



EPIDEMIOLOGICAL ANALYSIS OF COVID-19 PATIENTS AT A DEDICATED COVID HOSPITAL OF TERTIARY CARE CENTRE

Pharmacology

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ABSTRACT

Background- COVID- 19 is very challenging medical problem of this century. This pandemic affects almost all the developed as well as developing countries of the world. No effective remedies have been available till date. Only preventive strategies are the best known option. The main objective of our research work has to study the epidemiological profile of positive patients admitted in government approved dedicated hospital. **Methods-**A retrospective study based on two month records of discharged patients from dedicated COVID-19 hospital, at a Medical institute of North India, as per predesigned working pro-forma. **Results-**Out of 300 positive patients, majority were males (70 %) and most common age group of affected patients was 31 -40 years followed by 21 -30 years. Majority of patients were asymptomatic and admitted on the basis of their positivity of diagnostic reports. Non vegetarian habit supersedes the vegetarians. Our observations indicate easily spread of disease in family and among number of people from same area. Incidence of co-morbid diseases was common in aged patients. **Conclusion** – COVID-19 is a global deadly pandemic. Our study shows its incidence is more in middle age group with male predominance. It is difficult to trace out because maximum positive patients have been asymptomatic or have mild symptoms. Preventive approaches as per authentic guidelines can minimize its spread.

KEYWORDS

Pandemic. Novel Corona Virus, Syndrome, Epidemiological study .Prevention. Co morbid disease.

INTRODUCTION

In December 2019, novel-corona virus again diverts global attention. Moreover in the past two decades this is the third instance of emergence of a novel corona virus¹. Corona virus is not a new entity. But a curiosity has arisen in the mind, why the World is afraid about corona virus this time? Obviously, there are as yet no antiviral drugs and vaccines to treat human corona virus infection. Corona viruses are a group of related RNA viruses causes respiratory tract infections, ranges from mild to lethal outcome. Corona virus represents a major group of viruses affecting human beings through zoonotic transmission². Out of over hundred strains of corona viruses, three strains have more serious outcome in peoples – SARS (Severe Acute Respiratory Syndrome) emerged in 2002, MERS (Middle East Respiratory Syndrome) and most recent novel corona virus induced outbreak which emerged in December 2019 in Wuhan, China³. The other name of novel corona virus is SARS-CoV-2 (Severe Acute Respiratory syndrome Corona virus- 2)⁴.

On 11th Feb 2020, WHO said it has chosen a name for the disease that makes no reference to place and people to avoid stigma. The disease caused by novel corona virus is thus named as COVID-19⁵. On 11th March 2020 ,WHO has officially declared the outbreak of COVID-19, as a pandemic⁶. Currently there is no well established evidence based medical therapy approved for COVID -19, although, antiviral treatment and vaccines are under pipelines. Only conservative management may be the option as per symptoms⁷. Awareness about the disease and preventive strategies are the only hope to reduce morbidity and mortality. Overall, COVID-19 has been labeled as a global health emergency of International concern by WHO⁸.

Being as a pandemic there is demographic variations among different countries. Even in India there is variation between different states in context to age, sex and community etc. Considering to these points, a study was conducted in dedicated COVID-19 hospital, Rama Medical & Research Center, Kanpur UP, to analyze the epidemiological profile of corona positive patients.

METHODS

Aims and objective of study was to obtain data of various parameters and tally them with national figures. Study subjects were both males and females of all age groups admitted in COVID-19 hospital, Rama Medical & Research Center, Kanpur. The study was conducted after permission from Institutional Ethical Committee. Case sheets of discharged patients from 1st May -30st June 2020 (two months period) were analyzed as per prepared working patient study forms. All precautionary measures were following during data collection from

case sheets. There is no need of inclusion and exclusion criteria .No statistical methods applied; only percentage of different criteria was taken to intensify results. Data was expressed in proportion and percentage forms and represented in tables and diagrams.

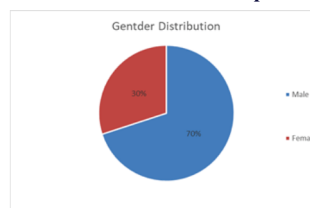
RESULTS

Data were considered and collected from records (case sheets) of discharged patients. The working patient study form contains necessary information's pertaining to age , sex, clinical presentation and co-morbid disease etc .Total three hundred patients (n=300) of both sexes and all age groups were admitted and discharged from COVID-19 hospital in one month. Out of total patients, 210 were males (70%) and 90 were females (30%). Gender distribution has shown in table no (1) and represented by diagram no (1).

Table No 1: Gender Distribution

S.No.	Gender	Patients Number	Percentage
1	Male	210	70%
2	Female	90	30%
	Total	n = 300	100%

Diagram No 1:- Gender Distribution with percentage



Age wise distribution is presented by bars in figure no (2) .Maximum patients fall in age group 20 -50 years. Infants to aged patients were grouped under specific age distribution of ten years interval. Their numbers in age groups' interval with percentage has shown in table no (2) and diagrammatically in no (2).

Table 2 :- Age wise distribution

S.No	Age Group (in years)	Patients number	Percentage
1	Up to 10	14	5%
2	10 to 20	36	12%
3	21 to 30	64	21%
4	31 to 40	94	31%
5	41 to 50	56	19%

6	51 to 60	30	10%
7	61 to 70	6	2%
8	71 above	0	0%
Total		n = 300	100%

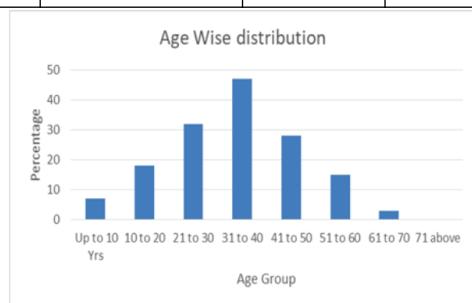


Diagram 2-Bar Diagram showing age distribution

Different parameter of general information's especially socioeconomic status has presented in table no (3).History of contact as well as family and community involvement bares no significance, thus discussed in discussion section. Dietary habit and travel related data have mentioned in table no (4).

Table 3:- Social Economic status

S.No.	Particular	No of Patients	Percentage
Education			
1	Up to 5th Class	48	16%
2	Up to 12 th Class	180	60%
3	Graduation - above	72	24%
Occupation			
1	Service	52	17%
2	Business	116	39%
	Labors & others	36	12%
4	Others(House makers/children)	96	32%

Table 4:-Dietary and travel records

S.No	Particular	No of Patients	Percentage
Dietary Habit			
I	Vegetarians	156	52%
II	Non Vegetarians	144	48%
Travel History			
I	Abroad	00	0%
II	In India	12	4%
III	No history	288	96%

Table no (5) presented the relative proportions of presenting complaints during admission with respect to total number of patients. Percentages of associated co morbid medical conditions has shown in table no (6) and in diagram no (3).

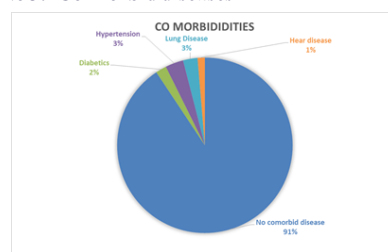
Table 5:-Clinical presentation

S.No	Particular	Patients Number	Percentage
1	Asymptomatic	96	32%
2	Symptomatic -	204	68%
I	Among symptomatic-	196	95%
II	Fever	172	84%
III	Cough	76	37 %
IV	Body Ache	16	8 %
	Breathing problems		

Table 6:- Co-morbid disease

S.No.	Co morbidities	Patient Number	Percentage
1	No co-morbid disease	270	90%
2	Co morbid disease-	30	10%
i	Diabetics	6	2.0%
II	Hypertension	10	3.3%
III	Lung Disease	8	2.6%
IV	Heart disease	4	1.3%

Diagram No 3:- Co-morbid diseases



DISCUSSION

COVID-19 is a global disease of significant morbidity and mortality. First case of COVID-19 in India was reported on 30 January, 2020. Gradually disease has been spread to all over India and affecting all the 28 states and 8 union territories. On 22 March (Sunday) 2020, India observed a 14 hrs voluntary public curfew. All the establishments have been shot down along with different phases of lockdown started from 25 March, there was four phases of complete lockdown till 30 May. Fifth phase has been declared from first June to unlock the lockdown in phased manner. On 19 May, 2020 the number of cases breaching the one lakh mark but case fatality rate is relatively lower against global index⁹.

Epidemiology is the study and analysis of the distribution of disease and other health related conditions in the defined population. The world epidemiology is derived from the Greek word (epi= among, upon)(demos=people)(logos=study, discourse).Epidemic is the rapid spread of disease to a large number of population within a short period of time. An epidemic has restricted to one location, however if it spread to other countries and affect a substantial number of peoples then termed as pandemic. In this sense global spread of novel corona virus induced COVID-19 is nothing but a pandemic. Out of different mode of spread of an infectious disease, the COVID-19 has been affected the population by contact and via airborne transmission. Therefore total lockdown, frequent hand wash and use of face masks are considered as authentic way of prevention from this deadly disease¹⁰.

In the epidemiological analysis, records of total 300, discharged patients of all age groups and both sexes were considered. Male to female ratio was approximately 2:1. Thus incidence of males supersedes the females. In most of the countries, equal numbers of male and female were affected. But in some countries like India the percentage of male (50-60% or more) was comparatively more than female (40-50%).Our observation supported the Indian data 11.Regarding to age , maximum patients were in age group of 30-40years , followed by 20-30 years and then 40 -50 years. Majority of COVID-19 cases in India affected the people between age's 20-50 years; of these the age groups 30-40 years were most commonly affected. One special point of our study was a 'seven months female baby' gets cured along with her three years sibling and parents. Our data correspondence the Indian figure 12.This indicates its maximum incidence in middle age group probably due to more chance of exposes.

In our study there was no history of travel, neither from abroad nor from other state of India. An ICMR study showed that 93% of those tested positive for COVID-19 and for whom data on expose was known, had neither travelled abroad nor had any contact with person known to be infected 14.Incidence of scattered cases was negligible. Most of the patients come from particular locality or street. Similarly there was involvement of many or whole member in the same family .These observations clearly indicate easily affection of number of persons because of its mode of transmission. We do not consider religions in our study because as per Union Home Ministry, the religion based mopping of COVID-19 is baseless, incorrect and irresponsible¹³. Meanwhile people of all the religions were admitted and discharged. Now pay attention on some social issues. Regarding to dietary habit, there was more or less equal share of both vegetarians and non-vegetarians. This is not important as per WHO view, but maintaining a healthy diet during COVID-19 is more important because such diets enhanced the immune system¹⁵.Overall vegetarian diet are rich in antioxidants ,photochemical and fibers required for good health. We have not been found remarkable outcome in context to socioeconomic because the disease affect the all subjects irrespective to their religion, poverty, education and occupation. Bronchial asthma, hypertension and diabetes mellitus were common co-morbid disease

noted in aged persons above 50 years. Mortality of COVID-19 is more prevalent in aged or in patients with co-morbid disease¹⁶. Majority of patients were asymptomatic (silent symptoms) and had no complaints however fever followed by dry cough was only presenting complaints in rest ¹⁷which is commonly seen in most of the viral illnesses. Our data is as per International and National data where majority of patients have been reported as asymptomatic or have mild symptoms. At the last but not the least, corona is a Latin word meaning crown similarly COVID 19 is an acronym, in its full form COVID-19 stands for Corona Virus Disease-^{19,18}

CONCLUSION

COVID -19 is a pandemic of high morbidity and mortality. Disease is caused by novel corona virus SARS CoV-2, and transmitted via contact and by air. Majority of patients have been asymptomatic but terminated to fatal outcome. Our epidemiological analysis supported the Indian data. There is no effective pharmacotherapy available till date. Only the prevention by means of physical distancing, use of face mask and frequent hand wash are only preventive strategies.

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Conflict of Interest – Not declared.

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