

## COVID-19 Pandemic: A hard lesson learnt

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In December 2019, World Health Organisation (WHO) declared Covid-19 virus (SARS-CoV-2) was responsible for the severe upper respiratory infection, spreading in a Wuhan province of China [1]. In the next few months it had spread across the globe. In March 2020, it was declared a pandemic by WHO [2]. It was about time when the disease would reach Indian subcontinent, due to lack of awareness among the people, would eventually spread to the masses. In the past, year 2002 and 2012 witnessed another similar disease with resembling pattern that had had spread in China and Middle east respectively. Namely, SARS and MERS-CoV, both family members of the coronavirus [3-4]. In the last two decades, these two viruses have caused documented epidemics with mortality rates of 9.5% and 34.4% [5]. CoVID -19 stands at the third position in mortality point of view. It has been proven that the proven fact that COVID-19 is having less mortality as compared to the former two but more contagious.

*Where do we stand after the Second wave:* In order to assess the impact we need to see this from a health and socio economic perspective. These may seem separate but inturn deeply intertwined. National figures stand at 2.9 Crore infected, 2.73 Crore recovered and 3.51 lakh deceased as documented [6].

*Availability of the vaccine development technology:* A new ray of hope and sigh of relief, would be the pace with which the vaccine was developed. It took Edward Jenner many years to discover the first smallpox vaccine in 1796. With the efforts of WHO, in an intense eradication programme, smallpox was eradicated in the

1970s. For the disease discovered in December 2019 and developing its vaccine in just one year, it took the effort of brilliant minds working together in synchrony. Even WHO had declared that there may be 18 months delay in vaccine availability. However, by June 2020 first vaccine was available in China. The genetic sequence of the Covid-19 was published in January 2020 which made things more smooth line. The discovery of the vaccine may be the silver lining however, it would take a herculean task to vaccinate the whole adult population of India. Availability of vaccines must be a top most priority and all documented data regarding each vaccine must be made available to public. This would make choosing a particular vaccine easy for individuals.

*Diagnostic tests available and their effectiveness:* RT-PCR (Real Time Polymerase chain reaction), a test that has become more famous investigation of choice in Indian household. However, the sensitivity of the test is limited by the sampling techniques as well as the laboratory processing technique. RT-PCR is an explicitly developed for RNA detection. It is based on two consecutive reactions. It is currently considered as the gold standard for the detection of Covid-19 virus particles. However, the samples taken from throat might lead to a false negative reports as the virus particles start moving towards lower respiratory tract after the first week. Samples taken from Bronchio alveolar lavage (BAL) give a more reliable reports [7]. Citing the invasive nature of the BAL, it is not possible in routine outpatient scenario.

*New drugs prospects:* Role of newer monoclonal antibodies is upcoming in the treatment of COVID-19.

Bamalanivimab was tested in randomised controlled trials (BLAZE-1) phase 2/3 at 49 US centers, upon patients presenting with mild to moderate symptoms. The observers checked for the viral load at day 11 of patients who were offered Bamalanivimab alone or along with Etesevimab and placebo. The study concluded with remarks that Bamalanivimab and Etesevimab combined use resulted in significant reduction in viral load at day 11 compared to placebo or Bamalanivimab monotherapy [8].

*Casirivimab and Imdevimab:* The central drug standard control organisation provided an emergency use authorisation to Casirivimab and Imdevimab combination 'cocktail'. Roche India and Cipla in collaboration announced its availability in India as 'Antibody Cocktail'. Its distribution is targeted towards the mild and moderate covid cases and pediatric patients (>12 years age or weight >40 kg), who are at risk for developing severe disease. These drugs act by mimicking antibodies specifically against the spike protein of SARS-CoV-2, hence preventing virus attachment and entry into the human cell. In a recent double blind phase 3 trial, the antibody cocktail has proven enhanced clearance of the virus in serum antibody negative subjects and who had high virus load as compared to the control group [9].

#### **What steps need to be taken:**

1. *Availability of the health care services to the masses:* India has a total of 43,486 private hospitals, 1.18 million beds, 59,264 ICUs, and 29,631 ventilators. On the other hand, there are 25,778 public hospitals, 713,986 beds, 35,700 ICUs, and 17,850 ventilators. Total private infrastructure accounts for nearly 62% of all of India's health infrastructure [10]. Making the things worse, in the latest report released by Human Development Report 2020, India has 5 beds per 10000 population and 8.6 doctors per 10000 population. Consequently, we stand at 155 rank among 167 countries of the world [11]. India is a host to the world largest insurance scheme namely 'Ayushman Bharat Yojana' which is proving to be underfunded in today's scenario. Improving the existing public health infrastructure as well as promoting private health sectors with norm relaxation and specialist trainings in public hospitals could prevent the ill effects of third wave.
2. *Health awareness campaigns and vaccination:* The awareness campaigns to educate general public regarding the masks, social distancing and hand hygiene were kicked off in full enthusiasm by public and private corporations alike. It would be advisable to utilise the existing infrastructure and link the other common communicable and non communicable diseases like Tuberculosis, Dengue and Malaria etc. resulting in a multipronged attack on the commonest health problems. Utilisation of the electronic media interface for publishing accurate health information for all. Prompt availability of diversified vaccines must be made available to the individuals. All concerns regarding safety must be managed via social platforms and panel discussions.
3. *School education:* The existing National Education Policy revised in 2020, focuses on multidisciplinary and holistic approach to education. This includes the convergence of education with nutrition (Mid-day meal programme), integration of sports and physical fitness as an additional development parameter. Basic health etiquettes can be taught to the young budding minds of India. Inclusion hygiene and health awareness must be part of the curriculum with serious effect.
4. *Increase testing capacity and enhancing the quality:* In a WHO report in August 2020, the number of laboratories performing molecular test for COVID-19 detection rose from 14 to 1596 within a span of 5 months. It took quantum leaps by consolidating the existing resources with help of ICMR and Ministry of Health and family welfare. With advancing knowledge about SARS CoV2, and availability of genome sequence of the virus, new rapid antigen detection kits must be made available. These testing kits with clear sampling instructions to containment zones and remote areas. In this way the hospital visits would not be

required and existing burden on healthcare system will be reduced. Detection of faster testing kits that do not rely on trained personnel, advanced reactions and equipped laboratories. Antibody and serology testing kits development, to detect the cured Covid 19 patients.

5. *Judicial reviews for the rule of law:* No doubt, the pandemic inevitably resulted in restricted fundamental rights of the people. There is a general consensus that lockdown was an act to violate the citizen's right to health, food, livelihood, equality and non-discrimination. An existing grey zone defining the permissibility of upholding and violation of the fundamental rights must be clearly defined. It is a tough task to blame the person responsible for the loss of life of a Covid patient in pandemic, but it is equally tenacious to obviate the fundamental rights of the normal individuals. Harsh laws against the corrupt indulging in black marketing and

illegal rationing is need of the hour. With new costly treatment variants coming in the market, chances of similar pilferage are predictable. Amendments in the erstwhile pharmacy laws is a compulsory prerequisite.

We all know the recent turn of event that engrossed the whole world in the form of COVID-19 pandemic. It has showed the full spectrum of human emotions from across the globe. We must endorse the brave accolades of the jostling medical health professionals working tirelessly in the pandemic. It has become utter chaotic mush mosh, the bundle of big ball where the humanity and politics intertwined beyond recognition. A common analogy circulating among the public opinion mongers is that our health system failed miserably, but looking optimistically, the burden could have been a lot more citing the health infrastructure.

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