

AN EPIDEMIOLOGY OF CORONAVIRUS DISEASE IN INDIA-2020

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Pradesh), 226031, India.**STRUCTURED ABSTRACT**

Background: An outbreak of COVID 19 has spread very quickly nationwide. Therefore, WHO has announced a worldwide crisis and pandemic for the COVID 19 that has been effectively spreading the world over. It is brought about by the infection SARS-CoV-2, starting at now SARS-CoV-2 has arrived at 24 nations on the planet and can cause indications, for example, fever, hack, wheezing, and weariness. The total number of positive cases in INDIA is now at 1,12,012 including 53035 active cases till 20 May 2020. **Objective:** The present spotlight has been on the advancement of novel therapeutics, including

antivirals and antibodies. **Method:** We found major articles of interest in the field of Coronavirus and proposed review based on relevant information of patients in India. **Result:** All the general Health Measures to stop ailment spread can be offset with versatile methodologies to support network and secure the food flexibly. **Conclusion:** This COVID 19 is a genuine danger to general wellbeing, and a worldwide test never has seen. Every exertion is required to more readily comprehend the illness, to control its spread. This review presents the results of the current scenario of COVID in India.

KEYWORDS: Coronavirus, supportive care therapy, SARS-CoV, Mechanism of Spreading, Impact on Diabetic patient, Impact on infants.

1. INTRODUCTION

Coronaviruses are a different gathering of positive-abandoned RNA infections that contaminate a wide scope of creatures from flying creatures to warm-blooded animals, causing an assortment of sicknesses. Also, profoundly pathogenic CoVs may develop through zoonotic repositories. In the previous two decades, SARS-CoV and MERS-CoV rose out of

bats and spread to people through the middle of the road has including civet felines and camels, individually. As of now, no antibodies or antiviral medications are endorsed to forestall or treat extreme CoVInfection.^[1]

India has been under lockdown since 25th march. It has been extended thrice first till 3 May and then till 31 May. India COVID 19 has crossed 1 lacs mark with cases total 1,12,012 cases in India. Death of people in India due to COVID 19 now stands at 3434, in which 45422 recovered as per the 20 May report. Maharashtra, Tamilnadu, Gujarat, and Delhi have reported the highest number of cases. India's case casualty rate is generally lower at 3.09%, against the worldwide 6.63% starting on 20 May 2020. Starting on 20 May 2020, two locales, Sikkim and Lakshadweep have not detailed a case.^[2]

On 30 January, India detailed its first instance of COVID-19 in Kerala, which rose to three cases by 3 February; all were understudies who had come back from Wuhan, China. No noteworthy ascent in cases was found in the remainder of February. On 4 March 22 new cases became visible, including those of an Italian traveler bunch with 14 infected individuals. The transmission raised during March after a few cases were accounted for everywhere throughout the nation, the greater part of which were connected to individuals with a movement history to influenced nations.^[2]

India has suspended all traveler visas, as a lion's share of the affirmed cases were connected to different nations. Patients are being admitted to the confinement ward and got supplemental oxygen through the face cover. According to the theory, diabetes and hypertension treatment with ACE2-invigorating medications increment the danger of creating serious and lethal COVID-19. The NIV and 52 different labs under the Indian Council of Medical Research's (ICMR) Viral Research and Diagnostics Laboratories arrange are prepared to test tests. The National Institute of Virology lab in Pune is filling in as the nodal lab for coronavirus testing in India. The Pune lab has offices for COVID-19 atomic conclusion and cutting edge sequencing. The labs are furnished with reagents to test up to 25,000 examples. The Indian government is including more coronavirus testing labs in the nation. About 2.94% of the active cases requiring oxygen support, 3% need ICU support and 0.45% are on ventilator support. Only 6.39% of cases are requiring hospital management.

The Government Divided the whole country into three zones – Green Zone, Red Zone, Orange Zone, unwinding will be permitted as needs are.

- a) Red zone (Hotspots) – districts with high doubling rate and high number of active cases
- b) Orange zone (Non-hotspots) – districts with fewer cases
- c) Green zone – districts without confirmed cases or new cases in the last 21 days

The coronavirus lockdown in India has left a huge number of vagrant specialists jobless. The lockdown has upset food supplies and takes steps to trigger a food emergency. The lockdown limits individuals from venturing out of their homes. All vehicle administrations street, air, and rail—were suspended, with special cases for transportation of fundamental products, fire, police, and crisis administrations. Instructive organizations, mechanical foundations, and friendliness administrations were likewise suspended. Administrations, for example, food shops, banks and ATMs, petroleum siphons, different fundamentals, and their assembling are excluded. The Home Ministry expressed that any individual who neglects to follow the limitations can look as long as a year in prison.

The last few weeks have not only seen a significant rise in the number of people in India infected by a novel coronavirus (SARS-CoV-2) but also fear and misconception about the ways the virus could spread. While it is indeed true that the virus is highly infectious, unsubstantiated beliefs about the route of transmission have only made it worse. As result doctors and other health care workers have been harassed.

India has overwhelmed China to turn into the eleventh most tainted nation on the planet. The United States is the most exceedingly awful influenced nation on the planet, with 14.7 lakh cases and 88,754 passings as of May 17.

In Maharashtra, the case check has crossed 30,000 – which is 33% of the absolute cases in the nation. Seeing the ascent in cases, Chief Minister Uddhav Thackeray has expanded the lockdown in the state till May 31. Mumbai, the most exceedingly awful hit city in the nation, saw a bounce of 884 cases on Saturday, taking its aggregate to 18,555.

Lockdown 4.0 is required to ease limitations, however, the Narendra Modi government needs to find some kind of harmony as it looks to re-start monetary action and at the same time forestall the coronavirus caseload from spiraling wild.

Among the most exceedingly awful influenced urban communities, Mumbai, Chennai, and Ahmedabad are anticipated to hit their pinnacles of 23,483 dynamic cases, 13,589 dynamic

cases, and 4,769 dynamic cases on June 1, May 31 and May 18, individually, as per the 'most probable' situation.^[2-3]

Right now there are no fix-all things considered however to state that whoever tests positive for the infection will die isn't right. For the present, the insights show that the passing rate is someplace around 1.5 to 2 percent. Medications are vague in nature. They are simply strong. There is no particular antitoxin, antiviral, or immunization yet those admitted to strong consideration at the opportune time additionally observe recuperation.

This virus is just like a pen drive. Within itself, a pen drive contains a memory storage chip, a USB controller. Functionally the Pendrive may contain huge data for storage, transport, copying, and visualization. But none of that can be done unless the USB connector docks onto the port of the computer. It is only then that the pen drive comes to life and the data inside can be viewed, edited, and copied. The SARS-CoV-2 virus is alike the pendrive.

They carry genetic material inside them (long RNA molecule in case of SARS-CoV-2 viral genome) which is the blueprint for making multiple copies of themselves. However, copying this viral genome and making daughter viral particles is possible only when the spike protein of the virus successfully binds to the ACE2 receptor protein of a host cell. As the virus hijacks the cell's internal system and commands it to produce only biomolecules needed for making more viruses. Finally, the infected cell bursts open, and numerous viral particles are released which in turn, infect neighboring cells or be carried out as a part of droplets in human breath.

Chloroquine and hydroxychloroquine have gotten exceptional consideration in light of positive outcomes. Many coronavirus scientists are likewise incredulous of the lopinavir-ritonavir mix. The patients with heart ailments, hypertension, or diabetes, who are treated with ACE2-expanding drugs, are at higher hazard for extreme COVID-19 contamination.

Michael Ryan, CEO Chief of the World Health Organization's wellbeing crisis program, said that India had "tremendous capacity" to manage the coronavirus episode and, as the second-most crowded nation, will enormously affect the world's capacity to manage it.

1.1 Diabetes patient and COVID 19

Diabetes is one of the most significant comorbidities connected to the seriousness of all these known human pathogenic coronaviruses including SARS in perspective on many

uncertainties which include DPP-4. Human pathogenic coronaviruses (extraordinary extreme respiratory issue coronavirus [SARS-CoV] and SARS-CoV-2) bind to their target cells through angiotensin-changing over protein 2 (ACE2), which is conveyed by epithelial cells of the lung, stomach related framework, kidney, and blood vessels.^[4-5] The announcement of ACE2 is altogether extended in patients with type 1 or type 2 diabetes, who are treated with ACE inhibitors and angiotensin II type I receptor blockers (ARBs). Hypertension is similarly rewarded with ACE inhibitors and ARBs, which realizes the upregulation of ACE2. ACE2 can in like manner be extended by thiazolidinediones and ibuprofen. This information recommends that ACE2 articulation is expanded in diabetes and treatment with ACE inhibitors and ARBs build ACE2 articulation. Subsequently, the expanded articulation of ACE2 would encourage contamination with COVID-19. In this manner, it may be theorized that diabetes and hypertension treatment with ACE2 animating medications builds the danger of creating extreme and lethal COVID-19.^[6-7]

Consequently, patients with heart maladies, hypertension, or diabetes, who are treated with ACE2-expanding drugs, are at higher hazard for extreme COVID-19 contamination and, in this way, ought to be checked for ACE2-tweaking meds, for example, ACE inhibitors or ARBs.

1.2 Cases of Mother to infant

Life is not exactly easy when you are trying to bring a tiny human into the world. So, it is only natural that pregnant women have a lot of questions about this fatal virus and whether it can impact their unborn baby or not. The immune system's role will be preeminent and their COVID-19 results will incompletely rely upon how pregnancy changes a lady's insusceptible framework.

Three of the four pregnant ladies conceived an offspring by cesarean segment because of worries about the suggestive maternal disease. The other newborn child was conceived by vaginal conveyance to a mother encountering fever with an analytically affirmed disease. The most huge request is whether the COVID-19 could be transmitted vertically to the incipient organism from the pregnant mother and cause a clinically immense sickness. Starting late, a finding from nine unique cases suggested that there is no confirmation for intrauterine malady realized by vertical transmission in women who make COVID-19 pneumonia in late pregnancy. We acknowledge this present report is the resulting case report on vertical transmission between COVID-19 pregnant women and their children. Additionally, this

report will concentrate more on infant kids. This case report depicts the clinical course of four live imagined babies bound to pregnant women with the COVID-19 defilement.^[8]

1.3 Vaccine Development

Inactivated immunizations are the fastest choice for antibody improvement in a flare-up circumstance. mRNA-1273 is the working name of Moderna's immunization, which is as of now in Phase 1 clinical preliminaries under the aegis of the US National Institute of Allergy and Infectious Diseases (NIAID), a piece of the US National Institutes of Health (NIH). The mRNA in the name implies detachment RNA, which conveys the hereditary recipe for the coding of a particular protein. In this antibody, the specific mRNA utilized codes for the most distinctive element of the SARS-CoV2 the spike protein which is additionally the limb that the infection uses to enter the cell and replicate.^[9-10]

Moderna has declared that the mRNA, on entering the body, had figured out how to show a level of the invulnerable reaction in the initial eight patients. While the underlying outcomes have raised expectation, comprehend that the real antibody may in any case be some time away and afterward, there are producing limit issues to manage before the whole world can practically plan to profit by it.

With the world holding hands to discover an immunization for COVID 19, everyone's eyes are on India, the powerhouse of antibody-producing.

2. DISCUSSION

Broad measures are required to decrease an individual to the individual transmission of COVID-19 to control the present episode. We should follow the lockdown rules and boost up our immunity. We should also follow the guidelines given by national and international agencies. In affected places, there are quarantine facilities. But after the concerned countries give clearance, there is nothing to worry as restrictions will be lifted. No need to be alarmed. Rather than stay aware. If there are concerns, there are various websites of the central and state government with information. There is WHO's (World Health Organisation) website as well. So after having a look at them, we can get more information.^[11-12]

The Ministry of Electronics and Information Technology propelled a cell phone application called the AarogyaSetu application to help in "contact following and containing the spread" of COVID-19 pandemic in the country. The World Bank commended the early organization

of such innovation to battle the pandemic. Worldwide innovation mammoths Apple and Google declared on 11 April, that they will take up the structure of programming for cell phones which would help in contact following, similarly as the AarogyaSetu application does.

3. CONCLUSION

The COVID 19 pandemic, is rapidly evolving with new findings and insights being discovered daily. The persistent improvement of antibodies, antivirals, and ideally quality treatments will give an armory to battling and controlling rising COVID illnesses. Immunization definition, including measurements and adjuvants, ought to be tried fundamentally and, if conceivable, on creature models that mirror the hereditary variety of the human populace. On the exploration side, snappy, solid and handily utilized viral testing units ought to be created. Creative advances, for example, quality treatment ought to be enough investigated for their capability to battle COVID and go about as a different line of protection against slippery developing viral infections. The present SARS-CoV-2 represents a colossal test for society; in any case, given involvement in developing COVID and worldwide exertion, it is trusted that the effect of the episode will be negligible. Information given in this article does not constitute or claim to serve as an advisory for any medical, safety, or regulatory action.

Availability of Data & Materials

The author confirms that the data supporting figure, the finding of this study is available in the article.

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REFERENCES

1. WHO Coronavirus disease 2019 (COVID-19) situation report – 52.
2. India Coronavirus: Available at <https://www.worldometers.info/coronavirus/country/india/>
3. Ruan Q, Yang K, Wang W, Jiang L, Song J, Clinical predictors of mortality due to COVID-19 based on an analysis of data of 150 patients from Wuhan, China. *Intensive Care Med.*, 2020; DOI:10.1007/s00134-020-05991-x

4. Zhang JJ, Dong X, Cao YY, *et al.* Clinical characteristics of 140 patients infected by SARS-CoV-2 in Wuhan, China. *Allergy* 2020; DOI:10.1111/all.14238.
5. Lei Fang, George Karakiulakis, Michael Roth *Lancet Respir Med.*, 2020 Apr; 8(4): e21. DOI: 10.1016/S2213-2600(20)30116-8 PMID: 32171062
6. Hoffmann M, Kleine-Weber H, Schroeder S, *et al.* SARS-CoV-2 cell entry depends on ACE2 and TMPRSS2 and is blocked by a clinically proven protease inhibitor. *Cell* 2020; published online March 4; DOI:10.1016/j.cell.2020.02.052.
7. Bindom SM, Lazartigues E. The sweeter side of ACE2: physiological evidence for a role in diabetes. *Mol Cell Endocrinol.*, 2009; 302: 193–202.
8. Yan Chen, Hua Peng, Lin Wang *et al.* Infants Born to Mothers With a New Coronavirus (COVID-19), *Front. Pediatr.*, 2020; 8: 104. DOI: 10.3389/fped.2020.00104
9. Chen Y, Gong X, Wang L, Guo J. Effects of hypertension, diabetes, and coronary heart disease on COVID-19 disease severity: a systematic review and meta-analysis. *medRxiv* 2020; published online March30; DOI:10.1101/2020.03.25.20043133
10. KapilGoyal,Poonam Chauhan, KomalChhikara, Parakriti Gupta, and Mini P. Singh, Fear of COVID 2019: First suicidal case in India! *Asian J Psychiatr.*, 2020 Mar; 49: 101989. doi:10.1016/j.ajp.2020.101989PMID: 32143142
11. Middle East Respiratory Syndrome Coronavirus. Available at: <https://www.who.int/emergencies/mers-cov/en/>. Accessed 16 Feb 2020.
12. World Health Organization. Coronavirus disease [COVID-19] Technical Guidance: Infection Prevention and Control. Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control>.