Review Article

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Scenario of Coronavirus Disease 2019 in India

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Abstract

Purpose of review: The world is filled with news about coronavirus disease 2019, shortly COVID-19 these days. The virus has been quite devastating with the death toll reaching an insurmountable level with time. So, to have and provide an insight on the viral attack in the Indian subcontinent this article has been penned.

Recent findings: India is the country with the second largest population in the world after China with a number of 1,382,715,488. The impact of the novel coronavirus 2019 has been humungous on the Indian population, with the country standing second in the world after the USA with a count of 48,50,887 (as on 14 Sep, 11.16 am). But due to the unavoidable resumption of daily chores in certain areas, the count stands high, despite the measures taken by the healthcare authorities. Hence, to provide an overview of the viral impact in the country, the article has been created.

Summary: COVID-19 is turning out to be a "digital infodemic", meaning all data sources being flooded with far-reaching information, both accurate and inaccurate data across the globe. The thought of providing a clear idea on the disease status in India prompted the creation of this article, which may give some awareness on the severity of the disease.

Keywords: COVID-19; Virus; Death toll; Insurmountable; Coronavirus disease 2019.

Introduction

Coronavirus disease 2019, also known as COVID-19, is an infectious disease, recognized as a global pandemic by the WHO. The etiology of the infection is identified to be a novel coronavirus.[1] COVID-19, is turning out to be a "digital infodemic", meaning all data sources being flooded with far-reaching information, both accurate and inaccurate data across the globe.

Historical details reveal that the virus was first named as coronavirus in 1968, and the naming was due to the crown-like morphology of these viruses when observed under an electron microscope.

Coronaviruses can be classified into three genera or groups (I to III) based on their serological cross-reactivity, which has been confirmed by more recent genome sequence analysis. Animal pathogens like TGEV of pig, feline infectious peritonitis virus (FIPV), porcine epidemic diarrhea virus (PEDV), and the human coronaviruses (HCoV-229E and HKU1, causing respiratory infections are included under group I coronaviruses. Group II encompasses veterinary pathogens like BCoV, equine coronavirus, porcine hemagglutinating encephalomyelitis virus, and human coronaviruses OC43, NL63 causing respiratory infection.[2]

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SCENARIO OF COVID-19 IN INDIA:

The global distribution of the deadly virus can be seen below, with the number of new cases climbing over 2, 00,000 per day on an average.[3]

Moving to the Indian subcontinent, the impact of coronavirus has been humungous on the entire population of the country.

The fatality rate of a disease assists in the understanding of the severity of the disease and helps to identify the vulnerable populations and evaluate healthcare quality. The proportion of infected individuals who experience fatal outcomes can be assessed using two measures, namely the infection fatality ratio (IFR) and the case fatality ratio (CFR). The former helps in the estimation of the proportion of deaths among all infected individuals, while the latter specifically estimates the death proportion in identified confirmed cases.

Case fatality ratio, CFR, can be defined as the proportion of individuals who have been diagnosed with the disease and experience death due to the disease. Hence, it is considered to be a measure of the disease severity among the detected cases.

$$\text{Case fatality ratio (CFR, in\%)} = \frac{\text{Number of deaths from disease}}{\text{Number of confirmed cases of disease}} \times 100$$

Estimation of CFR is influenced by the lags in the report dates for cases and deaths. In order to mitigate the bias due to the delays in case resolution during an ongoing outbreak, the analysis is cut down to the number of resolved cases.

$$\text{Case fatality ratio (CFR, in\%)} = \frac{\text{Number of deaths from disease}}{\text{Number of deaths from disease + Number of recovered from disease}} \times 100$$

The assessment of CFR, in the ongoing epidemic of COVID-19 may not hold since it makes two assumptions, which are listed below:

• The consistency of the chances of detection of cases and deaths over the period of the outbreak stands first. In the course of the disease outbreak, the early surveillance concentrates more on symptomatic patients seeking care; hence the milder and asymptomatic cases are less likely to be detected. This leads to an overestimation of CFR which has the possibility to decrease with the increase in testing and active case finding. In order to consider this point, removal of cases which occurred prior to the initiation of robust surveillance from the analysis can be carried out.

• Resolution of all the detected cases which means that the reported cases have either recovered or died. The death of active cases detected already leads to underestimation of CFR calculated before their death. This is particularly highlighted in fast growing epidemics, i.e. during the exponential growth phase of COVID-19.[4]

Table 1: State-wise determination of case fatality ratio (CFR) in the Indian population.[5]

S. No.	States	CFR	
		08/09/20	15/09/20
1	Maharashtra	3.93	3.8
2	Punjab	3.93	3.95
3	Gujarat	3.49	3.27
4	Madhya Pradesh	2.72	2.58
5	Delhi	2.65	2.47
6	Puducherry	2.61	2.55
7	Jammu & Kashmir	2.39	2.4
8	West Bengal	2.25	2.20
9	Karnataka	2.13	2
10	Chandigarh	1.94	1.76
11	Tamil Nadu	1.9	1.83
12	Uttar Pradesh	1.9	1.8
13	Chhattisgarh	1.74	1.7
14	Uttarakhand	1.69	1.91
15	Tripura	1.6	1.71
16	Rajasthan	1.48	1.43
17	Goa	1.47	1.52
18	Haryana	1.32	1.32
19	Jharkhand	1.27	1.15
20	Andhra Pradesh	1.1	1.03
21	Meghalaya	1.08	1.28
22	Himachal Pradesh	1.02	1.29
23	Telangana	0.8	0.76
24	Manipur	0.7	0.72
25	Odisha	0.62	0.57
26	Bihar	0.57	0.57
27	Kerala	0.53	0.57
28	Assam	0.37	0.42
29	Sikkim	0.36	1.04
30	Arunachal Pradesh	0.22	0.24
31	Nagaland	0.22	0.2
32	Mizoram	0	0

Data obtained as on 08/09/2020, 12:00 pm and 15/09/2020, 2:00 pm

In India, the occurrence of COVID-19 has had a great influence on the entire population of the country. Despite the hard efforts put in by

the medical and paramedical professionals, the condition is going out of bounds because of the large population. Healthcare professionals strive hard to cure the patients, few get infected themselves in reality. So, to provide an overview on the impact of this great disastrous infection, I would like to highlight few points related to the mortality and the fatality rate of COVID-19. Being cautious is the only way to escape from the deadly virus.

The CFR for each state has been calculated and given below to provide an insight on the disease scenario in India. The details are shown in table 1.

Conclusion

The novel virus has created a huge impact on the population across the globe. Since no medicine has been solely identified and since clinical trials are underway in several trial sites, the world needs to wait with patience for a remedy for this illness. Till then, being precautious is the only option to avoid contracting the virus from the surroundings. Use of hand sanitizers, and masks with social distancing are the available options for prevention. So, let us stay safe and avoid the virus from attacking us.

Conflicts of interest: None

Reference

1. https://www.who.int/health-topics/coronavirus#tab=tab_1

2. https://mmbr.asm.org/content/mmbr/69/4/635.full.pdf

3. https://www.nytimes.com/interactive/2020/04/21/world/coronavirus-missing-deaths.html as on 08/09/2020.

4. https://www.who.int/news-room/commentaries/detail/estimating-mortality-from-covid-19 as on 09/09/2020

5. https://www.covid19india.org/ as on 08/09/2020

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