Original Research Article

Clinico-Sociodemographic profile of COVID-19 Patients admitted to a Dedicated Covid Hospital of Raigarh, Chhattisgarh, India

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Abstract

Introduction: COVID-19 is a pandemic with over 100 million cases worldwide & 11 million cases in India. This disease has imposed a huge burden on health resources. Evaluation of clinical and sociodemographic profiles of such patients can help in understanding and managing the outbreak more efficiently. **Objective:** To describe the sociodemographic characteristics & clinical profiles of Covid-19 infected patients admitted to a dedicated covid hospital, Raigarh (CG) from November 2020 to January 2021.**Methods:** This study is a cross sectional retrospective observational analysis of diagnosed Covid-19 patients admitted to a dedicated covid hospital, Raigarh (CG) from November 2020 to January 2021. The methodology comprises of data collection among all discharged patients in 3 months through telephone in a predesigned pre tested proforma which includes sociodemographic characteristics & clinical profile. **Results:** 390 patients with Covid-19 who had an average age of 34.2±9.4 years were included with slight male preponderance (68%). Nearly half (53%) of these cases were from the urban area, around (37%) came under lower middle socioeconomic class and 21% were doing health-care related jobs. The most common suspected contact was due to interstate travel (59%). Of all, 86% of patients were symptomatic and presented with fever (73%), followed by myalgia (62%) & cough (48%). Hypertension being the most common (16.7%) co morbidity. The case fatality rate among the admitted cases was 9.4%. **Conclusion:** Patients were mostly middle aged, male, working & had history of interstate travel. Typical presentations were fever, cough, headache & breathlessness. Co morbidity was associated with bad prognosis.

Keywords: Clinico-Sociodemographic profile, COVID-19 Patients, Dedicated Covid Hospital.

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Introduction

Pneumonia of unknown cause detected in Wuhan China was first reported to the WHO country office on December 31, 2019. This outbreak was declared as a Public Health Emergency of International Concern on January 30, 2020. The World Health Organization (WHO) used the term Covid-19 to refer to acute respiratory infection caused by family of corona virus initially seen in Wuhan, China[1]. The clinical presentation of Covid-19 infection varies from asymptomatic illness to severe respiratory distress and shock[2-4]. Symptomatic cases present primarily with fever and respiratory symptoms such as cough and shortness of breath and are associated with dyspnea, headache, myalgia, rhinorrhea, sore throat, nausea, and vomiting in varying proportions[3-6].Covid-19 is a pandemic with over 100 million cases worldwide & 11 million cases in India. This disease has imposed a huge burden on health resources[7-9]. Evaluation of clinical and sociodemographic profiles of such patients can help in understanding and managing the outbreak more efficiently. This study is a cross sectional retrospective observational analysis of diagnosed Covid-19 patients admitted to a dedicated covid hospital, Raigarh (CG) from November 2020 to January 2021. All these patients were positive for Covid-19 by an oro-nasopharyngeal swab rtPCR/Rapid antigen based testing. The aim of this study is to describe the sociodemographic characteristics & clinical profiles of these Covid-19 infected patients in 3 months ranging from their age, sex, occupation, socioeconomic status, travel history, clinical symptoms, co morbidities, treatment provided along with common side effects and the final outcome.

Objective: To describe the sociodemographic characteristics & clinical profiles of Covid-19 infected patients admitted to a dedicated covid hospital, Raigarh (CG) from November 2020 to January 2021.

Material and Methods

This study is a cross sectional retrospective observational analysis of diagnosed Covid-19 patients admitted to a dedicated covid hospital, Raigarh (CG) from November 2020 to January 2021. All these patients were positive for Covid-19 by an oro-nasopharyngeal swab rtPCR/Rapid antigen based testing. Line listing of cases including contact number, address, date of admission & discharge were gathered from Institutional Head of Associated Medical College & Hospital. The methodology comprises of data collection among all discharged patients in 3 months from November 2020 to January 2021 (390) through telephone in a predesigned pretested proforma which includes socio demographic characteristics & clinical profile of these Covid-19 infected patients ranging from their age, sex, religion, caste, education, marital status, occupation, family type, socioeconomic status, travel history, clinical symptoms, co morbidities, treatment provided along with common side effects and the final outcome.

Sample Size – 390 (All admitted patients from November 2020 to January 2021)

Inclusion Criteria - All laboratory-confirmed cases who gave consent & who were discharged from dedicated covid hospital, Raigarh (CG) from November 2020 to January 2021. Data was

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collected from guardian preferably mother in case of child below 18 years.

Exclusion Criteria - Individuals who did not give consent & were unable to give response due to serious physical or mental illness and with whom communication was not possible have been excluded from the study.

Statistical analysis - Data was entered in Microsoft excel software, checked for its completeness, correctness & analyzed by using SPSS 21.0 version software. Descriptive statistical analysis was carried out in the present study. Results on categorical measurements were presented in numbers (%). Chi-square tests were used to find the significance of study parameters on categorical scale between two or more groups. P-value of <0.05 has been considered to be statistically significant.

Case definitions: We have followed the NCDC/ICMR guidelines for defining confirmed cases. This includes patients with acute respiratory illness, AND a history of travel to or residence in a country/area or territory reporting local transmission; a patient/ health-care worker with any acute respiratory illness AND having been in contact with a confirmed Covid-19 case in the last 14 days prior to onset of symptoms; all hospitalized patients with severe acute respiratory illness (fever and cough and/or shortness of breath); all asymptomatic direct and high-risk contacts of a confirmed case tested once between days 5 and day 14 of coming in his/her contact and a positive swab report; and a case for whom testing for Covid-19 is inconclusive. Socioeconomic class categorization was done by using modified BG Prasad classification 2020

Laboratory confirmed case - A person with laboratory confirmation by an oro-nasopharyngeal swab rtPCR/Rapid antigen based testing of Covid-19 infection, irrespective of clinical signs and symptoms.

Ethical consideration - The study was approved by the Institutional Ethics Committee with letter S. No./Med./Ethics Commi./2021/69, dated 24/03/2021. Prior informed verbal consent has been taken from the study subjects.

Result

Socio demographic Characteristics of Covid-19 Patients (n=390) : A total of 390 persons infected with Covid-19 & admitted to Dedicated Covid Hospital, Raigarh during November 2020 to January 2021, were included in this study. The mean age of the patients was 34.2±9.4 years. The majority of patients were aged 31-40 years (32%). Among all (68%) patients were male, and nearly half (53%) came from the urban area. The majorities (26%) of patients were Government employee & around (21%) were doing health care related jobs. Nearly (37%) of patients came under lower middle socioeconomic class as per modified BG Prasad classification 2020. The most common suspected contact was due to interstate travel (59%) followed by no travel history (34%), and only (7%) patients had international travel history within 14 days before the onset of symptoms (Table 1).

Major presenting symptoms of Covid-19 Patients (n=390) : On admission, the most common symptom was fever (73%), followed by myalgia (62%). Nearly half of the patients had cough (48%) before or at the time of presentation to the hospital. The other symptoms included fatigue (39%), headache (37%), breathlessness (36%) and Sore throat (24%). Loss of taste and/or smell sensation and chest pain were reported in (16%) and (13%) respectively. Diarrhea (12%), nausea and/or vomiting (8.0%) and cold (7.0%) were among the rare symptoms while around (14%) patients were asymptomatic at the time of admission. (Figure 1)

Association of comorbidity and outcome of admitted Covid-19 patients : Out of the 390 cases admitted, 37 cases died giving a case fatality rate of 9.4%. Out of the 353 remaining patients, 259 (73.3%) recovered and were discharged either after getting asymptomatic or after two consecutive negative samples; 31 (8.8%) patients who deteriorated were referred to higher centres like AIIMS covid care center, Raipur & Covid Hospital Medical college, Raipur for needful, while 63 (17.8%) patients took discharge against medical advice and were transferred out to other dedicated Covid care centres after getting the confirmation from respective hospitals. Around 277 (71%) had no history of any co morbidity while 113 (29%) reported one or the other comorbidity, hypertension being the most common (16.7%) one followed by diabetes (11%). Out of the 113 Covid-19 cases with reported co morbidity, 24 (27%) patients had dual co morbidities, of which 19 (16.8%) had both hypertension and diabetes, 9 (7.8%) patients reported three or more co morbidities. Out of 37 patients who died due to Covid-19, co morbidity was one of the significant risk factor for death (odds ratio = 11.60, 95% confidence interval = 5.1 − 26.3, P < 0.0001). The most common risk factor among the dead patients was hypertension followed by diabetes. Out of 37 patients who died, 16 (43.2%) had hypertension and 11 (29.7%) had diabetes (Table 2).

Discussion

We extracted data from a total of 390 patients infected with Covid-19 & admitted to Dedicated Covid Hospital, Raigarh during November 2020 to January 2021. The average age of all patients were 34.2±9.4 years, with a majority belonging to 31-40 years (32%) with male preponderance (68%). Data from the epidemiological study of Tambe et al revealed that (55.4%) of patients were between the age group of 31-60 years whereas mean age was 45.8 ± 17.3 years In a similar report of Jahid Hasan et al from Bangladesh showed mean age of the patients was 42.59±14.43 years and majority of patients were aged <30 years (28.4%).Another study of Teklu et al from Ethiopia showed median age of the cases as 36 years[12].This age distribution of Covid-19 patients is similar to that of study in Pune but differs from that of Bangladesh and Ethiopia. More cases in young age group may be because the working age group would have been travelling more and also getting more exposure during their work. We observed a male predominance (68%) consistent with the Covid-19 status of Pune, Bangladesh and Ethiopia, indicating a strong gender discrepancy in Covid-19 case identication of the adult population This may be because of the social context, where a man is the only wage earner of his family in most cases, and he needs more mobility compared to the female. Also may be related to their outdoor activities, travel and the younger age group might be reluctant to obey government instruction and restriction. Similar results were observed in a study conducted in New Delhi[13]. An analytical report of Jahid Hasan et al regarding Covid-19 cases in Bangladesh stated that the under reporting of female patients even after infection due to shyness or social stigma is a challenge to focus, which might be a potential source of rapid disease transmission[11].

Among the participants, (26%) were government employee and (21%) had healthcare-related jobs, with the most common suspected place of contact being the workplace. Jahid Hasan et al. found 29.67% had private jobs and 29% were health workers whereas teklu et al found 48.3% from business group.[11-12] Such exposure puts health workers at the greatest possible source of infection, demanding necessary protective steps to be taken to reduce the risk of infection in India. In this study nearly half (53%) of patients came from urban area and (37%) belong to lower middle class similar to report from Jahid Hasan et al[11]. The most common suspected contact was due to interstate travel (59%) followed by no travel history (34%), and only (7%) patients had international travel history within 14 days before the onset of symptoms. Jahid Hasan et al found only 1.4% cases had history of foreign travel while Teklu et al found 73% of the cases had foreign travel history.Tambe et al found only one patient 0.51% had history of foreign travel while 29.1% were exposed to a laboratory confirmed Covid-19 case out of which 23.8% cases had exposure within their family and 5.0% had exposure at work place.In this study, (86%) of participants were symptomatic wherein the most commonly reported symptoms were fever (73%), followed by myalgia (62%), cough (48%). The other symptoms included fatigue (39%), headache (37%), breathlessness (36%) and Sore throat (24%). Loss of taste and/or smell sensation and chest pain was reported in (16%) and (13%) respectively. Several studies also found similar clinical presentations, mostly fever, dry cough and dyspnea by Jahid Hasan et al[11].Cough, headache and fever were found in decreasing order by Teklu et al and breathlessness, cough and fever by Tambe et al[10,12] Nevertheless, the complete range of clinical manifestations is not yet

clear, as the reported symptoms show a wide variety ranging from mild to severe, even asymptomatic in many cases. We found that (14%) of our study patients were asymptomatic, which is comparatively lower than that found in earlier cited studies[10-12]. Out of the 390 cases admitted, 37 cases died giving a case fatality rate of 9.4% in contrast to finding of Tambe et al who found case fatality rate of 29.4%.[10] Also in current study around (71%) had no history of any co morbidity while (29%) reported one or the other co morbidity; hypertension being the most common (16.7%) one followed by diabetes (11%). The most common risk factor among the dead patients was hypertension followed by diabetes. Out of 37 patients who died, 16 (43.2%) had hypertension and 11 (29.7%) had diabetes. These findings were similar to findings of study cited above[10].Containment activities such as rigorous contact tracing, fever clinic, isolation ward, Rapid antigen and RtPCR testing, door to door check-up, dedicated Covid care, extensive sanitization were strengthened in these areas by health authorities. There are densely populated areas with no separate toilets and bathrooms. With this scenario, and such high population density, social distancing measures are hard to practice. Mortality might be due to the fact that this is tertiary level institute recognized as dedicated Covid hospital, where majority patients came with serious signs and symptoms. As it was in the peak stage of pandemic in India, further observation of the new cases in the future stages will reveal the appropriate socio-demographic and clinical profile of Covid-19 in Chhattisgarh

Table 1: Socio demographic Characteristics of COVID-19 Patients (n=390)

S.No.	Characteristics		Number (n)	Percentage (%)
1	Age (years)	<30	74	19%
		31-40	125	32%
		41-50	105	27%
		51-60	31	8%
		>60	55	14%
2	Gender	Male	265	68%
		Female	125	32%
3	Residence	Urban	207	53%
		Semi Urban	113	29%
		Rural	70	18%
3	Occupation	Government employee	101	26%
		Non-government employee	51	13%
		Self-employed	35	9%
		Health Worker	82	21%
		Student	27	7%
		Homemaker	24	6%
		Retired	16	4%
		Unemployed	55	14%
4	Socioeconomic Status	Lower	70	18%
		Lower Middle	144	37%
		Middle	121	31%
		Upper Middle	43	11%
		Upper	12	3%
5	Travel History	No Travel History	133	34%
		International Travel	27	7%
		Interstate Travel	230	59%

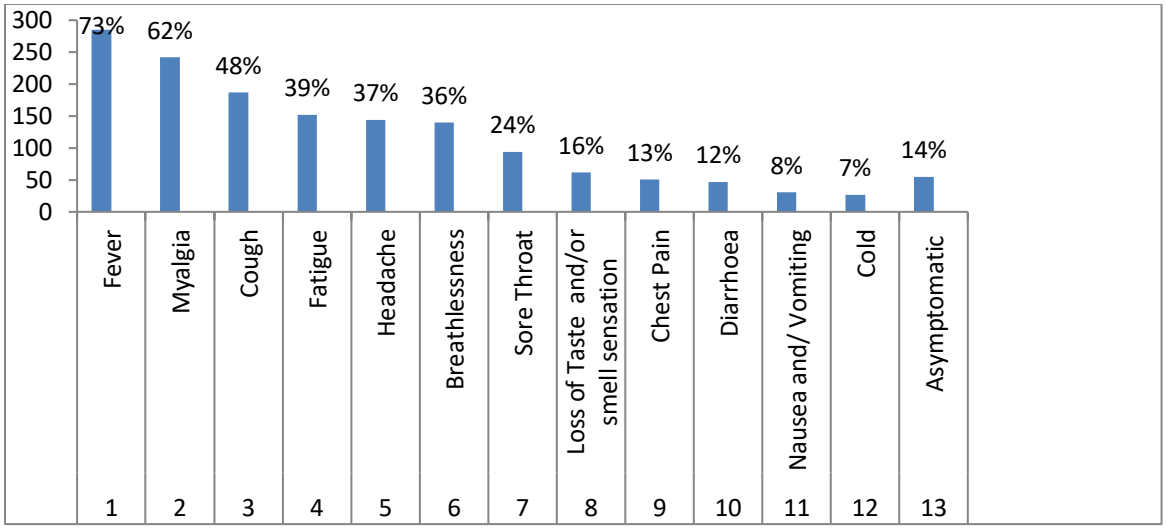

Fig 1: Major presenting symptoms of COVID-19 Patients (n=390)(*multiple responses)

Table 2: Association of comorbidity and outcome of admitted COVID-19 patients(*multiple responses)

S.No.	Type of Co morbidity	Deceased (n=37)*		Recovered# (n=353)*		Total (n=390)*	
		n	%	n	%	n	%
1	Hypertension	16	43.2%	49	13.8%	65	16.7%
2	Diabetes Mellitus	11	29.7%	34	9.6%	43	11%
3	COPD	7	18.9%	8	2.2%	15	3.8%
4	CVS	5	13.5%	4	1.1%	9	2.3%
5	ALD	7	18.9%	0	0%	7	1.8%
6	CKD	8	21.6%	4	1.1%	12	3%
7	Others	9	24.3%	7	1.9%	16	4.1%
9	Co morbidity present	29	25.6%	84	74.4%	113	29%
10	No co morbidity	8	2.8%	269	97.1%	277	71%

*multiple responses, # (discharged + referred), $\chi 2 = 45.8$, $p<0.00001$,
COPD=Chronic Obstructive Pulmonary Disease, CVS=Cardiovascular Disease,
ALD = Acute Liver Disease, CKD=Chronic kidney disease

n: Most of our patients were in the middle age group, employed, with male predominance and had history of interstate travel. The most common presentations were fever, myalgia, and cough, with a considerable proportion of patients having fatigue, headache, breathlessness, sore throat and loss of taste and/or smell sensation. Co morbidity was associated with bad prognosis. As it was in the early stage of the pandemic, observation of more cases who presented later on will reveal further clinical and demographic profiles of Covid-19 cases.

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