

Editorial

Viral Evolution will Automatically Resolve COVID-19 Pandemic

The entire focus of the world is presently on COVID-19 and the incessant question in everybody's mind is: When will we get rid of it? As of June 2020, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has already infected ~10 million people across the world, resulting in ~0.5 million deaths. Though these fatalities are far less than those due to several other diseases such as tuberculosis, the unavailability of a drug or vaccine is the primary cause of widespread panic. The perennial success of various deadly pathogens (for instance, *Mycobacterium tuberculosis*) is attributed to their ability to co-exist within the host (human) for decades. This has a very simple underlying rationale - if a pathogen kills the host, it kills itself as well. Hence, due to evolution, the most virulent strains of SARS-Cov-2 virus (with very high mortality) will eventually automatically get eradicated and the less virulent strains will propagate.



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In support of the above hypothesis, the lethality (number of deaths per 100 infections) of SARS-Cov-2 virus has been continuously decreasing over the past three months across the world (Fig. 1). This indicates that its mortality rate will be less than 1% by the end of August 2020 (similar to that of seasonal flu). However, this is an over-simplistic assumption, since the observed decrease in mortality is not solely due to reduced virulence. Several other factors, such as (i) early diagnosis, (ii) improved understanding of disease resulting in better management/treatment of patients, and (iii) plasma therapy are important additional contributors. Taking into account, all these determinants suggest that the trend for virulence reduction will be flatter (Fig. 1). However, to determine the slope with certainty, a more thorough analysis (including evaluation of individual weightage of these contributory factors as well as variations in test protocols and record keeping) needs to be done when such data is available. Nevertheless, the mortality of novel coronavirus will (hopefully) be akin to seasonal flu by the end of September or beginning of October 2020, though the infections resulting in mild or no symptoms might continue for many more months.

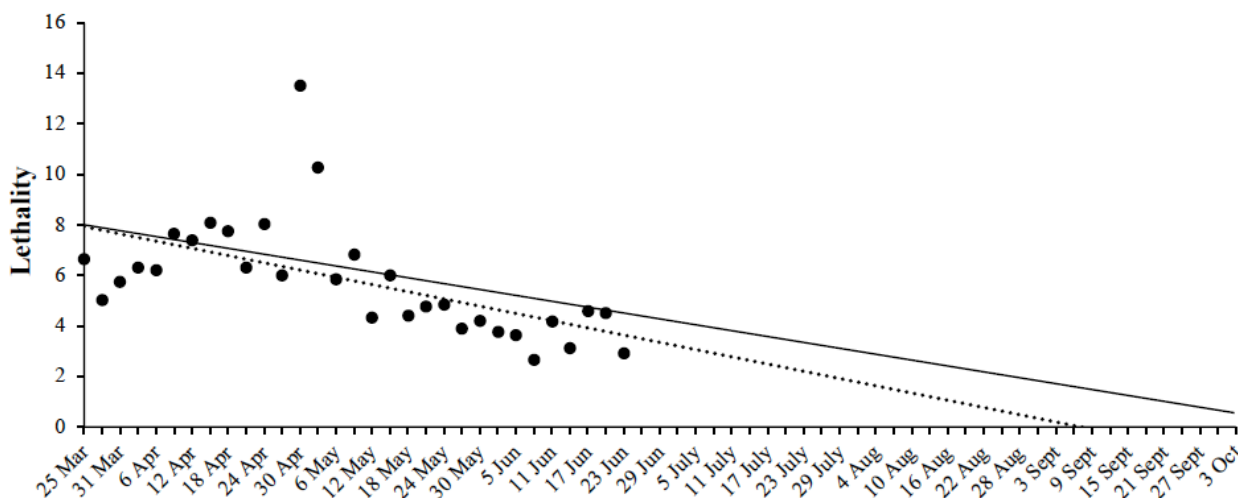


Fig. (1). The lethality/mortality rate of SARS-CoV-2 has been continuously decreasing (dashed line; data obtained from WHO website). Of course, as mentioned in text, the trend (black line) for virulence reduction will have a flatter slope.

Unfortunately, there is no biomarker to distinguish whether the infection is going to be mild or severe. The high number of mild COVID-19 cases are putting huge pressure on healthcare services worldwide. The difficulty in making accurate prognosis is further increased due to the effect of genetics, demographics, age, immune status and co-morbidities. Moreover, since the introduction of a safe and effective drug or vaccine for masses is unlikely to happen this year, let us hope that this prophecy comes true!

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