Journal of Investigative Medicine High Impact Case Reports
Volume 8: 1

DOI: 10.1177/2324709620953282
journals.sagepub.com/home/hic
SAGE

Can Coinfection With Influenza Worsen COVID-19 Outcomes?

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To the Editor:

We read with great interest the recently published article titled "A Case Series of Patients Coinfected With Influenza and COVID-19."[1] The authors should be commended for their dedication and timely report of COVID-19 cases. We agreed with most of the statements and would like to highlight that clinicians should be aware of possible respiratory viral coinfection in COVID-19 patients. However, our major concern is the premature conclusion that influenza coinfection does not worsen COVID-19 prognoses. Theoretically, influenza may adversely affect COVID-19 prognoses by upregulated inflammatory cells aggravating overly activated immune responses in COVID-19. Also, a recent study demonstrated that SARS-CoV-2 receptors, ACE 2, are interferon-stimulated molecules, so influenza virus, which is a potent interferon inducer, promotes ACE 2 expression.[2] An increase in ACE 2 expression may worsen COVID-19 severity.

Considering emerging evidence, we found that a study from Wuhan, China, addressed this issue.[3] The study compared COVID-19 outcomes between 44 influenza/SARS-CoV-2–coinfected and 49 isolated SARS-CoV-2–infected cases. The authors found that the incidence of acute cardiac injury was greater in influenza/SARS-CoV-2 than SARS-CoV-2 nonsurvivor groups, although the overall mortality was not different. However, the study included only critically ill patients, so it may be difficult to detect COVID-19 mortality differences. Another interesting finding in this report is that influenza/SARS-CoV-2 nonsurvivor had substantially higher neutrophils and inflammatory markers than SARS-CoV-2 nonsurvivor groups. This may support the theory that influenza coinfection can provoke COVID-19 hyperinflammatory states.

Until further evidence is available, we should not conclude that influenza coinfection does not affect COVID-19 clinical courses and mortality.

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