) leading to use of mechanical ventilation, and also with systemic manifestations such as sepsis, shock, multiple organ failure, etc. [4]. The signs and symptoms presented by an individual include fever, cough, sore throat, headache, fatigue, loose stools, headache, myalgia and breathlessness. Lack of taste as well as smell is also found to be present in many. Literatures suggest the prevalence of clinical features on those who are infected as follows; Tian et al identified fever (82.1%), cough (45.8%), fatigue (26.3%), dyspnea (6.9%), and headache (6.5%) in patients, with a median incubation period of 6.7 days [5]. Sohrabi et al reported fever (98%), cough (76%), dyspnea (55%), myalgia or fatigue (44%), sputum production (28%), headache (8%), hemoptysis (5%), and diarrhea (3%) [2].

Laboratory investigations are usually non-specific, with presence of lymphopenia, and increased levels of ALT/AST, prothrombin time, creatinine, D-dimer, CPK and LDH in severe disease. Chest X-ray reveals bilateral infiltrates with CT imaging demonstrating ground glass opacities and sub segmental consolidation [1].

Increasing rates of those who are infected in the community and the presence of asymptomatic patients pose a major threat to the healthcare facilities around the world. Increasing the number of tests done within the community is the only way to identify those who doesn't have any symptoms, and if they are not identified, can lead to spread of infections through contact with them. Many literatures point out the prevalence of asymptomatic patients within the specific regions. Mizumoto et al reported 320 out of 634 positive cases on board the Diamond Princess Cruise ship in Japan to be asymptomatic [6]. We present a series of asymptomatic cases admitted in a tertiary covid care centre within a span of 12 days.

METHODS

We adopted a purposive sampling technique, and selected asymptomatic individuals who were admitted to our tertiary covid care centre after being tested positive for COVID-19 by RT-PCR test, during a period of 12 days from 10th to 21st May 2020. Patients were excluded from the study if they have any clinical manifestations of the disease. Demographic details and mode of transmission of the disease were documented. The investigations including radiological and laboratory findings were performed and documented during the time of admission. All patients were provided medical care which included Hydroxychloroquine (HCQ) mg BID for 5 days along with vitamin supplements and Pantoprazole. Presence of any signs and symptoms and complications that arised during the period of hospital stay were also documented if any.

RESULTS

A total of 46 individuals were admitted with a positive RT-PCR test for COVID-19 and without any symptoms during a period

of 12 days. The mean age of the subjects was 30.83±12.39 with minimum of 7 and maximum of 58 years of age. There were 27 males and 19 females within the study population. None of the subjects had any other comorbidities such as diabetes or hypertension except for one, who had a history of coronary artery disease and hypertension. Out of the 46 subjects, 29 (63%) had contact with confirmed positive cases, 10 of them (21.7%) had a history of travel to endemic areas, 3 of them (6.5%) were identified from red zone areas. 4 of the 46 subjects (8.6%) had no contacts and were no known about the mode of transmission. Figure 1 depicts the timeline of 46 asymptomatic patients under consideration, from the day of positive RT-PCR test till the day of discharge from the hospital.

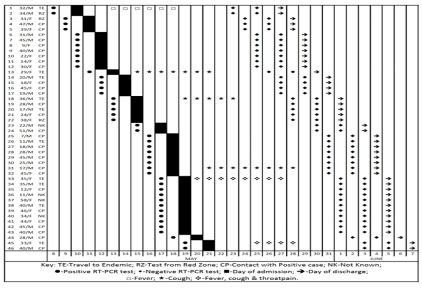

Figure 1. Timeline of asymptomatic patients admitted in our centre in 12 days.

There were no significant radiological findings identified on chest x-ray in all 46 subjects. The mean values of laboratory findings are provided in table 1. The electrolytes were normal on examination.

Table 2. Laboratory findings of the patients who were positive for COVID-19

Variables	Mean±SD	Minimum	Maximum
Haemoglobin (g/dL)	10.86±1.36	8	13.8
Total Count (mm3)	6143.48±1620.61	4400	12500
Lymphocytes (/µl)	0.39±0.06	0.22	0.49
Platelets (x109/L)	2.5±0.64	1.6	4.5
Creatinine (mg/dL)	0.93±0.21	0.6	1.6
Bilirubin (mg/dL)	0.99±0.26	0.4	1.8
Serum Albumin (g/dL)	4.09±0.89	2.8	7.8
Neutrophils (%)	58.96±5.61	47	72

Out of the 46 patients, 6 (13%) of them developed symptoms including fever cough and throat pain, which was subsided in the due course of treatment. But none of the patients demonstrated severe illness or any other complications during the hospital stay till discharge. The compliance rate of treatment was 100% and the attrition rate was 0. All patients were discharged on the 17th day of admission to the hospital after 2 negative RT-PCR tests.

DISCUSSION

There is a huge variation in the clinical features presented by patients of COVID-19 around the world. Till date, there is a cumulative total of 14.3 million people affected by coronavirus with more than 6 lakh deaths reported within countries. The commonly seen complications of COVID-19 are acute lung injury, ARDS, shock and renal failure, with an overall case fatality rate ranging between 2 to 3% [1].

Being an asymptomatic COVID-19 patient pose a serious threat to the community right now. As they do not manifest symptoms, they will not seek medical help or visit hospital by any chance, and being carriers of the infective virus they might aid in transmission of the viral disease. Tian at all reported the proportion of severe, mild, non-pneumonia and asymptomatic cases were 18%, 73%, 4% and 5% respectively [5].

There is a normal or decreased total white blood count and a decreased lymphocyte count demonstrated by patients in the early stage of the disease. Increased D-dimer values are seen in critically ill patients. The studies suggest that SARS-CoV-2 may potentially affect lymphocytes early in the disease [4, 7-8]. The severity or progression of the disease may be directly related to the damage of T lymphocytes caused by the coronavirus [9]. The laboratory findings of our study was in normal limits.

Our study identified 46 individuals who were positive for SARS-CoV-2 during RT-PCR test with no signs and symptoms of the infection at the time of admission. The individuals were tested from the community with a history of travel or contact with a confirmed case. Out of the 46 individuals, the transmission history of 4 of them (8.6%) was unaware. It was noteworthy that the medical team identified 46 individuals within a span of 12 days from the community without any symptoms. The virulence of asymptomatic patients is not known still. If the asymptomatic patients were not identified, they may have led to cause a super-spreader incident.

CONCLUSION

We identified 46 patients within the community who were asymptomatic during the positive RT-PCR test and while admission during a span of 12 days. As they carry the virus within them, identifying the individuals by increasing the number of tests within the community is imperative. Failure to do so may lead to a super spread event, which is still unknown or yet to be studied.

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