



PATTERN OF ILLNESS AND OUTCOME OF COVID-19 PATIENTS ADMITTED IN TERTIARY CARE HOSPITAL, HAZARIBAG, JHARKHAND: A SECONDARY DATA ANALYSIS

Medical Science

Dr. Soma Oraon*	Assistant Professor, Department of Medicine, Sheikh Bhikhari Medical College, Hazaribag, Jharkhand. *Corresponding Author
Dr. Manoj Kumar Purty	Assistant Professor, Department of Pharmacology, Sheikh Bhikhari Medical College, Hazaribag, Jharkhand.
Dr. Rajeev Kumar Mahli	Assistant Professor, Department of Biochemistry, Sheikh Bhikhari Medical College, Hazaribag, Jharkhand.
Dr. Ajay Bhengra	Assistant Professor, Department of Forensic Medicine & Toxicology, Sheikh Bhikhari Medical College, Hazaribag, Jharkhand.

ABSTRACT

Introduction: For any emerging infectious disease, knowledge of the pattern of illness is essential in order to control and adequate preparedness of the health facility and administrator for the future emergencies. **Objective:** To describe the pattern of illness of patients admitted with COVID-19 and to assess the outcome of illness of the respective patients. **Methodology-** This retrospective study was conducted for a period of 6 months, among the COVID-19 patients admitted in SBMCH. Data was collected from the OPD and IPD register and was entered in MS Excel sheet. Analysis was done using SPSS Version 20. Descriptive statistics was used. Chi square test was done to find the association between demographic profile and source of infection. **Result:** A total of 345 COVID 19 admitted patients were enrolled for the study. Majority (85%) of the study population were male and more than half (53.3%) were laborer. **Conclusion:** Based on our result we concluded that majority of the affected study population of productive age group with history of travel. It somehow indicates the administration to have a check over the migrants.

KEYWORDS

Pandemic, COVID 19, pattern of illness, outcome.

INTRODUCTION

COVID-19 is a disease of respiratory system, caused by SARS-Co V-2, a newly emergent Coronavirus, that was first recognized in Wuhan, China, in December 2019.[1]The world health organization declared COVID 19 as a pandemic on March 11, 2020.[2] The mode of transmission is mainly by droplet infection and contacts. The most commonly reported symptoms are fever, cough, myalgia or fatigue, pneumonia, and dyspnea, whereas less common reported symptoms include headache, diarrhea, hemoptysis, runny nose, and phlegm-producing cough.[3] The outcome of the disease is good. Patients associated with comorbid condition are prone to more serious condition, even leads to mortality. During the first wave of COVID -19 pandemic, very little documented evidence was available to provide direction for preparedness of the health care facility. Therefore, this study was conducted with the objective to determine the pattern of illness and outcome of patients admitted with COVID-19.

Methodology

Setting: Seikh Bhikhari Medical College and Hospital (SBMCH), a Tertiary care Hospital, situated in the heart of Hazaribag district of Jharkhand, established in the year 2019. It is a 500 bedded hospital with per day average patient flow of 250-300 in the medicine OPD. Hazaribag District is located in the Northern part of Jharkhand, and shares a border of Bihar.[4] Because of the location it is serving the patients not only from Hazaribag but also from adjacent districts like Ramgarh, Koderma, Chatra etc.

Study Design- Retrospective study

Study Population- All COVID 19 patients admitted in SBMCH, during March 2020 to August 2020 were included in this study, by consecutive sampling technique.

Data Collection- It was collected in predefined proforma divided into 3 parts (demographic characteristics, source of infection & test performed, clinical presentation & final outcome)

Data Entry and Analysis- Collected data was entered in MS Excel sheet and was analyzed using SPSS version 20. Mean and standard deviation was obtained for continuous variable whereas absolute numbers and simple percentages were used to summarize categorical variable. Association between demographic profile and source of infection was analyzed using Chi Square test. However, Fischer Exact test was applied where applicable. 5% level of significance was considered for this study.

The ethical approval for the study was obtained from the Institutional Ethics Committee, Sheikh Bhikhari Medical College, Hazaribag.

RESULT

A total of 345 patients were included for this study. Data analysis showed male dominance (85.5%) in the study population. Majority (98.3%) of the study population was constituted by local residents of Hazaribag. More than a half(53.3%) of the admitted patients were laborer followed by businessman(42%), housewife(34%), police(32%),students(28%), Hospital staff(2.9%) and remaining contribute for 7% only. Detail of the demographic profile is depicted in Table 1.

Regarding source of infection, it was found that more than half (53.6%) of the study population had history of travel and majority(68.4%) were diagnosed by TRUNAT test, as presented in Table 2.

In our study majority (97.1%) of the COVID 19 patients were asymptomatic and only 2.9% patients presented with symptoms like fever, headache, weakness, cough and /or breathing difficulty, Figure 1. Mean (SD) SPO2 among study population was 97.61(3.85). The final outcome of the admitted patients is depicted in Figure 2.

Association between demographic profiles with the source of infection is shown in Table 4.

Table 1. Demographic Profile Of The Covid 19 Patients (n=345)

Variable	Frequency	Percentage
Sex	Male	295
	Female	50
Ethnicity	Tribe	10
	Non Tribe	335
Residence	Hazaribag district	339
	Other districts	6
Occupation	Laborer	184
	Housewife	34
	Government job	10
	Businessman	42
	Police	32
	Student	28
	Hospital Staff	10
	Driver	2

	Barber	1	0.3
	Electrician	1	0.3
	Prisoner	1	0.3

Table 2. Source Of Infection And Diagnostic Test Performed (n=345)

Variable		Frequency	Percentage
History	Travel	185	53.6
	Contact	160	46.4
Test performed	RTPCR	109	31.6
	TRUNAT	236	68.4

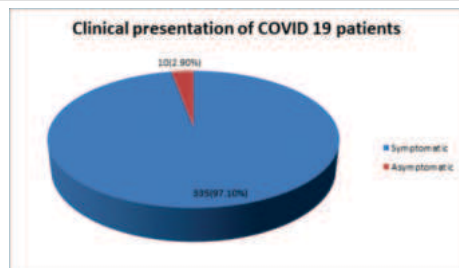


Figure1. Clinical Presentation OfThe Covid 19 Patients

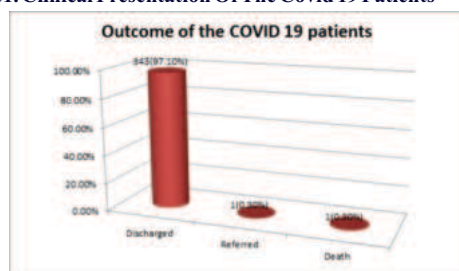


Figure2: Outcome OfThe Covid 19 Patients

Table 3. Association Between Demographic Profile And Source Of Infection Among The Covid 19 Patients (n=345)

Variable		Contact n (%)	Travel n (%)	Total n (%)	Chi square test
Sex	Male	125(42.4)	170(57.6)	295(100)	.000*
	Female	35(70)	15(30)	50(100)	
Ethnicity	Tribe	6(60)	4(40)	10(100)	.523
	Non tribe	154(46.8)	181(54.2)	335(100)	
Residence	Hazaribag district	157(46.4)	182(53.6)	339(100)	.587
	Other district	3(50)	3(50)	6(100)	

*Statistically significant

DISCUSSION

The current study was conducted to find out the pattern of illness among the COVID 19 patients admitted at SBMS, Hazaribag. The relevant findings the study is as follows.

Demographic Profile

The mean age of the study population was 35.7years, which is the productive age and their morbidity is directly proportional to the economical loss of the country. Overall, 85.5 % of the population was constituted by male. In India, Male members are mainly responsible for earning for livelihood and their movement outside the home/state is obvious. In our study, laborer (53.3%) and businessman (12.2%) together constituted the majority of the study population and had the history of travel from other state. Data of Socio Economic and Caste Census(SECC) 2011for rural India also showed that source of household income in more than half(51.14%) of the population is manual casual labor.[5]

Source of Infection, Clinical Presentation and Outcome

The current study revealed that more than a half(53.6%) had history of travel and probably might had acquired infection during journey. Among the admitted patients majority (97.1%) were asymptomatic. Studies have documented COVID 19 infection in people who remain asymptomatic.[6-8]On the contrary, the study by Huang C et al (2019), where majority of the patients were found symptomatic.[9] Mean(SD) Spo2 measured among the admitted patients was 97.61(3.85) with range(54-99%) . Similar findings were noticed in a

systematic review done by Bepouka et al. [10] The outcome of the admitted patents was good. The majority (97.1%) got discharged from the hospital after they were tested negative. However 0.3% was referred to other hospital due to inadequate critical care facility and 0.3% died. A report of United State Centre for Disease Control through the end of may 2020 showed 5% death. [11]

Association Between Demographic Profile and Source of Infection

The result showed statistically significant association history of travel and sex of the study population, (p=.000). However no association was found between ethnicity, residence and source of infection.

Strength and limitation of the study: The study summarizes the demographic profile, possible source of infection, clinical presentation and outcome of the COVID 19 patients admitted at SBMC, Hazaribag during first wave of pandemic. It suggests some evidence for future research direction on COVID 19, which will provide information for research community, health care administrator and policy makers.

However, this study had many limitations because of study design and source of data. We had to completely rely on the limited information of OPD and IPD register. As the data was captured in the predefined proforma, during first wave, with little preparedness due to lack of information, some relevant information like co morbidity was incomplete.

CONCLUSION

Based on the result of the study and discussion, it can be concluded that majority of the affected study population is of productive age group with history of travel. Human capital is intangible asset and mortality of even a single individual counts. Hence, it must be conserved by the holistic approach. It is recommended to strengthen the health care delivery system, with special focus towards critical care facilities. In addition, the administrative check over migrants during infectious disease pandemics is also required. More studies are suggested to explore every minute aspects of COVID 19 Pandemic to better understand the gaps and hence field for improvement.

Acknowledgement

We would like to express our gratitude to the hospital staffs, responsible for maintaining records in the OPD, IPD as well as in the MRD. We would also extend special thanks to the Institutional Ethics Committee for their guidance and support.

Financial Support and Sponsorship

Nil

Conflict of Interest

There are no conflicts of interest.

REFERENCES

- WHO (2020) COVID19: rolling updates on coronavirus disease (COVID-19). <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>
- Cucinotta D, Vanelli M. WHO Declares COVID-19 a Pandemic. Acta Biomed. 2020 Mar 19;91(1):157-160. doi: 10.23750/abm.v91i1.9397. PMID: 32191675; PMCID: PMC7569573.
- CDC. 2019 Novel coronavirus, Wuhan, China. 2020. <https://www.cdc.gov/coronavirus/2019-nCoV/summary.html>. Accessed 1 Feb 2020
- <https://www.hazaribagonline.in/city-guide/about-hazaribagh>
- Socio Economic and Caste Census(SECC) 2011- <https://secc.gov.in>.
- Mizumoto K, Kagaya K, Zarebski A, Chowell G. Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020. Euro Surveill 2020; 25.
- Kimball A, Hatfield KM, Arons M, et al. Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility - King County, Washington, March 2020. MMWR Morb Mortal Wkly Rep 2020; 69:377.
- Oran DP, Topol EJ. Prevalence of Asymptomatic SARS-CoV-2 Infection : A Narrative Review. Ann Intern Med 2020; 173:362.
- Huang C, Wang Y, Li X, Ren L, Zhao Jianping, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020; 395:497-506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5).
- Bepouka B, Odio O, Mayasi N, Longokolo M, Mangala D, Mandina M, Mbula M, Kayembe JM, Situakibanza H. Prevalence and Outcomes of COVID -19 Patients with Happy Hypoxia: A Systematic Review. Infect Drug Resist. 2022 Sep 22;15:5619-5628. doi: 10.2147/IDR.S378060. PMID: 36172621; PMCID: PMC9512283.
- Stokes EK, Zambrano LD, Anderson KN, et al. Coronavirus Disease 2019 Case Surveillance - United States, January 22-May 30, 2020. MMWR Morb Mortal Wkly Rep 2020; 69:759.