



## Current Status of Covid-19 Pandemic: Global and Indian Scenario

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Covid-19 infection, a new Corona Virus infection which started as a new viral infection in the Wuhan fish market, China, has now spread to all over the world turning out to be a really devastating pandemic, affecting 185 countries. The very 1<sup>st</sup> patient was a 57 year old woman, WeiGushiyan, who was selling fish in the market. It was reported on 27 December 2019. She took treatment for 1 month and is now cured. This was reported by Wall Street Journal under the title "Patient Zero". At first this new virus was named n-CoV-2019 (novel-CoV-2019). Later on the name was changed to Covid-19. Initially this new epidemic was confined to China only thereafter it spread to Italy. There are lot of trade connections between China and Italy and as such lots of people travel from China to Italy and also from Italy to China. This is the cause of spread of infection from China to Italy. From Italy Covid-19 infections spread to United Kingdom and later on to France then Russia was also affected. Later the infection spread to the North and South American Continents. Among all USA and Brazil is the most affected countries. At the beginning of the corona virus infection the Asian and African countries were comparatively free of the pandemic but now the picture has changed entirely and now almost all continents are involved. Apart from China, other Asian countries involved are India, Japan, North Korea, Saudi Arabia, Oman, Qatar, etc. Many African countries like Nigeria and Ethiopia are also affected.

Heavy international travels; mass gatherings for religious functions, marriages, death, examinations etc: and lack of proper use of personal protective equipments is the main causes for this pandemic spread. WHO was at first hesitant to declare this a pandemic, even while it was spreading to many countries and this also may be a significant cause for the widespread transmission of this disease.

Now, as on 26 June 2020, 183 days after the infection started, the global situation is grim, pathetic and fearful. On 6 March 2020, the 70<sup>th</sup> day after the pandemic started, total number of patients reached to 100000; on 2 April 2020 (97<sup>th</sup> day)-1 million; on 20 May 2020 (145<sup>th</sup> day)-5 million; on 6 June 2020 (152<sup>th</sup> day)-7 million; on 26 June 2020 (182<sup>th</sup> day) 9,820,378 (i.e. 9.8 million.) [1]. It is progressing in such frightening proportions.

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Both in total number of patients and deaths USA is leading- 2,512,815 (i.e. 26% of total patients) and 126,839 (i.e. 26% of total deaths) respectively, followed by Brazil with 1,233,147 and 55,103 and then Russia with 620,794 and 6969 respectively. The total patients being 9,820,378 and deaths being 494,222, the death rate

is 5% globally.

Coming to statistics regarding total cases per 1 million populations, for USA, it is 7645; Brazil 6012; Russia 4101 and India 384. Regarding total deaths per 1 million populations it is 367 for USA, 249 for Brazil, 51 for Russia and just 10 for India. The different diagnosis tests are used to detect Covid-19. TrueNat is a comprehensive test for screening as well as conformation of cases. In this test, lesser volume of blood is needed and result is faster. Yet another test is ELISA There is a newly approved Standard Q Covid-19 antigen detection test. This is also known as rapid test and it takes only ½ hour to get the result. For diagnosis of SARS CoV-2 infection, RT-PCR (Reverse Transcriptase-Polymerase Chain Reaction) is the Gold Standard.

Various drugs are being used for treatment like HCQ (Hydroxychloroquine) is used by various countries including India for treatment as well as prophylaxis. USA is importing large bulk of HCQ from India. It is usually used in combination with an antibiotic, Azithromycin.

A combination of Ritonavir and Lopinavir, both anti-retroviral drugs used in treating AIDS is being successfully used in treatment, which is known by the brand name "Kaletra". Various strengths of the combination of Lopinavir and Ritonavir are available like 800mg/200mg (respectively); 400/100; 200/50. Usual dose is once daily (OD); in severe cases it can be made twice daily (Bid). A foreigner admitted in Government Medical College Hospital, Kalamassery, Kochi, Kerala, India with Covid-19 was cured by this combination.

Another useful drug is Remdesivir, which is an antiviral drug [2]. In an RCT this has shown to be reducing hospital stay; but did not have much effect on mortality [3]. It is usually given in combination with Tocilizumab. Remdesivir is the 1<sup>st</sup> anti- Corona Virus drug. It is a nucleotide analogue prodrug.

Dexamethasone, a steroid drug successfully being used in respiratory diseases has recently been included in the treatment protocol by the Central Health Ministry, India [3]. HCQ, Remdesivir and Tocilizumab were already approved in the protocol. According to WHO, treatment with Dexamethasone was very successful in Britain? By this treatment, death rate among patients on ventilator reduced by 1/3<sup>rd</sup> and that among patients just on Oxygen came down by 1/5<sup>th</sup>. It has shown good results in the RECOVERY Trial, one of the largest RCTs for Corona Virus treatment. Here, critically ill patients and those on Oxygen therapy showed marked improvement. Their risk of mortality came down by 20%. In patients with mild disease, there was no much effect [4].

Tocilizumab, an I L-6 (Inter Leukin-6) inhibitor is now being used for Covid-19 treatment. It is a recombinant humanised monoclonal antibody of the IgG1 class. It is the 1<sup>st</sup> marketed I L-6 inhibitor blocking the I L-6 receptors. The REMDACTA study adds Tocilizumab to a regimen of Remdesivir in hospitalised patients with severe Covid-19 Pneumonia. The COVACTA study is nearing completion.

Favipiravir is the latest drug suggested for treatment. It is widely used in treatment of Influenza in Japan. It is an antiviral drug which selectively inhibits RNA polymerase which is necessary for viral replication. Glen mark Pharmaceuticals is the manufacturer and Fabiflu is the brand name. In the Stanford Medical Trial, it was tested for treating Covid-19 out-patients. It is now approved for treatment of mild to moderate cases. 18 Trials are going on all over the

world with this drug. Some experts recommend Ivermectin also for treatment. Some other experts opine that ultra violet-C rays can be used for disinfection as they will kill the virus. A very useful modality of treatment is Plasma Therapy. Here, plasma of an infected and cured Covid-19 patient is infused in to the new patient. It contains antibodies to Covid-19. It has been proved very effective. A very serious patient in Vivek Hospital, New Delhi who was on Ventilator and who was sinking, recovered completely with Plasma Therapy. In Kerala, India a very serious patient, Zainuddeen recovered with this therapy at Government Medical College Manjeri, Kerala, India. Mr. Vineeth, a patient cured of COVID 19 infection, was the plasma donor. Three patients at Government Medical College, Thrissur, Kerala, India, also received Plasma therapy similarly and all of them got cured. In the third case the donor was Mr. Ratheesh, again another patient cured of COVID 19 infection.

Now, coming to Vaccines, lots of money and recourses are being spent on vaccine development. Such research activities have brought forth more than 150 Corona virus vaccine candidates. AZD 1222, the one developed by Oxford University, funded by CEPI (Coalition for Epidemic Preparedness Initiative) seems to be the most potent and promising one. Astra Zeneca Pharma has been given the licence to produce the vaccine. Serum Institute of India, the largest manufacturer of vaccines in the world has agreed to manufacture this vaccine in large quantities to supply to the middle and low income countries [5].

Very recently Bharat Biotech has come out with the 1<sup>st</sup> Indian Covid-19 Vaccine "COVAXIN". It has cleared animal experiments and has been approved for human experiments stages 1 and 2. Bharat Biotech has brought out this vaccine in collaboration with National Virology Institute which is a part of Indian Council of Medical Research (ICMR). These stages will take 3 months to complete. If successful, vaccine will be available for the people by this year end. 1200 volunteers are involved in these clinical trials being held at major hospitals in 10 cities like New Delhi, Chennai, and Hyderabad etc. Now some experts suggest that MMR vaccine (which is given to prevent 3 diseases: Mumps, Measles and Rubella) can be given to prevent Covid-19 infection. This is based on the proven fact that Rubella virus is 30% similar to Covid-19 virus. Some other subject specialists opine that BCG vaccine, given to prevent Tuberculosis, is also protective against Covid-19 infection.

Initially India was at 70<sup>th</sup> position in number of cases and 102<sup>nd</sup> position regarding number of deaths. Now India has risen to the 4<sup>th</sup> position in number of cases and 8<sup>th</sup> position in number of deaths [1]. However, India's death rate is very low- only 3%. Lots of theories have been proposed telling why India had less number of cases initially when compared to other countries. There is a postulate that it is because of the tropical climate. Some others contribute it to the relatively younger population. Many others praise the containment and restrictive measures put into practice by India and they feel that this is the main cause of less number of cases [6]. Covid-19 infection has spread all over the world, irrespective of the type of terrain or differences in climate. This shows that there is no significant role for seasonality or average temperature in the transmission [7].

Compared to developed countries, India has a younger population. Geriatric people have more co-morbidities than the other age groups and they are more at risk of developing complications. India was very much praised for the measures taken to contain the SARS CoV-2, including restricting public mobility. Nationwide lockdown which is the largest in the world

and early closing down of airports and seaports are mighty steps used to contain transmission [8]. Isolation and quarantine became the most successful methods to control community transmission. Proper line-listing of cases, timely contact tracing, districts designated as red zones recognised as at high risk, with large number of cases; orange and green denoting medium and low risk respectively and free control helpline all sufficed to impart timely information to the public; to promote community participation and to bring down infection spread.

For India, restrictions like lockdown, isolation, quarantine etc caused severe mental strain and also economic constraints. The most affected are daily wagers like manual workers, bus and auto rickshaw employees, farmers etc. India applied social security measures like temporary shelters, food packages, and economic packages like moratorium for loans. Various States distributed ration, giving various food items. Economic packages consisted of measures for defence sector, MSMEs (Micro, Small and Medium Enterprises), labourers, industries and various other sectors as well as insolvency measures [9-10].

There is a criticism that India is not keen to actively test for the virus [11]. For India, access to testing and recourses optimization is Himalayan challenges. India which started with just 1 approved lab has now 901 such labs, with increased ability to test even up to 200000 samples per day [12]. ICMR (Indian Council for Medical Research) has already approved RT-PCR, TrueNat and ELISA based antibody test. Recently ICMR has approved the Standard Q COVID 19 Antigen Test also [13].

There is a modelling study predicting Covid-19 peak in India by mid-November 2020 based on the mathematical model by Scientific and Engineering Board of Government of India which claims total number of cases will reach a peak of 500000 by October 1<sup>st</sup> week and thereafter a downward trend [14]. ICMR does not agree with this study [13]. Dr. Soumya Swaminathan, Chief Scientist, WHO is of opinion that a second wave of infection is a possible risk as restrictions are cut down [15]. Media is playing a key role in disseminating valuable information to the public, in warning people against community spread and in giving daily statistics regarding the infection, like number of cases; number of deaths; number of cured patients etc.

The disease will definitely stay in this world for many more months. To protect ourselves and to prevent dissemination of infection to others we should strictly practise physical distancing, hand hygiene and wearing of masks as a way of living. We should not fear but should definitely be cautious and sensible. We should care for ourselves as well as for others, thereby protecting each and every one. Analyzing the present situation in India, things have taken a very serious and life-threatening turn. Initially India was placed at a very low position in the hierarchy, regarding total number of cases and deaths. Today India is in the 3<sup>rd</sup> position in cases as well as deaths, just behind USA and Brazil.

Perusing the latest statistics, the total number of cases is 1,002,674: and deaths 25,595. Number of patients who got cured are 635,244. That means active cases at present are 367,430 and recently the number of cases in one day was 30,202. This was the first time daily cases in India is crossing the 30,000 threshold. India has to take strict precautions at this stage. Unless people hold on strictly to preventive and protective measures like hand washing with

soap and water; or sanitizer; masks and physical distancing, India will have increased cases and will lose many precious lives. And if people are not strictly following these measures, government should take legal action against the “culprits” and should also strictly enforce the measures suggested by Health Authorities from time to time.

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