ISSN: 2091-2749 (Print)
2091-2757 (Online)

Clinical characteristics of suspected COVID-19 admitted to the isolation ward of Patan Hospital, Nepal

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Abstract

Introduction: Understanding clinical characteristics of patient is important to plan human resource and logistics. Moreover, this gives understanding of pattern of disease. This study aim to find the clinical characteristics observed in patients with suspected COVID-19 admitted at Patan Hospital.

Method: This is cross sectional descriptive study conducted at Patan Hospital, Patan Academy of Health Sciences, Nepal, on April 2020. Suspected COVID-19 patient admitted from January 25 to April 20, 2020 is taken for the study. Record files were retrieved from record section and patient's age, gender, place of residence, travel history, duration of symptom onset, symptoms on admission like fever, cough, rhinorrnoea, sore throat, myalgia and shortness of breath was recorded. Signs on admission like temperature, pulse, blood pressure, respiratory rate and oxygen saturation were also recorded. Data were descriptive analyzed. Ethical approval was obtained.

Result: Total 40 suspected COVID-19 patients got admitted from 25 January to 20 April 2020. Of these admissions 25 (62.5%) were male, median age was 30 years, median days of return from abroad was 9 days, average duration of stay at hospital was 3.8 days. There were two COVID-19 positive patients who were asymptomatic.

Conclusion: Travel history and history of travel to the community inside the country where COVID-19 has been detected is important to suspect COVID-19.

Keyword: COVID-19, clinical characteristics, Nepal

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Submitted
24 Apr 2020

Accepted
28 Apr 2020

How to cite this article
Ashis Shrestha, Sumana Bajracharya. Clinical characteristics of suspected COVID-19 admitted to the isolation ward of Patan Hospital, Nepal. Journal of Patan Academy of Health Sciences. 2020Apr;7(1):7-12.

DOI:https://doi.org/10.3126/jpahs.v7i1.28844

Introduction

Coronavirus disease (COVID-19) which started from Wuhan, China on 31st December 2019 with its rapid spread, World Health Organization (WHO) has declared it global emergency.[1] Nepal has reported 31 positive cases of COVID-19.[2] Patan Hospital (PH), Patan academy of health sciences (PAHS) is one of the center for admitting patients with suspected and confirmed cases of COVID-19. Clinical characteristics of patient has been reported from other parts of world, however there is no such study published from Nepal as per Google Scholar, PubMed and WHO COVID-19 database.[3] So, clinical characteristics observed in patients admitted to PH will help to understand the characteristics of disease seen in our population.

Method

This is a cross sectional descriptive study of suspected COVID-19 patients admitted to PH, PAHS, from January 25 to 20 April 2020. Suspected COVID-19 is defined as a patient with travel history to the country of community transmission presenting with fever and at least one sign/symptom of respiratory disease, e.g. cough, shortness of breath or a patient with any acute respiratory illness AND having been in contact with a confirmed or probable COVID-19 case (see definition of contact) in the last 14 days prior to symptom onset; or a patient with severe acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g. cough, shortness of breath; AND requiring hospitalization), AND in the absence of an alternative diagnosis that fully explains the clinical presentation.[4]

Patient's record file was retrieved from record section of PH and patient's age, gender, place of residence, travel history, duration of symptoms onset, symptoms on admission like fever, cough, rhinorrhea, sore throat, myalgia and shortness of breath were recorded. Signs on admission, like temperature, pulse, blood pressure, respiratory rate and oxygen saturation were also recorded. Mean and standard deviation (SD) was calculated for symmetrical data; median and interquartile range (IQR) was calculated for asymmetrical data. Patient's signs and symptoms were calculated in frequency and proportion. Status of reverse transcriptase - polymerase chain reaction (RT-PCR) of all patient was also evaluated.

Ethical approval was taken from institutional review committee of PAHS (IRC approval no. drs2004231364)

Result

Total 40 suspected COVID-19 patients got admitted from 25 January to 20 April 2020. Male were 25 (62.5%). Four patients were admitted on the basis of their contact history, three presented with severe acute respiratory infection (SARI), so total patients who returned from abroad were 33 (Adjusted). Duration of stay at hospital was 3.8 days however three patients stayed for 9 to 15 days due to alternative diagnosis (atrial fibrillation with fast ventricular rate with pneumonia, community acquired pneumonia, myocardial infraction, pulmonary tuberculosis). So, adjusted duration of stay was calculated after removing these four patients. Similarly, adjusted duration of symptom was calculated after removing three patients who were asymptomatic. Asymptomatic were admitted as their rapid diagnostic test was positive, Table 1. There was one mortality in a suspected COVID patient due to pulmonary oedema secondary to chronic kidney disease (CKD) who also had multiple other comorbidities. This patient was tested negative with polymerase chain reaction (PCR).

Patients from within Kathmandu valley came on their own as this hospital is situated in Lalitpur and easily accessible. Patients from outside valley (Baglung, Nuwakot, Ramechap and Salyan) were referred from Kathmandu international airport as they had fever upon

Table 1. Demography of suspected COVID-19 patients admitted in isolation ward of Patan Hospital, N=40

Gender	Male: 25 (62.5%)	Female: 15 (37.5%)
Age (n=40)	Median: 30 years	IQR: 24-49 years
Male (n=40)	Median age: 29 years	IQR: 24-44 years
Female (n=40)	Median age: 35 years	IQR: 25-50 years
Returned from abroad (n=33)	Median: 9 days	IQR: 4-16.5 days
Average hospital stay (n=40)	Mean: 3.8 days	SD 3.69 days
Adjusted hospital stay (n=36)	Mean: 2.6 days	SD 1.8 days
Duration of symptom onset (n=40)	Mean: 4.7 days	SD 5.4 days
Adjusted duration of symptom (N=37)	Mean: 3.7 days	SD 2.8 days

Table 2. Residence of suspected COVID-19 patient admitted to isolation ward of Patan Hospital, N=40

Place of residence	Frequency	%
Kathmandu	12	30
Lalitpur	12	30
Dhading	2	5
India	2	5
Jhapa	2	5
Baglung	1	2.5
Bhaktapur	1	2.5
Dang	1	2.5
Hetauda	1	2.5
Janakpur	1	2.5
Kailali	1	2.5
Mexico	1	2.5
Nuwakot	1	2.5
Ramechap	1	2.5
Salyan	1	2.5

Table 3. Country last visited by the suspected COVID-19 patient admitted to isolation ward of Patan Hospital, N=33

Returned from	Frequency	%
India	11	33.3
Dubai	7	21.2
Australia	3	9.1
United Kingdom	3	9.1
United states of America	2	6.1
Hongkong	1	3.0
Kuwait	1	3.0
Malaysia	1	3.0
Mexico	1	3.0
Oman	1	3.0
Portugal	1	3.0
Qatar	1	3.0

Table 4. Symptoms on admission of suspected COVID-19 patient admitted to isolation ward of Patan Hospital, N=37

Symptom	Frequency	%
Fever	32	86.5
Cough	24	64.8
Sore throat	12	32.4
Shortness of breath	9	24.3
Rhinorrhoea	7	18.9
Myalgia	4	10.8

Table 5. Symptoms on admission of suspected COVID-19 patient admitted to isolation ward of Patan Hospital, N=40

Signs	Average	SD
Temperature	98.6 ° C	1.59° C
Pulse	91.7 beats per minute	12.4 beats per minute
Systolic blood pressure	120.2 mmHg	14.0 mmHg
Diastolic blood pressure	78.6 mmHg	9.5 mmHg
Respiratory rate	21.7 per minute	3.9 per minute
Oxygen saturation (Pulse oximeter)	95.7%	2.9%

disembarkation. Remaining patients were referred from different health care centers, Table 2. India was the place of last visit for 11 (33.3%) of the patient admitted to PAHS

Four patients were referred to this center as their rapid diagnostic test done through combined IgM and IgG kit was positive. Out these four patients, one patient whose clinical presentation was suggestive of tuberculosis (weight loss, unilateral pleural effusion, high ESR) was negative on RT-PCR. Out of rest three RDT positive patients, one was negative on RT-PCR and two (5%) were positive. Out of 37 symptomatic patients, common presenting symptom was fever 32 (86.5%), Table 4, however they were mostly afebrile during admission, Table 5.

The most common discharge diagnosis of the symptomatic patient was influenza like illness (ILI) 22 (55%), 7 (17.5%) had community acquired pneumonia, 3 (7.5%) viral fever, 3 (7.5%) COVID-19, 2 (5%) tuberculosis, 1 influenza A (2.5%), 1 (2.5%) myocardial infraction and 1 (2.5%) chronic kidney disease with pulmonary oedema. One of the patient whose discharge diagnosis was pneumonia had atrial fibrillation with fast ventricular rate and mitral stenosis (Rheumatic heart disease).

Discussion

Among 40 patients admitted to COVID-19 isolation ward, only 2 (5%) tested positive and rest 95% tested negative. Both of the positive cases were asymptomatic. As of present situation, Nepal has cluster of cases, no community transmission is reported.[5] Total 9153 test has been done in the community and hospital out of which 48 positive patients were either asymptomatic or had mild symptoms, nine patients have recovered.[6] A surveillance released by China CDC as of February 11, 2020 shows that 72,314 individuals were diagnosed with COVID-19. Among them, 44,672 (61.8%) were confirmed, 16,186 (22.4%) suspected, 10,567 (14.6%) were clinically diagnosed, and 889 cases (1.2%) were asymptomatic.[7] Asymptomatic cases have been reported in up to 5%.[8] So, as Nepal is in the phase of sporadic transmission, history of travel to the country of community transmission is very important. In the present context of asymptomatic to mild cases, travel history is very important. However, if we move to community transmission, having stayed and travelling in the community with transmission becomes important to suspect COVID-19.

In this database, male (62.5%) was more than female. Median age of patient was 30 years, male 29 years and female 35 years. A study published from China[9] evaluating clinical characteristics of suspected or confirmed cases showed female predominance (72.9%) contradicting our findings, however mean age of was 39.08 years, similar to our study. Both of these studies have analyzed confirmed and suspected cases; however, studies analyzing clinical characteristics suggests male predominance with average age ranging from 45 to 56 years.[10-13]

Four patients were admitted on the basis of their contact history, out of this one patient had contact history with asymptomatic family member who recently returned from India. The patient did not meet criteria of contact but since she presented in SARI, she was admitted to isolation. This patient was admitted due to the possibility of

asymptomatic carrier. A clinical investigation of 24 asymptomatic infections in China showed a transmission to the cohabiting family members, which even caused severe COVID-19 pneumonia. Overall, the asymptomatic carriers identified from close contacts were prone to be mildly ill during hospitalization. The communicable period could be up to three weeks and the communicated patients could develop severe illness.[14]

Median adjusted duration of stay at hospital was 2.6 days. Once patient was admitted to hospital, their nasopharyngeal and throat swabs were sent for RT PCR. The duration of hospital stay was the waiting time for the reports. Once patient tested negative, they were discharged with and advice of home quarantine for test negative patient. Two patient who were tested positive were discharged upon two consecutively negative test done 24 hours apart.

The most common presenting symptoms were fever (86.5%) and cough (64.5%). This correlates with the common discharge diagnosis of ILI (55%). As fever and cough are most common presenting symptoms of COVID-19,[10] it was necessary to admit and investigate these patients. On average vitals of our patients were stable on admission. There was however one mortality due to pulmonary oedema secondary to CKD in a patient who also had multiple other comorbidities.

Conclusion

This result highlights the importance of detecting asymptomatic carriers who can potentially be missed as they do not fit in case definition of suspect. Travel history endemic country and history of travel to the COVID-19 detected community inside the country are important to suspect COVID-19.

Acknowledgement

None

Conflict of Interest

None

Funding

None

Author Contribution

All authors made substantial intellectual contributions to the study.

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