

ORIGINAL ARTICLE

Clinico-epidemiological profile of early cases of Covid-19 in state of Haryana, India

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Abstract

Background: Covid -19 disease is caused by novel coronavirus known as SARS CoV 2. Coronaviruses are known to cause disease in humans which can be a common cold or a serious pneumonia. SARS Cov 2 is a new variant of coronavirus which was never reported in humans before detection of cluster of cases of pneumonia in Wuhan on 31st December, 2019. **Objective:** The study was conducted with the objective to find out clinico- epidemiological profiles of early Covid-19 patients in state of Haryana, India and to find out knowledge about covid appropriate behaviors among covid 19 patients. **Methods:** All the covid-19 cases in the five districts of Haryana were enumerated from March 2020 to May 2020. These Covid-19 cases were contacted telephonically and those who gave their consent to participate in the study were asked to fill interview schedule. **Observations:** There were 356 covid cases reported in five districts attached to PGIMS, Rohtak. Out of total, 254 subjects participated in the study, there were 60.6 % males and 39.4% females who participated in the study. Blood groups of all the participants were also enquired and it was observed that B +ve was most common (19.7%) blood group followed by A+ve (16.5%) and O +ve (15.7%). **Conclusion:** It can be concluded by the study that majority of the subjects were males, overweight and blood group A & B were the most common blood groups. It was observed that 75.2 % participants were aware about the use of mask, social distancing, hand hygiene and cough etiquettes.

Keywords

Epidemiological profile; Early cases; Covid-19 patients; Haryana.

Introduction

Covid -19 disease is caused by novel coronavirus known as SARS CoV 2. Coronaviruses are known to cause disease in humans which can be a common cold or a serious pneumonia. Corona virus derives its name from its crown like appearance when seen through electron microscope. (1) SARS CoV 2 is a new variant of coronavirus belonging to Beta coronavirus genus, which was never reported in humans before detection of cluster of cases of pneumonia in Wuhan on 31st December 2019. This virus rapidly spread to other parts of the world and on 11th March 2020 WHO declared it a pandemic. SARS CoV 2 is a single stranded RNA virus and causes flu like symptoms, mainly affecting lower respiratory tract as reported in various studies. (2,3,4) Most common symptoms of Covid-19 disease are fever, dry cough and fatigue. Other symptoms are rhinitis, shortness of breath, conjunctivitis, sore throat, loss of taste & smell, body ache and diarrhea. (5) Usha G et al (6) depicted that fever and cough were the most common symptoms followed by sore throat, headache and breathlessness. Covid 19 has spread to all age groups but as observed by Kaiyuan Sun et al (7) it was more common in patients of age group 45 years and above. Only in 3% cases it was reported in subject less than 15 years of age. In the same study male preponderance was pointed out with 55% male cases reported. The mode of spread of SARS CoV 2 is from person to person either through direct inhalation of droplets or through fomites. (8) The incubation period of virus ranges from 1 to 14 days and patients can be symptomatic or asymptomatic. Symptomatic patients can transmit infection more effectively to the contacts but transmission through asymptomatic patients cannot be denied. (9,10) Large majority of these patients are asymptomatic but as the transmission rate is high and as it is novel virus so case load of symptomatic and patients requiring admission is high. Considering the unpredictability of SARS CoV 2 in the manner it affects individual, this study is an attempt to throw some light on clinico-epidemiological profile of early Covid-19 patients.

Aims & Objectives

1. The study was conducted with the objective to find out clinico- epidemiological profiles of early Covid-19 patients in state of Haryana, India.

2. To find out knowledge about covid appropriate behaviors among covid 19 patients in state of Haryana.

Material & Methods

Study Setting and Design: There are 22 districts in Haryana, out of which five districts (Rohtak, Jhajjar, Bhiwani, Gurugram & Charkhi Dadri) are attached to Pt. B. D. Sharma PGIMS, Rohtak for providing support through Rapid Response Teams for monitoring of Covid disease. The Rapid response teams consisted of one faculty member, one senior resident and two post-graduate students from Department of Community Medicine, Pt. Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences, Rohtak. A descriptive cross-sectional study was conducted in these five districts.

Study Population and sampling technique: Universal sampling was followed where all the confirmed cases from March 2020 to May 2020 of these five districts were enrolled in the study. There were 356 total cases reported in these three months.

Study tools and technique: A semi-structured and pre-tested interview schedule was used for interviewing the study subjects. Patients were contacted telephonically. The interview schedule contained information on general demographic characteristics, co-morbid conditions of cases and contacts, symptoms, preventive measures.

Data Collection: All the confirmed cases from March 2020 to June 2020 were contacted telephonically. Out of 356 cases, 254 gave their consent to participate in the study. During telephonic conversation, initial some time was spent with the subject to build rapport asking him/her about general wellbeing. Patients who gave verbal consent for participation, were interviewed using a predefined, pretested semi-structured interview schedule. The queries of the study subjects were answered after the interview schedule and any myths or misconceptions of study subjects were removed.

Consent: An informed verbal consent/ascent was obtained from the subjects enrolled in the study. The subjects were explained about the proforma and whoever not interested was not enrolled in the study.

Ethical Considerations: Institutional Ethics Committee approval was obtained. Confidentiality of

the data was religiously maintained by the investigator.

Data analysis: The study data was analyzed by applying percentages and proportions for different parameters. The SPSS version 20 was used to analyze the data. The analyzed data was appropriately interpreted for drawing conclusions.

Results

As shown in (Table 1), there were 356 covid cases reported in five districts attached to PGIMS, Rohtak, Haryana in month of March-May 2020. All of these covid cases were telephonically contacted, out of these only 254 study subjects gave consent to participate in the study, rest either didn't pick up the call or refused to participate in the study. Out of 254 study subjects, 60.6 % were males and 39.4% females. Most (95.3%) of the study subjects were educated and only 4.7% were illiterate. Among study participants 40.6% were graduate and 20% were educated till senior secondary. There 6.3% subjects educated till primary, 7.1% till middle and 9.4% till matriculate. There were 9.4% who did their post-graduation too. Body mass Index was also calculated and as shown in (Table 2), 60.6% study subjects were overweight having Body mass Index between 23.0 to 27.0 and 26% study subjects were with normal Body mass Index falling between 18.5 to 22.9. Physical activity level was also assessed of all the study participants and as depicted in (Table 3), 70.7 % of the participants were having a sedentary life style. A sizable population was following a light and moderate level of physical activity 16.5% and 10.6% respectively. Only 1.2 % participants were doing heavy physical exercises by going to gym. Blood groups of all the participants were also enquired and as observed in (Table 4), B +ve was most common (19.7%) blood group followed by A+ve (16.5%) and O +ve (15.7%). Both A-ve and O-ve blood groups constituted 1.6% each of total whereas B-ve were 0.8% and none of the participant reported it to be AB-ve. There were 33.1 % participants who were unaware about their blood grouping. Smoking habits were also considered in participants enrolled in the study. Those who never smoked in their life constituted 76.4% of the total and 23.2 % of study subjects smoked at some point in their life. Alcohol consumption is also considered important as far their health of an individual is considered, there were 37.8% study subjects who ever consumed alcohol and 61.4% participants never consumed

alcohol. Out of total study subject 40.2% were vegetarian and 59.8% were Non-vegetarian. Awareness level of participants regarding preventive strategies for Covid-19 was also assessed. It was observed that 75.2 % participants were aware about the use of mask, social distancing, hand hygiene and cough etiquettes. Further, it was assessed that how many of these participants were practicing all four preventive strategies, it is surprising to know that only 27.8 % were actually practicing it. It was a stressful experience for patients who were Covid positive. Stress experienced by the patients was assessed on likert scale of 1 to 5. It was observed that only 9.5% subjects strongly disagreed and 8.7% disagreed that there was stress with Covid disease. There were 36.2% strongly agreed and 38.3% agreed that there was stress with Covid disease whereas 7.3% said that they can't say about it. Symptomatology of the Covid patients was also enquired, it was observed that 44.1 % patients were asymptomatic and rest of patients were symptomatic. Most common symptoms were Fever, Sore throat, Cough, Dyspnea, Body ache, Malaise, Vomiting, diarrhea, Anosmia. Covid patients were a risk of transmitting infection to their close contacts if proper preventive strategies were not followed.

Discussion

Majority (60.6%) of subjects enrolled were males, this may be due to the reason that males generally work outdoor so chances of transmission is high. Similar results were shown by a study by Kaiyuan Sun (7) et al in which males were affected more as compared to females. Among study participants 40.6% had completed graduation and 20% were educated till senior secondary. All the participants were at least educated uptill primary class. March-May 2020 were the initial months when disease was transmitted from other parts of worlds to India and mostly through international travel. People residing in urban area could afford to travel abroad, so probability of contracting disease was high among them. It was observed that 60.6% study subjects were overweight having body mass index ranging from 23.0 to 27.0. In a study by Lighter J et al (11) it was also observed that person with obesity and age less than 60 years are at increased risk of contracting covid disease. In a study by Kwong JC et al(12) it was observed that influenza patients who are obese have more risk of hospitalization due to respiratory illness. In our study around 74.3% patients were under

stress which is quite understandable considering limited knowledge about the disease and social stigma attached to the diseased. Similar findings were observed in a study by Bo H-X et al (13) where 96.2% clinically stable covid patients experienced post-traumatic stress. In this study it was found out that B +ve was most common (19.7%) blood group followed by A+ve (16.5%) and least common was O +ve (15.7%). Similar finding were observed by Michael Zietz (14) et al in a study where they pointed out that “The unadjusted prevalence of initial infection was higher among A and B blood types and lower among AB types, compared with type O”. We assessed the alcohol consumption by the study subjects and it was observed that 37.2% subjects consumed alcohol. Alcohol consumption has been reported to increase ACE receptors and Tumor necrosis Factors in the lungs, as studied by Bechara RI et al (15) (2003) that it leads to acute lung injury so these it can be pointed out here that these patients were at increased risk of contracting Covid disease. Smoking habits were also considered in participants enrolled in the study and there were 23.2 % of study subjects who ever smoked tobacco. A meta-analysis by Patanavanich R (16) pointed that prevalence of smokers in Covid patients was 6.7%. It is higher in our study; it may be due to the reason that we enquired about ever smoked tobacco which will be high as compared to chronic smokers. It was observed that 44.1 % patients were asymptomatic and rest of patients were symptomatic. Most common symptoms were Fever, Sore throat, Cough, Dyspnea, Body ache, Malaise, Vomiting, diarrhoea, Anosmia. Similar finding was present in a study by Michael C. Grant et al. (17) The most prevalent symptoms in their study were fever 94%, a cough 94% and fatigue 95%, diarrhea 93%, dyspnea 97%. It was observed that 75.2 % participants knew about the use of mask, social distancing, hand hygiene and cough etiquettes. There is no study in the knowledge of author where awareness has been assessed in covid patients, there are studies where awareness level was assessed in different population groups, in one of the studies by Kaushik M et al (18) awareness of scientific knowledge was 48%. It is higher in our study it may be due to the reason that it was assessed in covid patients who more sensitized for preventive strategies as they themselves were suffering from Covid. In the same study by Kaushik M, (18) the knowledge of hand wash was 90%, so it

can be considered that 48% awareness is a range for different kinds of preventive strategies.

Conclusion

It can be concluded by the study that majority of the subjects were males, overweight and blood group A & B. Knowledge about covid appropriate behavior was adequate among Covid 19 patients as majority were knowing about use of mask, social distancing, hand hygiene and cough etiquettes. Fever, sore throat, cough, dyspnea, bodyache, malaise, vomiting, diarrhoea and anosmia were the major symptoms of Covid patients. About one third of subjects consumed alcohol and around one fourth of subjects smoked tobacco.

Recommendations

Covid -19 has been the most devastating virus of the century looking to its infectivity and mortality especially in the high-risk population. It can only be controlled through covid appropriate behavior. The study highlights the high-risk groups apart from elderly and persons with co-morbidity. Public health professionals need to focus more upon creating awareness among males, overweight/ obese persons and person with blood group A & B so that they may be extra cautious and take strict precautions for Covid-19.

Limitation of the study

A detailed study with large sample size distributed in among both rural and urban populations may be planned to better understand the clinic-epidemiological profile of covid patients as the study was planned on the early cases of covid-19.

Relevance of the study

Though it is widely known that elderly and people with co-morbidities are at higher risk of falling prey to serious form of Covid-19 disease yet many aspects of covid -19 epidemiology were unknown and unexplored. The current study highlights that males, overweight/obese persons and people with blood group A & B are more prone to contracting Covid-19 disease.

Authors Contribution

VC, RKY, RV & MK have designed the study, analyzed the data and have written the manuscript. AN, SG, RD, GA, GK, AS & VS have interacted with the Covid-19 patients, collected and compilation of the data and helped in drafting the article. All the authors

have reviewed the manuscript, gave important suggestions for improvement of the article.

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Tables

TABLE 1 STUDY SUBJECTS IN FIVE SELECTED DISTRICTS FROM MARCH 2020 TO APRIL 2020

Name of the district	Covid Cases in March 2020	Covid Cases in April 2020	Covid Cases in May 2020	Total
Gurugram	10	47	85	142
Bhiwani	0	2	3	5
Jhajjar	0	37	74	111
Rohtak	0	04	80	84
Chakhi Dadri	0	0	14	14
Total	10	90	256	356

TABLE 2 DISTRIBUTION OF STUDY SUBJECTS AS PER THEIR BODY MASS INDEX (BMI)

Sr. No.	BMI	Frequency	Percent
1	<18.5 (underweight)	20	7.9
2	18.5- 22.9(Normal)	66	26
3	23.0-27.5(overweight)	154	60.6
4	>27.5(Obese)	14	5.5
5	Total	254	100

TABLE 3 DISTRIBUTION OF STUDY SUBJECTS AS PER THEIR PHYSICAL ACTIVITY LEVEL

Sr.no.	Level of physical activity	Frequency	Percent
1	Sedentary	182	71.7
2	Light	42	16.5
3	Moderate	27	10.6
4	Heavy	3	1.2
5	Total	254	100

TABLE 4 DISTRIBUTION OF STUDY SUBJECTS AS PER THEIR BLOOD GROUP TYPES (N=254)

Sr. No.	Blood Group	Frequency (n=254)	Percentage
1	A+	42	16.5
2	B+	50	19.7
3	O+	40	15.7
4	AB+	28	11
5	A-	4	1.6
6	B-	2	0.8
7	O-	4	1.6
8	Not Known	84	33.1
	Total	254	100

Figures

FIGURE 1 DISTRIBUTION OF STUDY SUBJECTS AS THEIR LEVEL OF STRESS ON LIKERT SCALE

