Original research article

Clinical Profile and Outcome of COVID 19 Patients from JIIU's IIMSR, Jalna, Maharashtra.

Abdul Jabbar Abdul Mannan[1], Syed Shahnawaz Ali Hamid Ali[2], Mohammed Suhail[3], Mohammad Shafee[4], Afshan Kausar[5]

[1]Associate Professor, Department of General Medicine, JIIU's Indian Institute of Medical Science & Research, Badnapur, Jalna-431202, M.S.

[2]Assistant Professor, Department of General Medicine, JIIU's Indian Institute of Medical Science & Research, Badnapur, Jalna-431202, M.S.

[3]Professor, Department of Physiology, JIIU's Indian Institute of Medical Science & Research, Badnapur, Jalna-431202, M.S.

[4]Professor, Department of Community Medicine, JIIU's Indian Institute of Medical Science & Research, Badnapur, Jalna-431202, M.S.

[5]Associate professor department of physiology JIIUS Indian Institute of medical science and Research Badnapur Jalna Maharashtra.
Corresponding author: Dr. Syed Shahnawaz Ali

E-mail: shahnawazonline@gmail.com

Abstract

Background: COVID-19 is a pandemic spread all over the world. This disease has imposed a huge burden on health resources. Evaluation of clinical profiles of such patients can help in understanding and managing the pandemic more efficiently.

Methods: This was a cross sectional observational study of 100 diagnosed COVID-19 patients admitted to JIIU's, IIMSR, from April to June 2021. All these patients were positive for COVID-19 by an oro-nasopharyngeal swab rt-PCR based testing.

Results: The mean age of the population was 45 years with a male predominance (72% patients). All the patients (100 %) were symptomatic, with fever being the most common symptom (85%), followed by cough (62%).

Conclusion: Severity based approach to COVID -19 infections, with defined criteria and treatment guidelines will help in judicious utilization of health-care resources

Key Words: Covid 19, Clinical profile, Outcome

Introduction

Coronavirus disease (COVID-19) is a global pandemic and is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It initially started in Wuhan, China, and quickly spread to over 180 countries.[1]

In India, COVID-19 was first detected on 30 January 2020, and the numbers of infected patients crossed a few hundred within a month, [2]. Early cases of COVID -19 mostly consisted of mild self-limiting infections [3]. However, with passing time, cases emerged with a multiple different patterns of clinical presentations, progression and outcomes. A huge spectrum of patients emerged presenting with varying co-morbidities, clinical presentations, need for oxygen supplementation and/or invasive mechanical ventilation, and mortality.

Study of clinical profiles and outcomes of COVID -19 infections is essential for understanding the disease and its treatment outcomes, so as to be better prepared for future.

Aims and objectives
To study the clinical profile and outcome of the COVID-19 confirmed patients admitted to JIIU's IIMSR, Jalna.

Methods
The present study was a cross sectional observational study. Oro-nasopharyngeal swab-based testing using rt-PCR was employed for laboratory confirmation of COVID-19. A case was labelled as confirmed positive if rt-PCR testing showed a positive result. The study period was April 2021 to June 2021.

All patients were admitted and treated in accordance with the prevailing India guidelines for management of COVID-19. The statistical analysis was carried out using Microsoft Excel. All quantitative data like age, weight, and duration of symptoms were estimated using measures of central location (mean). Qualitative variables were described as proportions. A predetermined p-value of <0.05 was used for statistical significance.

Results
A total of 100 COVID-19 positive patients were admitted during the duration of the study. Ninety seven patients were discharged and three died. The demographic and clinical characteristics are summarized in Table 1.

The mean age of the population was 45 years with a male predominance (72%). All the patients were symptomatic (100%), with fever being their most common symptom (85%) followed by cough (62%). Sore throat (58 patients) and myalgia (52) were the next most frequent, whereas diarrhoea (4%) was uncommon. Total 74 patients (74%) had pre-existing comorbidities.

The frequencies as recorded in decreasing order were diabetes mellitus (DM) (57%), systemic hypertension (47%), active tuberculosis (TB) (07%), hypothyroidism (03%), anxiety / depression (01%) and obstructive airway disease (01%) were seen.

Thirty-two (32%) patients required admission to the Intensive Care Unit. Mortality was seen in three ICU patients.

Table 1: Demographic, Clinical and Ooutcome details of the patients in the study

Parameter	Mean ± SD	Range
Age (years)	42.07±19	(17-78)
Gender (male:female ratio)	72:28	
Stay duration (days)	9.85±7.78	(2-23)
Duration of symptoms at admission (days)	07 ± 6.29	(5-25)
Symptom (any)	100	(100%)
Fever	85	(85%)
Cough	62	(62%)
Sore throat	58	(58%)
Myalgia	52	(52%)

Breathlessness	47	(47%)
Headache	28	(28%)
Rhinorrhoea	05	(5%)
Diarrhoea	04	(04%)
SpO2 (%)	92.98±7.02	(70-100)
Discharged	97 (97%)	
Died	03 (03%)	

Table 2: Covid 19 with Comorbidities

Comormorbidity	Number (Percentage)
Comorbid illness (any)	74 (74%)
DM	57 (57%)
HTN	43 (43%)
Active TB	07 (07%)
Hypothyroidism	3 (3%)
COPD	01 (01%)
Anxiety disorder/depression	01 (01%)
Required ICU	37 (37%)

Discussion

This was a cross sectional observational study of 100 COVID-19 patients admitted to JIIU's IIMSR, Jalna. The study population was constituted by a young population with comorbidities reported in more than half patients. Mostly middle aged patients suffered from COVID- 19. The mean age in our study is similar to other studies in India reporting COVID - 19 in younger population [4]. However it is slightly lower than those reported in studies from China and the USA [5-8]. The disease was more common in men (72%) than women which is similar to finding observed by Guan and colleagues [8]. Also, slight male preponderance was observed in a series of 5700 COVID-19 cases from USA [8].

The most common symptom in our study was fever (85%), which was similar to the findings of Guan and colleagues [5]. Other symptom observed in our study were cough, sore throat, myalgia, breathlessness, headache, rhinorrhea and diarrhea. Most common symptoms observed from the onset of this outbreaking in Wuhan, China, were fever, cough, fatigue, sputum production, headache, hemoptysis, and gastrointestinal (GI) symptom such as diarrhea [9,10].

In our study, need for ICU care was found in 37% patients, which is similar to a study by Richardson S et al in New York, USA [10] (14.2%) but it is higher than the 5% reported from Wuhan in a repot by WHO [8].

In our study, DM was the only comorbidity associated with significantly higher need for ICU care or higher mortality. In a meta-analysis of 523 studies, Zheng and colleagues also found DM to be a risk factor for both critical and mortal patients [11].

Hypertension was the second most common co-morbidity in our study. However, it was not found to be associated with adverse outcome of COVID-19 infection. This finding is similar to study done by Songjiang Huang et al, in which a multivariate analysis (adjusted for age and sex) failed to show that hypertension was an independent risk factor for COVID-19 mortality or severity [12].

Comorbid illness was present in all patients who did not survive in our study. A multicentre study done by Xie J et al also found at least one comorbidity in 74% of patients who died of COVID -19[13].

In our study, no significant correlation was found between TB and COVID -19 associated mortality. However, the number of patients with with TB and COVID-19 was very small. In a country like India with a high burden of TB, larger studies are required to determine the association and prognosis. A study from 8 countries in Europe has shown that Tuberculosis may not be a major determinant of mortality. (14)

In our study, majority of patients were stable, requiring only symptomatic care. A very low incidence of mortality was observed among those requiring critical care.

The major limitation of our study was that it did not cover the symptoms, co-morbidities and prognosis of undiagnosed cases of COVID-19, who did not undergo the testing. These cases may have been a significant population and might have had a huge impact on overall statistics.

Conclusion

This study helps in understanding the clinical profile of Covid-19 patients at a tertiary care hospital in rural area of Maharashtra. The severity of infection was less in our study and poor outcome was associated with co-morbidity.
However, study among larger population, along with detection of undiagnosed cases is necessary to understand the real status of COVID- 19 infection in India.

References

1. Adekunle Sanyaolu,[1] Chuku Okorie,[2] Aleksandra Marinkovic,[3] Risha Patidar,[3] Kokab Younis,[4] Priyank Desai,[5] Zaheeda Hosein,[6] Inderbir Padda,[7] Jasmine Mangat,[6] and Mohsin Altaf[8.] Comorbidity and its Impact on Patients with COVID-19. SN Compr Clin Med. 2020; 2(8): 1069–1076.
2. Ministry of Health and Family Welfare, Government of India. COVID-19 India. Accessed on: 8th May 2020. Available from: https://www.mohfw.gov.in/
3. Gupta N, Agrawal S, Ish P, et al. Clinical and Epidemiologic profile of the initial COVID-19 patients at a tertiary care centre in India. Monaldi Arch Chest Dis 2020;90:1294. doi: 10.4081/monaldi.2020.1294.
4. Ministry of Home Affairs, Government of India. Population census of India. Accessed: on 20th June 2020. Available from: https://censusindia.gov.in/Census_And _You/age_ structure_an d_marital_status.aspx
5. Guan WJ, Ni ZY, Hu Y, et al. Clinical characteristics of coronavirus disease 2019 in China. N Engl J Med 2020;382:1708- 20. doi:10.1056/NEJMoa2002032.
6. WHO. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). Accessed on: 20th June 2020. Available from: https://www.who.int/docs/ defaultsource/coronaviruse/who-china-joint-mission-on-covid-19- final-report.pdf
7. Wu Z, McGoogan JM. Characteristics of and important lessons from the Coronavirus disease 2019 (COVID-19) outbreak in China: Summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. JAMA 2020;323:1239-124.
8. Richardson S, Hirsch JS, Narasimhan M, et al. Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City

area. JAMA 2020;323:2052-9.

9. Huang C, Wang Y, Li X, Ren L, Zhao J, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 2020;395(10223):497–506. doi: 10.1016/S0140-6736(20)30183-5. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

10. Yang J, Zheng Y, Gou X, Pu K, Chen Z, Guo Q, Ji R, Wang H, Wang Y, Zhou Y. Prevalence of comorbidities in the novel Wuhan coronavirus (COVID-19) infection: a systematic review and meta-analysis. *Int J Infect Dis.* 2020;S1201–9712(20):30136–30133. doi: 10.1016/j.ijid.2020.03.017. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

11. Zheng Z, Peng F, Xu B, et al. Risk factors of critical & mortal COVID-19 cases: A systematic literature review and metaanalysis. J Infect 2020;81:e16-25.

12. Songjiang Huang, Jianwen Wang, Fen Liu, Jiacheng Liu, Guijuan Cao, Chongtu Yang, Wei Liu, Chao Tu, Muxin Zhu & Bin Xiong. COVID-19 patients with hypertension have more severe disease: a multicenter retrospective observational study. *Hypertension Research.* (2020) volume 43, pages824–831

13. Xie J, Yong Z, Guan X, et al. Clinical characteristics of patients who died of Coronavirus disease 2019 in China. JAMA Netw Open 2020;3:e205619.

14. Motta I, Centis R, D'Ambrosio L, et al. Tuberculosis, COVID19 and migrants: Preliminary analysis of deaths occurring in 69 patients from two cohorts. Pulmonology 2020;26:233-40.

15. Ferreira M, Blin T, Collercandy N, et al. Critically ill SARSCoV-2-infected patients are not stratified as sepsis by the qSOFA. Ann Intensive Care 2020;10:43.