

Editorial

Covid-19: Vaccine is the ultimate weapon

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In the realm of infectious diseases, a pandemic is the worst-case scenario. Pandemic, however, is nothing new in human history. Communicable diseases existed even in the pre-historic period i.e., during our hunter-gatherer days. But the shift to agrarian life some 10,000 years ago created communities that made epidemics more possible. The more civilized humans became, building cities and forging trade routes to connect with other cities and regions, and waging wars with them, the more likely pandemics became.

Some of the worst pandemics our world witnessed had been the Justinian Plague in 541 A.D., the first significant appearance of bubonic plague caused by *Yersinia pestis* and the recurrence of which in the next two hundred years killed about 50 million people; the Black Death of 1350 was the second largest outbreak of bubonic plague, which was responsible for the death of an astonishing 20 million people in just four years; The Columbian Exchange in 1492, when the Spanish colonizers brought smallpox, measles and bubonic plague to the Caribbean with 90 percent of the indigenous people dying who had no previous exposure to these diseases, and eventually during 1520 the Aztec civilization was destroyed by successive pandemics; The Great Plague of London that wiped out 20 percent of London's population in 1665; and the deadly Spanish flu of 1918 that became responsible for 50 million deaths worldwide.

As for how to stop spread of these diseases, people in those eras had little knowledge, but they eventually realized it had something to do with proximity. During the Black Death plague, some forward-thinking officials of Europe started to isolate newly arrived sailors for 30 days

(*trentino*) and then up to 40 days (*quarentino*), which is the origin of the word "quarantine". Social distancing was also practiced in those days to slow down the spread of pandemic.

In the historical context, it thus can be said that the Covid-19 pandemic has so far been a much less killer pandemic than many of its predecessors. When the first waves of plague and other pandemics hit the world, our ancestors had little knowledge about their origin and ways to fight them. Centuries of research and technological development have now empowered us with at least some general tools to combat pandemics like Covid-19. There is no reason for us today to panic.

However, we cannot let our guards down either. There is a consensus that Covid-19 is going to stay here for some time to come. It would thus be prudent for us to learn to live with it-primarily by adopting preventive and social measures in our daily life and, certainly, vaccination. Although the first reported case appeared in China on November 17, 2019, the World Health Organization announced on March 11, 2020, that the COVID-19 virus was officially a pandemic after barreling through 114 countries in three months and infecting over 118,000 people. It was found that COVID-19 is caused by a novel coronavirus-a new coronavirus strain that had not been previously found in people. Humanity stood in front of a new disaster, cure for which had been unknown. We also did not have a vaccine in our armoury against this hitherto unknown strain of coronavirus.

Without a vaccine available, the virus spread throughout the world unabated, and by December 2020, it had infected more than 75 million people and led to 1.6 million deaths. The COVID-19 death toll, as of 11 November 2021, has crossed five million with over 252 million positive cases. In Bangladesh, the numbers are 27,906 deaths and over 1.5 million cases respectively.

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Although there is an apparent decline in coronavirus cases in the recent days, some alarming signs are appearing in some parts of the world with resurgent number of cases, mostly due to the Delta variant. We are yet to see the end of this pandemic. History testifies, however, that human resilience is what finally stands up. Humanity witnessed dozens of much more serious pandemics, but our ancestors honed critical survival strategies such as social distancing and quarantine in the medieval times, which has proved to be of critical significance in the current pandemic as well.

Ever since the pandemic broke out, the scientific community rushed to find its curative and preventive solutions. Since vaccine development is usually a long-drawn process, requiring stringent procedures to follow-regarding their efficacy and safety, scientists and physicians all around the world worked to find medicines for treating this deadly menace. Not much success could be reported. Several existing anti-viral drugs were administered, in different combinations, with no visible and consistent record of positive results. Management of COVID-19 cases thus, so far, depended mostly on symptomatic treatment and critical care management of the victims.

It was only about a week ago that the UK government approved emergency use of the first oral anti-viral pill that its US developer claims to target the coronavirus currently running a global havoc. *Molnupiravir*, which would act by introducing errors in the genetic code of the virus, and would, thereby, interrupt its replication process-would thus help keep the viral content low and reduce its severity. The pill, administered twice a day in symptomatic COVID-19 cases, is expected to reduce the risk of hospitalisation and death by half. Bangladesh has already authorised emergency use of *Molnupiravir*, and several Bangladeshi pharmaceutical companies are hurrying its production.

The ultimate weapon in fighting COVID-19, nevertheless, remains to be the anti-COVID-19 vaccine. Fortunately, scientific community's endeavour in developing the vaccine resulted into great success. As many as 25 vaccines have so far been approved by different national authorities, and seven of them have been approved for emergency or full use by at least one WHO-approved stringent national authorities. Most of the countries, including Bangladesh, have gone full-throttle on vaccinating their populations-with encouraging results. So far, some

7.36 billion doses of coronavirus vaccine have been administered, fully vaccinating around 3.16 billion (40.5%) people around the world. In Bangladesh, prompt governmental measures have resulted so far to administering over 81.1 million Bangladeshis, fully vaccinating some 32 million people (19.4%), and the vaccination programme is going on in full swing-targeting people from most age-groups.

Despite the obvious success of the vaccines in fighting the pandemic, discussions remain abundant about the duration of protection that these vaccines may provide. Several studies have indicated that antibody level developed through the administration of anti-coronavirus vaccines may begin to decline within months, and perhaps this warranted booster dose. Some other ongoing researchers, however, are trying to find out to what degree the immune system's safeguards that protect vaccinated people against COVID-19-induced severe disease, hospitalisation and death might be fading as well, and whether despite the declining antibody level, "immune memory/cellular immunity" can still be useful in protecting people from COVID-19 for a longer period. Now that the pandemic is under our somewhat control, we can hope that the humanity will certainly go beyond this pandemic as well, just as our ancestors did on several occasions.