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Potential value of heparin in COVID-19 related cardiovascular disease



Dear editor, we read with great interest an article in your journal about the burden of cardiovascular disease during the COVID-19 pandemic [1]. Obviously, it brings great challenges to the clinical recovery of patients. However, based on the implications of your research, we cannot ignore the issue of cardiovascular disease associated with COVID-19. To the best of our knowledge, angiotensin-converting enzyme 2 (ACE2) is the key factor that novel coronavirus can infect cells and further cause disease of related organs [2]. This is also the pathophysiological basis of multiple organ involvement of COVID-19. However, the cardiovascular system is rich in ACE-2 expression, so this may also be a key factor in the cardiovascular system involvement of COVID-19.

With the ongoing and potential risks of the outbreak, there is increasing clinical evidence of COVID-19-related cardiovascular system involvement, including arteriovenous thrombosis and cardiovascular inflammation. From this point of view, antiviral inflammatory treatment and prevention of thrombosis are particularly important to improve the prognosis. In particular, we discuss the potential value of heparin in combating COVID-19 and its cardiovascular adverse effects.

Recent studies have shown that heparin exerts anti-inflammatory effects mainly by inhibiting the interaction between HMGB1 and lipopolysaccharide (LPS) [3]. Novel coronavirus infection of the cardiovascular system significantly increased heparin-binding protein levels [4]. Therefore, the potential mechanism of heparin against cardiovascular inflammation caused by COVID-19 is clear. In other words, heparin has a one-shot effect on novel coronavirus cardiovascular infections.

The potential value of heparin as a new clinical strategy in cardiovascular anti-inflammatory and anticoagulation is of great significance for improving the clinical prognosis of patients with COVID-19. Robust clinical randomized controlled trials are needed to further validate the multiple effects of heparin on cardiovascular infection in COVID-19 so that more patients can benefit.

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Consent for publication

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Declaration of Competing Interest

The authors declare that they have no competing interests.

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