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LETTER TO THE EDITOR

Venous thromboembolism after COVID-19 mRNA vaccination

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Dear Editor,

In a recent 'Letter to the Editor', Atoui et al. describe a patient, heterozygous for the FVL G169A mutation and homozygous for the MTHFR A1298C mutation, who developed a right leg deep venous thrombosis and pulmonary embolism 24 h after a second dose of Pfizer BioNTech mRNA COVID vaccine [1]. Following an initial inpatient admission, the patient was discharged on apixaban oral anticoagulation of unstated duration.

Venous thromboembolism (VTE) following the Pfizer BioNTech mRNA COVID vaccine appears to be a rarely reported complication, and a recent retrospective cohort study of Danish frontline personnel who received priority COVID-19 vaccination showed no statistically significant association of the Pfizer BioNTech mRNA COVID vaccine with thrombotic or thrombocytopenic events [2]. Amongst the Danish population, approximately 6% are heterozygous for the FVL G169A mutation [3] and the frequency of homozygosity for the A1298C variant of the MTHFR gene is expected to be about 14.6%, based on data from a Scottish population [4]. The lack of an association between the Pfizer vaccine and thrombosis in the Danish frontline personnel, thus, makes it unlikely that the Pfizer vaccine promotes VTE, even in the presence of mild thrombophilia. Therefore, episodes of severe VTE shortly after the Pfizer BioNTech mRNA COVID vaccine might well be regarded as unprovoked and require longer term anticoagulation, with the accompanying risk of anticoagulant related major bleeding. However, although unproven, it remains possible that, in some types of thrombophilia, VTE might, indeed, be provoked by the Pfizer vaccine. In this latter scenario, shorter-term anticoagulation, paradoxically, might be appropriate. However, once off anticoagulation, such patients could be at greater risk of VTE recurrence with further COVID-19 vaccine doses and might require prophylactic anticoagulation. Unfortunately, insufficient data exist at present to determine the optimal therapeutic approach for patients who develop VTE following the Pfizer BioNTech mRNA COVID vaccine. A concerted effort to collect follow-up data on patients developing VTE shortly after COVID-19 vaccination would help to clarify matters and guide future anticoagulation management.

Declarations

Human and animal rights and informed consent This article does not contain any studies with human participants or animals performed by the author.

Conflict of interest The author declares that he has no conflict of interest.

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