Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

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Pitfalls of Unfractionated Heparin Use During ST-Segment Elevation Myocardial Infarction in Patients With COVID-19 Infection

We read with great interest the paper by Choudry et al. (1) that reported the higher thrombus burden in patients with ST-segment elevated myocardial infarction (STEMI) with COVID-19 infection and the corresponding higher rate of multivessel thrombosis, stent thrombosis, and thrombus extension during percutaneous coronary intervention (PCI) (1). The investigators showed that higher unfractionated heparin (UFH) doses were needed to achieve and maintain the activated clotting time (ACT) target of >250 s compared with that in patients without COVID-19 infection. Although the data supported the highly pro-thrombotic status during STEMI in patients with COVID-19, the conclusions regarding the anticoagulation strategy were incomplete. Major relevant information is missing, including the timing of UFH administration, baseline ACT levels, UFH weight-adjusted doses rather than absolute dosage, and the type of ACT device. Therefore, it is difficult to discriminate a real increase in UFH requirements, a misleading ACT due to influencing factors (platelet dysfunction induced by glycoprotein IIb/IIIa inhibitors more frequently used in COVID-19), or a part of UFH resistance (antithrombin deficiency) in patients with COVID-19. Moreover, differences were not statistically significant.

This work highlighted the loss of correlation between ACT values and UFH doses in patients with COVID-19. Thus, response to UFH became unpredictable, and this exposed to a suboptimal anticoagulation during PCI while the thrombotic risk was high. The optimal anticoagulation regimen in patients with STEMI with COVID-19 undergoing PCI remains unknown. The intravenous low-molecular-weight heparin enoxaparin has a more predictable dose–response relationship than UFH, provides more stable anticoagulation, and does not need monitoring or dose adjustment. This makes it an interesting alternative to UFH in association with dual antiplatelet therapy, especially because this is consistent with STEMI guidelines (2) and supported by the efficacy of low-molecular-weight heparin in preventing venous thrombosis in patients with COVID-19 (3).

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

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