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Risk of cardiovascular events and death according to COVID-19 reinfection

Marko Kozyk, Alla Navolokina, Anastasiia Bondarenko

European School of Medicine, International European University, Kyiv, Ukraine

The coronavirus disease 2019 (COVID-19) pandemic has significantly changed the health care system and turned medical services dysfunctional [1, 2]. During the pandemic, many reports were heard about the impact of COVID-19 infection on the cardiovascular system [3–5]. We now have access to much larger studies that reveal this phenomenon not only in the context of one infection but also reinfection. Data from the United States Department of Veterans Affairs' national healthcare database shows that each severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) reinfection raises the probability of death, being hospitalized, and developing long-term effects on different organs and systems. Compared to the no-reinfection group (n = 5,334,729), reinfection group (second time or more) (n = 40.947) increased the risk of death (hazard ratio [HR] = 2.17), hospitalization (HR = 3.32) and consequences — pulmonary (HR = 3.54), cardiovascular (HR = 3.02) and renal (HR = 3.55). This risk persisted for up to 6 months (follow-up) and was independent of vaccination status. Compared to uninfected controls (n = 5,334,729), the burden of reinfection resulted in a cumulative risk depending on the number of infections; those who had only one infection had an increased risk of at least one of the sequelae at HR = 1.37, the risk was higher in those who had two infections (HR = 2.07), and the highest risk was in those with three or more infections (HR = 2.35) [6]. These studies indicate a significant problem that will be faced in the health care system and significant increases in the population of patients treated by cardiology specialists. Therefore, one of the most important tasks that should still be in force is reducing the number of infections through vaccination and personal protective equipment. Despite the fact that the public is not enthusiastic about it, they should also be informed and educated on what it entails. As we know, vaccination significantly reduces the risk of a severe course, but the latest vaccinations and booster doses aimed at new variants will significantly help us reduce the number of infections and, consequently, the side effects of diseases even in groups of patients who do not have a severe course of the disease [7–9]. In the context of epidemiology, widespread testing of infected people should also be restored, as is currently the case in many countries, such as China, which has recorded numbers of infections since the beginning of the pandemic. Widespread testing as well as self-testing and self-isolation would significantly reduce the number of infected people, especially with highly infectious variants such as Omnicron, which, despite the overall lower risk of a severe course, may contribute to the complications mentioned above [10].

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References

1. Smereka J, Szarpak L, Filipiak K. Modern medicine in COVID-19 era. Disaster Emerg Med J. 2020; 5(2): 103–105, doi: 10.5603/demj.a2020.0012.
2. Dzieciatkowski T, Szarpak L, Filipiak KJ, et al. COVID-19 challenge for modern medicine. Cardiol J. 2020; 27(2): 175–183, doi: 10.5603/CJ.a2020.0055, indexed in Pubmed: 32286679.
3. Gasecka A, Pruc M, Kukula K, et al. Post-COVID-19 heart syndrome. Cardiol J. 2021; 28(2): 353–354, doi: 10.5603/CJ.a2021.0028, indexed in Pubmed: 33645626.
4. Szarpak L, Pruc M, Filipiak KJ, et al. Myocarditis: A complication of COVID-19 and long-COVID-19 syndrome as a serious

Address for correspondence: Dr. Alla Navolokina, European School of Medicine, International European University, Akademika Hlushkova Ave, 42B, Kyiv, Ukraine, tel: +380673772377, e-mail: allanavolokina@ieu.edu.pl

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threat in modern cardiology. Cardiol J. 2022; 29(1): 178–179, doi: 10.5603/CJ.a2021.0155, indexed in Pubmed: 34811716.
5. Nucera G, Chirico F, Rafique Z, et al. Need to update cardiological guidelines to prevent COVID-19 related myocardial infarction and ischemic stroke. Cardiol J. 2022; 29(1): 174–175, doi: 10.5603/CJ.a2021.0120, indexed in Pubmed: 34642925.
6. Bowe B, Xie Y, Al-Aly Z. Acute and postacute sequelae associated with SARS-CoV-2 reinfection. Nat Med. 2022; 28(11): 2398–2405, doi: 10.1038/s41591-022-02051-3, indexed in Pubmed: 36357676.
7. Surie D, Bonnell L, Adams K, et al. Effectiveness of Monovalent mRNA Vaccines Against COVID-19-Associated Hospitalization Among Immunocompetent Adults During BA.1/BA.2 and BA.4/BA.5 Predominant Periods of SARS-CoV-2 Omicron Variant in the United States - IVY Network, 18 States, December 26, 2021-August 31, 2022. MMWR Morb Mortal Wkly Rep. 2022; 71(42): 1327–1334, doi: 10.15585/mmwr.mm7142a3, indexed in Pubmed: 36264830.
8. Gozhenko A, Szarpak L, Jaguszewski M, et al. COVID-19 vaccine — third dose, booster dose? What is it and is it necessary? Disaster Emerg Med J. 2021; 6(4): 208–209, doi: 10.5603/demj.a2021.0027.
9. Chirico F, Sagan D, Markiewicz A, et al. SARS-CoV-2 virus mutation and loss of treatment and preventive measures as we know it now. Disaster Emerg Med J. 2021; 6(4): 204–205, doi: 10.5603/demj.a2021.0025.
10. Evrin T, Szarpak L, Pruc M. Self-testing as a method of reducing COVID-19 infections. Disaster Emerg Med J. 2021; 6(2): 94–95, doi: 10.5603/demj.a2021.0011.