Vacunas

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Letter to the Editor

Simultaneous occurrence of seasonal influenza virus and SARS CoV-2 strains

Circulación simultánea de virus de la gripe estacional y cepas SARS CoV-2

A baffling pathogen called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), initially termed as 2019-nCoV, is the lone cause of the current pandemic, spanning across six continents.[1] The causative agent of coronavirus disease 2019 (COVID-19) was isolated from a surge of subjects that were referred to hospitals with flu-like illness and its rapid spread is having a major impact on cultural, economic and social aspects. SARS-CoV-2 that originated from Wuhan, Hubei province at China's mainland is admissibly considered a serious threat to human life due to its high contagiousness, poorly known pathogenesis, and potential to result in severe outcomes such as ARDS and multi-organ failure within a short period of time following disease onset.[2] Foreseeably, there are three putative outcomes of the current SARS-COV-2 pandemic. First and most conspicuous approach is to develop a preventive vaccine that can heighten herd immunity against SARS-CoV-2 and avert new COVID-19 cases. There are numerous research groups relentlessly working to provide such a biological product, but unfortunately, it is not practical to envisage this product within a period shorter than 10–15 months from now (April 2020). Development and approval of the vaccine against SARS-CoV-2 for mass administration across the world at this stage seems like a farfetched idea as well. Second approach could be the discovery and introduction of an effective anti-viral agent which is the most challenging ordeal during an uncontrolled outbreak.[3] Notably, there are some candidates in the pipeline yet to be approved by international organizations like FDA, while the definite effectiveness of these drugs can only become apparent to scientists over time. The third possible outcome is flattening the epidemic curve by effective lockdown, isolation of COVID-19 positive subjects by PCR, quarantine of contacts, active screening and case finding, social distancing, hand hygiene, use of masks, and so on. Fourth predictable scenario is to wait for the spontaneous cessation of the pandemic, which is the most inert approach at this point. It may mean that we reluctantly accept this unwelcome guest in our clinics and even deal with it annually, whether it's mild or severe. The historic concepts of herd immunity make this epidemiologic measure a plausible option, although there is no consensus on generalizing it to all populations with scarce knowledge about case fatality rate of SARS-CoV-2. Apart from the above four mentioned scenarios, we hypothesize a possibility of an ongoing pandemic caused by two super-spreading agents, the SARS-CoV-2 and seasonal flu. The clinical dilemma involved here is that more than 80% of coronavirus symptoms tend to be mild which makes it difficult to differentiate it from flu. The coincidental occurrence of such viral infections may be uncountable if it appears at the time of a flu epidemic.[3]

Furthermore, another predictable situation is a new mutated strain of SARS-CoV which could be named SARS-CoV-3 causing COVID-20 or COVID-21 in the upcoming years, and in contemporaneous occurrence with seasonal influenza virus. We speculate that the threat of such a coincidence could be far greater for public health. Consequently, there is a need to remain vigilant of an overlap between influenza virus and SARS-CoV-2 during expected periods of seasonal flu. Seasonal influenza is transmitted via droplet which is also the predominant mode of transmission for SARS CoV-2. Relatively similar symptoms and transmission routes, (droplet and close contact between infector and infected) are supporting evidence and a cause for concern in the coming months of 2020 and 2021. Although mortality rate for COVID-19 (around 3%) is higher than flu (less than 0.1%), the more severe consequences of such co-infections may result in detrimental clinical outcomes.[4,5] Although a global action was suggested to battle COVID-19 pandemic, we need more rigorous measures to withstand upcoming outbreaks which could be a conglomeration of infections by both viruses. In conclusion, application of compulsory influenza and pneumococcal vaccines especially for population older than 65 years are highly recommended.

Authorship and manuscript preparation

Amin Talebi and Nicola Petrosillo contributed to the conception of the work, performed literature searches, drafted the initial text, and approved the final version for publication. Anjana Rao Kavoor and Amin Talebi revised the manuscript for important intellectual content, contributed to the ideas and discussions presented in the letter, edited and drafted the manuscript, and all approved the final version of the manuscript for publication. The views presented in this letter are of the authors and do not represent the views of their employers.

Ethical approval

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Conflict of interest

The authors declare that they have no conflict of interest.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.vacun.2020.08.001.

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