Letter to the Editor

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Is There an Ending in Insight for COVID-19?

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Dear Editor

The earliest reports of the disease that became known as Coronavirus disease–2019 (COVID-19) were from Wuhan in China in December 2019. COVID-19, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was announced as a pandemic by the World Health Organization (WHO) in March 2020 (1, 2). Since then, many countries have been hit by several waves of the COVID-19 pandemic which has resulted in over 550 million cases and 6 million deaths and the near collapse of numerous health care systems and economic states of most countries globally (3). The global response to COVID-19 has focussed on bringing down the transmission rates to protect vulnerable subjects and prevent further socio-economic damage.

The infectious burden of SARS-CoV-2 variants depends on the proportion of asymptomatic infected individuals and recent studies suggested that 40% of people infected with the recent SARS-CoV-2 variants were asymptomatic (4, 5). This indicates that the new SARS-CoV-2 variants have important differences to earlier variants in that the number of asymptomatic infections has increased whilst the severity of diseases has decreased. For example, the omicron variant is more transmissible than the delta variant but much less infectious. This also highlights the rapid mutation rate of SARS-CoV-2 and suggests that the pandemic is far from over and that new mutations can still emerge. Subsequent mutations in SARS-CoV-2 will probably remain highly transmissible but there is a risk that the viral adaptations may result in more pathogenic variants. These may or may not escape the current immunization strategies, diagnostics and therapeutics and impact upon current herd immunity.

With this in mind, several questions need to be addressed including when will the COVID-19 pandemic stop and why the current pandemic continues after more than 2 years?

To answer these questions we must consider the development of herd immunity which requires that a substantial proportion of a population needs to be vaccinated before we obtain a reduction in the overall spread of the virus throughout the whole population (6). We do not know the proportion of the population that must be vaccinated against COVID-19 or the levels of asymptomatic infection required to induce herd immunity which impacts upon prolonged presence of SARS-C0V-2 infection. In some countries this remains an important scientific and ethical problem that will require co-ordinated research and money to overcome which means that the impact on low-middle-income countries will remain.

The disparity in region-wise vaccination rates will remain a potential risk for the foreseeable future. For instance, higher incidences of infection in low economic zones imply a higher mutation rate and a higher risk of new virulent mutants, which can again spread globally. Although vaccines have been developed at a record pace to fight the pandemic, the emergence of SARS-CoV-2 variants that can evade vaccine-induced immunity could cause new waves of infections. The rapid mutation rate of the SARS-CoV-2 virus compounds this issue. Thus, pre-symptomatic transmission and asymptomatic patients delay the contact tracing, quarantining, and effectiveness of current pandemic mitigation measures. The world-wide co-ordinated efforts to control the spread of the virus are important and necessary to mitigate the pandemic and will remain in place for the foreseeable future.

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