Original Article

A Prospective Observational Study of the Clinico-Demographic Characteristics of Patients Attending the Covid-19 Screening Clinic in a Tertiary Care Hospital in South India During the Omicron Predominance Period

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Abstract

Background: The COVID-19 pandemic has become a global general healthcare emergency, affecting healthcare facilities. It's indeed essential to analyse the epidemiology and clinical traits of people presenting as fever, a prominent sign of COVID-19, in various global locations. Our report concentrated on the clinical history of individuals experiencing fever who presented to a Covid-19 screening clinic at a clinical facility in southern India.

Methods: From December 27, 2021 to January 3, 2022, the patient characteristics and clinical presentation of all adult patients attending the Covid-19 screening clinic at a tertiary hospital in Tamil Nadu, South India, were analysed. The patients got treated in accordance with the consensus method of the institute and the criteria of the Indian Council of Medical Research.

Results: Throughout the research period, 77 patients visited the screening clinic. The mean age of the participants was 26.78 ± 13.89 years (range 12-70 years). There were 44 (57.14 %) males and 33 (42.86%) females. The common presenting complaints were fever (n=56; 72.7%), rhinitis (n=24; 31.2%), cough (n=18; 23.4%), and shortness of breath (n=02; 2.6%). The median time of presentation after symptom onset was 2 days (0-9 days). One patient presented with hypoxia (SpO2<94%) and had tachypnoea (RR >24). Non respiratory symptoms like body ache (n=25; 32.5%) and gastrointestinal symptoms (n=04; 5.2%) were also observed. Thirty-four patients (29.8%) had a comorbid ailment. Sixty two (80.1%) patients were fully vaccinated, nine (11.7 %) were partially vaccinated and three (3.9%) were unvaccinated. Thirty eight patients (49.4%) had prior contact with Covid-19 affected persons. Four patients (5.2) reported with a positive RTPCR result from elsewhere and thirty seven patients (48.1 %) were found to be Covid-19 RTPCR positive after investigations. Admission to the ICU was not immediately required in any of the patients.

Conclusion: Majority of the patients presenting to fever OP in our hospital were young. Fever was the predominant symptom which made people suspicious of Covid-19 infection, Respiratory systems were common in patients diagnosed with Covid-19. Patients with comorbidities who presented with these symptoms were more likely to become RTPCR-positive.

Keywords: SARS-Cov-2**,** Covid-19 disease**,** Covid Pandemic**,** Omicron, Third wave

INTRODUCTION

As of December 29, 2021 , the World Health Organization (WHO) recorded over 281 million confirmed cases of SARS-CoV-2 infections and greater than 5 million deaths globally , with India accounting for more more than 34 million patients diagnosed and more than 485 592 deaths.[(1),(2)] Others with SARS-CoV-2 infection develop respiratory distress syndrome (ARDS), multi-organ dysfunction syndrome (MODS), and death fairly fast. [(3)] Mutations have occurred in the SARS-CoV-2 spike protein, which have been documented. [(4)] The latest variant is Omicron, which was classified as variant of concern on November 26, 2021 by the WHO's Technical Advisory Group on Virus Evolution (TAG-VE). [(5)] The new variant has been reported in several countries and 1431 cases in India as of January 1, 2022. Since then most of the countries including India saw an unprecedented rise in the number of Covid cases including Omicron. 255874 new cases were reported in India on a single day as on January 22, 2022. However, the new cases gradually started declining and as of February 67084 new cases were only being reported on a single day. [(2)]

Given the rarity and global diversity of the condition, especially in China and India, it is critical to establish the clinical and epidemiological features of individuals presenting to fever clinics with symptoms suspicious with Covid-19. The report analyzes the demography, symptoms, concomitant diseases, history of contact with a Covid-19 confirmed case,

vaccination status, and diagnosis of Covid-19 in individuals presenting at fever clinic of a designated Covid facility in southern India.

MATERIALS AND METHODS

The study was performed at a teaching hospital that is a Covid facility in the Chengelpet district of Tamil Nadu, India, from December 27, 2021 to January 2, 2022. This hospital caters to the population of district of chengelpet and south Chennai and provides regular outpatient services to more than 2000 patients per day and in patient services to 1500 patients. The study was reported as per statements of Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guidelines. All the patients presenting to the fever clinic were included in the study. This included both the RTPCR confirmed Covid-19 patients as well as the patients with and without symptoms presenting for evaluation at the screening clinic. This research was permitted by the institution's committee on ethics. Participants in our study were enrolled after they provided consent for participation. Data was entered in the case report form.

The Covid-19 screening clinic was set up in the hospital in March 2020 during the first wave of Covid-19 disease with the aim to screen patients with symptoms suspicious of Covid-19. The clinic had screened more than one lakh people till date.

Those symptomatic as well as asymptomatic patients waiting for RTPCR results were admitted in protem ward, confirmed cases of Covid-19 were shifted to Covid ward. No critically ill patient presented during the study period. Throat and nasopharyngeal swabs were collected using standard techniques.

Statistical analysis was carried using vSPSS 21.0. Using measures of central tendency, the quantitative data including age and weight were estimated (mean). As percentages, qualitative variables were presented.

RESULTS

Seventy seven patients presented to the fever clinic during the period of study. The participant's baseline demographic features are described in Table 1. Participant's median age 26.78 ± 13.89 years (range 12-70 years). There were 44 (57.14 %) males and 33 (42.86%) females. The vaccination status of the patients is depicted in figure 1. Fifty three (68.9 %) patients were fully vaccinated, nine (11.7 %) were partially vaccinated and fifteen (19.5 %) were unvaccinated.

Table1: Demographic details of the study population

Parameter	**n (%) (N=77)**
Age	
Less than 18	11 (14.3)
18- 59	63 (81.8)
60 and above	3 (3.9%)
Sex	
Male	44 (57.14 %)
Female	33 (42.86%) females
Known contact with Covid-19 positive patient	38 (49.4%)

Fig 1: Vaccination status in patients presenting to Covid-19 screening clinic

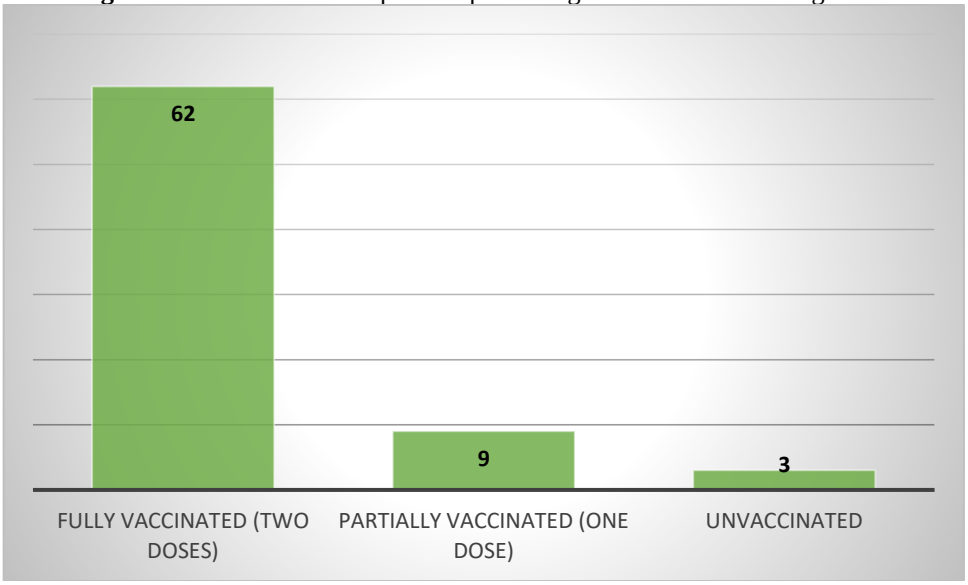


Table 2 depicts the common presenting symptoms of the patients in the Covid-19 screening clinic. The common presenting complaints were fever (n=56; 72.7%), rhinitis (n=24; 31.2%), cough (n=18; 23.4%), and shortness of breath (n=02; 2.6%). The median duration of presentation after symptom onset was 2 days (0-9 days). One of patient presented with hypoxia (SpO2<94%) as well as tachypnoea (RR >24). Non respiratory symptoms like body ache (n=25; 32.5%) and

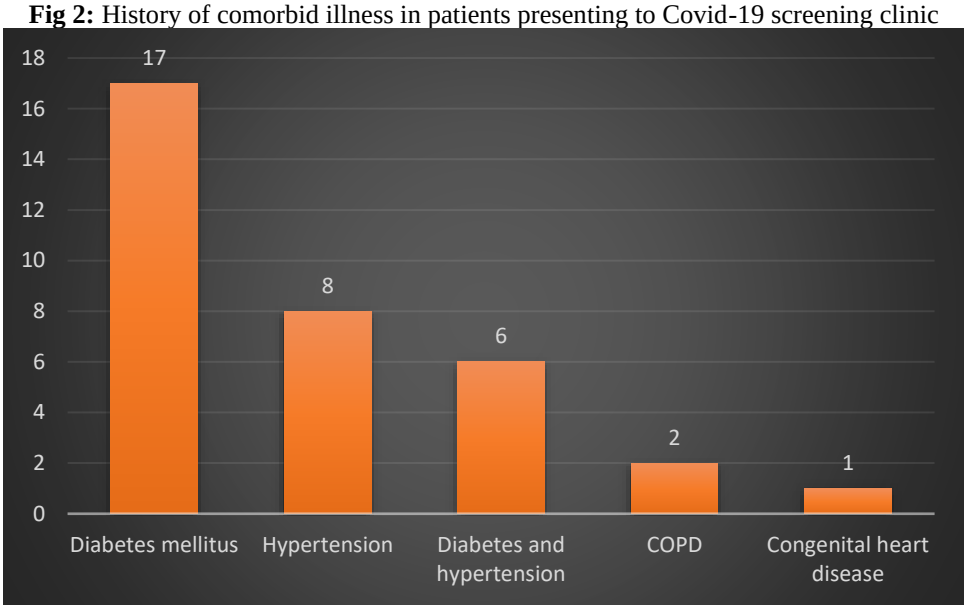
gastrointestinal symptoms (n=04; 5.2%) were also observed. Six patients (7.8%) were asymptomatic, who presented with history of close contact with a Covid positive patient. Thirty eight patients (49.4%) reported close contact with Covid-19 patients.

Table 2: Symptoms on presentation to Covid-19 screening clinic

Symptoms	n (%)
Respiratory symptoms	
Fever	n=56; 72.7%
Rhinitis	n=24; 31.2%
Cough	n=18; 23.4%
shortness of breath	n=02; 2.6%
hypoxia and tachypnoea	n=1; 1.29 %
Non-Respiratory symptoms	
Body ache	n=25; 32.5%
Gastrointestinal symptoms	n=04; 5.2%

The details of the comorbid illness of the patients is depicted in figure2. Thirty-four patients (29.8%) had history of comorbid ailment/s.

Fig 2: History of comorbid illness in patients presenting to Covid-19 screening clinic



Out of the 77 participants enrolled in the study, 60 patients were evaluated for Covid-19 through RTPCR testing and thirty seven patients (48.1 %) were found to be Covid positive and managed accordingly. Four patients (5.2 %) reported with a positive RTPCR result from elsewhere. The symptoms of RTPCR confirmed Covid positive and negative patients has been described in table 3.

Table 3: Symptoms of participants with and without RTPCR confirmed Covid-19 disease

Symptoms	Covid positive n (%) (N=41)	Covid negative n (%) (N=23)
Respiratory symptoms		
Fever	n=36; 87.9%	n=14; 72.7%
Rhinitis	n=10; 24.4%	n=08; 31.2%
Cough	n=05; 12.2%	n=10; 23.4%
shortness of breath	n=02; 4.9%	n=0
hypoxia and tachypnoea	n=1; 2.4 %	n=0
Non-Respiratory symptoms		
Body ache	n=20; 48.8%	n=03; 13.1%
Gastrointestinal symptoms	n=01; 2.4 %	n=01; 4.3%

Nasopharyngeal swabs of thirteen patients were not sent for investigation as they did not have symptoms suggestive of Covid-19. Intensive Care Unit admission was not immediately required for any of the patients.

DISCUSSION

The objective of this analysis was to comprehensively evaluate the demographic and clinical picture of patients presenting to the Covid-19 screening clinic to give an understanding for the physicians regarding the clinical picture of Covid-19 in the third wave. In this prospective study from Dec 28 2021 to January 3 2022, seventy seven patients reported to the Covid-19 screening clinic with symptoms suggestive of Covid-19 disease. This period corresponded to the early days of third wave of Covid-19 in India. The majority of the patients reported to the clinic were in the young, in the age group of 18 to 59 years. The mean age of the participant was 26.78 ± 13.89. It was observed that while the first wave of Covid in 2020 mainly affected the elderly population, the mean age of affected individuals in second wave was lower than the first wave. [(6)] A shift of infection trend towards younger individuals during the Omicron wave was also noted by the state wide registry study in a state in central India [(7)] as well as in other parts of the world. [(8)] Goldstein et al observed that the young individuals have high risk of contracting SARS-Cov Infection. [(9)]The major clinical presentations were fever and respiratory symptoms like rhinitis and cough and sore throat. This was consistent with studies reported from other parts of the globe as well as India during the previous waves of Covid. [(10)(11)(12)] Non respiratory symptoms like body ache were also predominant among the participants. [(11)] Only very few patients presented with dyspnea and tachypnea to our hospital as most of the cases reported during the period were mild. Similar observations were made by Penni et al during the omicron infection in the United Kingdom, with less infliction of lower airway tract and lower chances of hospitalization. [(13)] In accordance with the guidelines of the Ministry of Health and Family Welfare, Government of India (MOHFW) at the time, the majority of participants had received two doses of the vaccine.

Our study was supportive for the previously established evidence that people with comorbidities have a higher risk of contracting Covid infection [(14)(15)] which in turn mandates caution in such patients.

Our analysis reveals that only few asymptomatic cases reported close contact with Covid- patient. Hence it is imperative that asymptomatic patients should be screened in the community to contain the spread of infection.

The study period coincided with the onset of the third Omicron variant of Covid-19 infection wave in India. It was evident that the severity of infection as well as the presenting complaints were slightly different from the first and second waves. The results of this study reveal that the clinical characteristics of Omicron infection are distinct from those of the SARS-CoV-2 variant delta. The importance in documenting these findings in the literature prompted us to conduct this investigation.

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ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee of SRM MCH&RC.

CONFLICT OF INTEREST

The authors declare that there no conflicts of interest with any item published in this article.

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