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COVID-19: The Biggest Medical and Pharmaceutical Challenge of the 21st Century

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Coronavirus Disease 2019 (COVID-19), a new viral infection, has been spreading all over the world since Dec. 2019 from its origin in Wuhan (Hubei Province, China) where it was first identified. After spreading across most areas in the world, the World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020. There is no certain effective medicine nor vaccine yet and the infection is still proving fatal to people all around the world.

Although Covid-19 at least so far has not turned into the biggest pandemic nor the most fatal viral infection in the history and probably would not be, it may become the biggest challenge to find an effective protocol for the treatment or prophylaxis of such an infection. Compared to around 280 thousand deaths by COVID-19 at the time of preparing this article: May 10 2020, Human Immunodeficiency Virus (HIV) infection, for example, has killed more than 36 million people since 1980. However, the route of transmission: respiratory droplets and contact, and the highly contagious nature of novel corona virus is the main dreadful aspect of this insidious element. Most of the countries have been negatively affected in different socio-economic aspects. Many people have lost their jobs or at least have suffered a huge setback. Although some positive points such as decreased air pollution due to lesser use of cars or halting factories and industries can be mentioned for this pandemic, some other health problems such as increased psychological problems due to tremendous socio-economic effects of self-quarantine have emerged.

Intense work is ongoing to find a way to stop the infection and death of people by the virus. Medicines with different mechanism of action and from different classes of antivirals ranging from oseltamivir, ribavirin, favipiravir, atazanavir, lopinavir/ritonavir, remdesivir, umifenovir, sofosbuvir and so on, have been tested in addition to some non-antiviral drugs such as chloroquine, hydroxychloroquine, methylprednisolone, colchicine, azithromycin, fingolimod, and some biological agents such as tocilizumab, sarilumab, bevacizumab, leronlimab, bemcentinib, human intravenous immunoglobulin (IVIG) etc. along with many traditional agents. These medications have been used in real practice or in clinical trials, but unfortunately there is still no proved treatment protocol.

Some experts believe that new corona virus would not disappear soon and would possibly stay with us for several months or even years, and some recent uncertain findings suggest that previously infected and recovered patients are still not fully immune and can be re-infected by novel corona virus. Based on our previous experiences in viral pandemics such as H1N1 influenza, should we want to return to normal life, we need to find some effective drugs for the treatment and more importantly make an efficient vaccine for the prophylaxis.

Dozens of researchers and pharmaceutical companies are working hard to find a better therapeutic option for treatment along with a potential vaccine. It is unclear when we will find an acceptable and effective protocol against COVID-19, but hopefully we can assume to find the panacea, and then maybe the world's next challenge would be to select who can have access to the treatment and how health organizations can provide the availability of therapeutic agents and vaccines for all people, especially for those living in countries with low economic and health

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status. In all, there is a highlight of a previously well learnt lesson in this recent pandemic and some politicians might not like it; We are fighting the same foe and are all tied in with this and we have to accept that all of us might be influenced by the life styles of people living in quite far away corners of the world.