Internal Medicine Section

Clinical Profile of nCOVID-19 Cases in Andaman and Nicobar Islands: A Case Series

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ABSTRACT

nCOVID-19 (2019 novel corona virus) is a naive infective virus that brought the whole world to standstill. The clinical features attributing to its infection have a broad spectrum, ranging from minimally symptomatic to respiratory failure and death. The aim of present case series was to assimilate data regarding the clinical characteristics of first 11 cases of COVID-19 infection in the local population of Andaman and Nicobar Islands. Various clinical features, biochemical and individual parameters were compiled that may affect the disease evolution and then, subjected to descriptive analysis. Out of 11 patients, six patients had a definitive known source of their infection and four patients had history of close contacts with first six ones. Only one patient had unknown source of the infection. Majority of the patients remained asymptomatic to pauci-symptomatic. Mean duration of symptomatic period was less than seven days (5.6 days). In this series, out of 11 patients, 2 (18%) were females and rest all were males (82%). Four of the patients had fever, four had cough and four had weakness and fatigue, two had malaise, three had anorexia, one had dyspepsia and one diarrhea. None of the patient landed in Intensive care unit (ICU). Patients were treated with empirical combination therapy including Azithromycin (500 mg OD) and Oseltamivir (75 mg BD) irrespective of their symptoms. Additionally, Hydroxychloroquine (200 mg BD) was given to symptomatic ones. Conclusively, less dreadful clinical presentation of this infection was faced in this population.

INTRODUCTION

Initiated in December 2019 as a cluster of acute respiratory illness in densely populated Wuhan, China [1,2], is now spreading as nothing less than a pandemic affecting 182 countries- this novel coronavirus is now shouldered as one of the biggest threats to humanity. Although, much similarities have been noted as compared with human Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS); full genome sequencing suggested nCoV-19 for having a different makeup hence, to be classified under beta coronavirus 2b lineage [3]. Owning to its close similarity with bat coronavirus, bats were considered as a primary source; however, further research is needed.

An observational series was compiled including first 11 COVID-19 positive patients initially admitted in the facility. The general objective in highlighting this case series was to describe the clinical spectrum of COVID-19 positive patients and thus aiming to augment these data with a broad array of new information on this virus-disease saga. Also, creating an awareness relating to how effective governance and timely implementation of streamlined clinical practices leads to attenuation of impending havoc that could have occurred anywhere in this resource deprived setup.

CASE SERIES

Once filled, the requisite data in forms prescribed by surveillance and monitoring team, throat samples were obtained under all precautionary measures. Samples were transported in Virus Transport Medium (VTM). In the testing laboratory, after centrifugation, the suspension was subjected to real-time Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) assay of 2019 nCoV RNA. After doing the screening assay using target gene E, samples were then subjected to confirmatory assay using RdRp (RNA dependent RNA polymerase) gene and ORF (Open Reading Frame) gene as targets. A predefined Cycle Threshold

Clinical samples			RT-PCR targets			
	Nature of sample	Day post symptom onset	E gene14 (Cycle threshold)	RdRp14 (Cycle threshold)	ORF gene (Cycle threshold)	Results
Patient 1	Nasopharyngeal + oropharyngeal	02	19	24	22	Positive
Patient 2	Nasopharyngeal + oropharyngeal	02	29	-	31	Positive
Patient 3	Nasopharyngeal + oropharyngeal	Asymptomatic (at presentation)	20	25	23	Positive
Patient 4	Nasopharyngeal + oropharyngeal	Asymptomatic	21	26	24	Positive
Patient 5	Nasopharyngeal + oropharyngeal	Asymptomatic	26	31	29	Positive
Patient 6	Nasopharyngeal + oropharyngeal	01	19	24	21	Positive
Patient 7	Nasopharyngeal + oropharyngeal	01	25	28	25	Positive
Patient 8	Nasopharyngeal + oropharyngeal	Asymptomatic	28	31	29	Positive
Patient 9	Nasopharyngeal + oropharyngeal	Asymptomatic	28	31	30	Positive
Patient 10	Nasopharyngeal + oropharyngeal	Asymptomatic	28	31	30	Positive
Patient 11	Nasopharyngeal + oropharyngeal	01 (cough)	28	32	32	Positive

[Table/Fig-1]: Confirmation of COVID-19 by RT-PCR and virus isolation.
RT: PCR- Reverse Transcriptase Polymerase Chain Reaction; RdRp: RNA dependent RNA polymerase; ORF: Open Reading Frame

(CT) value was used to categorise the test results as positive or negative [Table/Fig-1]. In addition, to increase the sensitivity of the testing, samples were collected from both nasopharynx as well oropharynx areas of each patient. Method of pool-testing was also used in surveillance studies.

This case-series was conducted to assess the clinical spectrum among COVID-19 positive patients. First 11 COVID positive patients were included over a period of 25 days. The participatory population included patients who turned out nCOVID-19 positive, using the RT-PCR test with the sample obtained from nasopharynx/oropharynx. In this series, 4 such patients were found to have co-morbidities. An individual informed verbal consent was obtained from all the study participants after explaining them the purpose, participatory features and confidentiality of the data they provided. Clinical status as well the outcome (i.e., discharges, mortality, duration of hospital/ ICU stay) was followed till the final date of follow-up. A detailed travel history of patients travelling abroad or small endemic regions with high prevalence of COVID or history of attending a mass gathering were emphasised. Patients were then evaluated with biochemical investigations, chest X-ray, electrocardiogram and some additional investigations like C Reactive Protein (CRP), Procalcitonin (PCT) levels. Treatment measures given were noted in predefined formats. The day of disease onset was defined as the day when symptoms were first noticed or if asymptomatic, days were counted starting from the day of hospital admission.

Out of total 11 patients in this case-series, six patients had a definitive history of travel from Delhi to Port Blair. Where, they all attended a mass gathering including some international travellers. Later, about 10 days after their arrival at Port Blair, various news agencies including Press Trust of India (PTI) confirmed that approximately 30-40% of total corona cases in Delhi sourced out from the same gathering.

First six cases arrived here via boarding the same flight on 24th March'20. By that time, screening of all travellers landing at Port Blair were initiated using thermal scanning and self-declaration forms. First two cases declared themselves their ill-being. Later, both turned out positive, thus igniting the spark of corona positivity in this
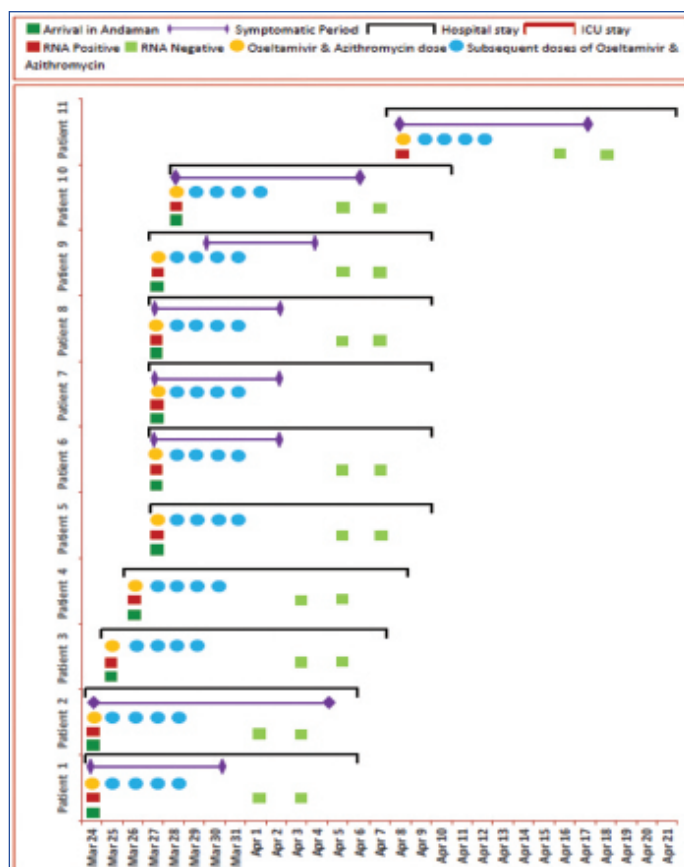
[Table/Fig-2]: Schematic description of 11 cases of COVID-19.

Island group. After these two positive cases, active case findings and contact tracings were initiated. Persons who arrived together in the same flight were actively traced and subjected to testing. The details of individual patients including demography, sourcing, clinical as well biochemical parameters have been described in [Table/Fig-2,3].

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7	Patient 8	Patient 9	Patient 10	Patient 11
Age at diagnosis, years	50	53	54	23	24	54	62	44	47	53	22
Sex (M/F)	Male	Male	Male	Male	Male	Male	Male	Male	Male	Female	Female
Exposure and setting • Gathering known/ confirmed contact • Unknown gathering/ possible contact • Hospital environment/ HCW	Yes No No	Yes No No	Yes No No	Yes No No	Yes No No	Yes No No	Yes No No	Yes No No	Yes No No	Yes No No	No Yes No
History of chronic medical/ surgical condition	No	Yes	No	No	No	Yes	Yes	No	No	Yes	No
Total duration of symptoms/signs (in days)	07	12	00	00	00	07	07	07	06	10	10
Diagnosis date	24th March 2020	24th March 2020	25th March 2020	26th March 2020	27th March 2020	27th March 2020	27th March 2020	27th March 2020	27th March 2020	28th March 2020	08th April 2020
Symptoms	Fever, cough, anorexia, myalgia	Anorexia, myalgia	None	None	None	Fever, fatigue, cough, altered smell	Fever, fatigue, cough, dyspnea	Fever, fatigue	Myalgia, diarrhea	Anorexia, myalgia	Cough, anorexia, myalgia
Test results on hospital admission											
White blood cell count, (10^9 cells per L)	10080	5340	4960	6700	8740	7510	6610	5280	6900	8630	10540
Neutrophil count, (10^9 cells per L)	58	49	55	67	52	69	45	60	55	67	56
Lymphocyte count, (10^9 cells per L)	20	42	31	28	38	23	43	31	33	27	34
Monocyte	3	2	4	5	3	3	2	2	4	4	3
Haemoglobin (g/L)	12.6	13.2	10.6	11.0	12.6	11.5	13.3	11.6	13.6	11.5	12.4
Platelet count (10^9 per L)	2.55	3.9	1.08	1.98	1.26	1.91	1.02	2.09	1.44	2.41	1.85

Prothrombin time, seconds	1.4	1.1	0.8	0.9	1	1.22	1.31	1.4	1	1.2	1.1
Procalcitronin (ng/mL)	0.8	0.2	0.5	0.6	0.2	1	0.9	0.6	0.2	0.5	0.1
Alanine aminotransferase (UI/L)	13	39	45	18	27	21	16	30	17	14	15
Aspartate aminotransferase (U/L)	27	60	90	29	123	153	82	95	34	48	20
Total bilirubin, (mg/dL)	0.6	0.5	1.1	0.6	0.6	0.4	0.7	0.3	1	0.7	0.4
Creatinine, (mg/dL)	1	0.9	0.8	0.9	0.7	0.8	1	0.8	0.8	0.8	1.1
C-reactive protein, (mg/L)	21.04	9	7.8	5.5	11	17	15	11	6	4	5
SpO2 %	94	98	99	98	98	97	93	94	98	97	96
Chest x-ray finding											
Old changes (fibrotic)	Yes	No	No	No	No	No	Yes	No	No	No	No
Active infection	Yes	No	No	No	No	Yes	No	Yes	No	No	No
Typical B/L ground glass/ patchy	No	No	No	No	No	No	No	No	No	No	No
Admission to intensive care unit	No	No	No	No	No	No	No	No	No	No	No

[Table/Fig-3]: Main characteristics of patients at hospital admission.
HCW: Health care worker; B/L: Bilateral

Characteristic	Patients (N=11)
Mean age (range)	51.5 year (23-62)
Sex-N (%)	
Male	9 (82)
Female	2 (18)
Co-existing disorder-no. (%)	
Hypertension	3 (27.3)
Diabetes mellitus	2 (18.2)
Cardiovascular disease	1 (9.09)
Hypothyroidism	1 (9.09)
Chronic obstructive pulmonary disease	1 (9.09)
Malignancy	0
HIV/immunocompromised	0
Chronic kidney disease	0
Chronic liver disease	0
Symptoms-no. (%)	
Fever (degree celcius)	4 (36.4)
Fatigue	4 (36.4)
Cough	4 (36.4)
Anorexia	3 (27.3)
Myalgia	2 (18.2)
Dyspnea	1 (9.09)
Diarrhea	01 (9.09)
Vomiting	0
Altered smell	01 (9.09)
History of travel and contacts-no. (%)	
Travel to country where Covid-19 is endemic/attended mass gathering in the same country with international travellers	6 (54.54)
Known positive contact	4 (36.36)
Unknown	1 (9.09)
Vital signs, on admission (mean values)	
Heart rate (beats per minute)	88 (78-98)
Respiratory rate (breaths per minute)	20 (19-21)
Mean blood pressure (mmHg)	93 (87-100)

[Table/Fig-4]: Clinical characteristics of the patients at baseline.

In this series, 11 patients were included, out of whom 2 (18%) were females and rest all were males (82%). Mean age of all participants was 51.5 years (range 23-62). About 54.54% of patients were having a definite history of attending some mass gathering and hence, known COVID contact [Table/Fig-4]. When the biochemical tests were done, none had increased Total Leucocyte Count and Lymphocyte count and remained in normal range. However, a few cases were having thrombocytopenia. Kidney and Liver function tests remained in normal range. PCT and CRP levels were also elevated in those having fever as presenting symptom [Table/Fig-3].

DISCUSSION

Andaman and Nicobar Group, an Island and Union Territory under the Government of India, situated distantly at 2480 kilometres from Delhi, inhabiting a population of 3.81 lacs, also got affected by the pandemic. Be it the distance or the unavailability of land route connection with the mainland territory of India; lack of sufficient resources always tops the overall social concern [4]. GB Pant Hospital, a government owned public institution, situated at the capital city-Port Blair is the highest health care providing facility accessible and available to serve the whole Island. In this case series of 11 patients, two different clinical patterns of COVID infection-illness spectrum were seen: first, mild cases, who remained pauci-symptomatic at presentation and became asymptomatic well within first seven days of hospital management; second, those who remained absolutely asymptomatic throughout. Till the time data was being collected, all 11 patients have been discharged from the hospital after keeping them in-ward care for 12-14 days. After discharge, all these patients were scheduled to stay in institutional (hotel) quarantine again for next 14 days, to rule out re-emergence or late complications of the infection. It was planned to send them back home, only after getting their reports negative at day 28. However, none of the patient found positive or developed any symptoms after this period as well.

Individual patients were discharged from hospital once they fulfilled the criteria of two sequential negative samples, done 24 hours apart. In addition of being symptom-free, a widely accepted protocol was followed of repeating the sample of positive patients first at day 5 or 7 and then, at day 14, if not negative. In case 2nd sample came negative at day 7, we repeated the 3rd sample 24 hours later. The European Centre for Disease Prevention and Control also recommends obtaining two RT-PCR negative nasopharyngeal samples before discharge of asymptomatic patients [5]. In this case series; all patients were negative by day 7. Considering the present case series, it is evident that except the first two patients who were having symptoms days before enquired, all others were diagnosed at very initial stages of their illness. That may be the reason of majority being asymptomatic. This also highlights the enthusiastic role done by surveillance teams formulated by local

administration. One of patient had gastrointestinal symptoms, earmarking the importance of assessing viral load in stool samples too; however, this was not opted considering the limited resources available here. The author already know that detection of virus RNA in stools and other secretions doesn't necessarily imply the originating infectious particle [6]. Majority of symptomatic patients in this study had a median symptomatic period of 4-5 days, less than median disease duration of 8.0 days, as reported by Huang C et al and collaborators [7]. As none of the patients deteriorated or had hypoxic respiratory failure; CT scan was not opted to look for various disease specific changes like ground-glass opacities, etc. as reported by others [6,8]. In this study, three patients developed new chest x-ray changes, one of them having past history of Chronic Obstructive Pulmonary Disease (COPD), other one with some fibrotic changes indicative of past infective aetiology. The study subjects had a very wide range of their ages (~40 years); hence, this series is unable to strongly comment on disease severity and old age with co-morbidities relationship, as reported in various previous studies [9]. Among various promising treatment options available, a generalised protocol was followed of giving empirical Azithromycin and Oseltamivir to all asymptomatic patients for five days, unless contraindicated. In symptomatic patients, additionally, treated with Hydroxychloroquine till symptoms lasted [10]. With this series; the authors are unable to draw any specific conclusion regarding the treatment option for severe disease or with respiratory failure, as none of the patient landed in ICU. Till the data being compiled, all 11 patients have been declared negative and treated, with no loss. This least dreadful clinical pattern of COVID-19 here brought our attention to few hypotheses like asymptomatic carriers, evolving herd immunity or a strain with a different genome with less virulence. It is also possible probably due to the decreased mean age of the infected patients in this series. Additionally, it can attribute about the less severe picture occurring here to the BCG vaccine, as most of the patients were already vaccinated under National Immunisation Programme; evident in few analyses [11,12] published recently.

CONCLUSION(S)

With this case series, the authors intend to highlight some specifics pertaining to Andaman and Nicobar Islands. First, the timely implementation of complete lockdown by the local authorities, even two days before the nationwide lockdown; attributed in attenuating the spread and thus decreasing the epidemiologic burden. It was an absolute lockdown here with ruthless implementation, bringing down all types of civilian movement to standstill except those in essential services. Special travel passes were issued to the essential service providers. Second, the initiation of self-declaration process and thermal screening of all the arrivals at the airport were initiated approximately one week prior to the declaration of nationwide shutting down of all domestic flights. The authors are hopeful for more detailed clinical and epidemiologic studies on this pandemic causing agent.

Declaration: By the time this article will publish, there will be more number of cases as cases are continually increasing. The idea is that in future the authors will further compile data of the cases, if anything new and distinct was observed.

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