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Acute management of suspected vaccine induced thrombocytopenia and thrombosis

Authors: Sarah Dalrymple,[A] Sunil Patel,[A] Clementine Fraser[A] and Rachel Tennant[A]

Introduction

In 2021 vaccine induced thrombocytopenia and thrombosis (VITT) emerged as an adverse event following COVID-19 vaccination. VITT is rare; nevertheless, it can lead to catastrophic thrombosis and secondary haemorrhage with high mortality.[1] Studies show that patients with VITT have thrombocytopenia at presentation and subsequent coagulation abnormalities on available assays.[2] At our district general hospital (DGH), patients with suspected VITT but normal platelet counts were found to have had further VITT investigations such as D-dimer, fibrinogen and in some cases, neuroimaging. Unnecessary diagnostic tests have a significant financial burden on healthcare.

Methods

We conducted a retrospective analysis of adult patients (>18 years old) presenting to the emergency department (ED) with acute headache following administration of at least one COVID-19 vaccination. We audited against standards published by the Royal College of Physicians and Royal College of Emergency medicine on management of suspected VITT in April 2021 and then re-audited against updated guidance published in May 2021 to close the loop.[3]

The audit period included patients presenting to the emergency department (ED) between 1 February 2021 and 31 August 2021. An anonymised electronic reporting form was developed to capture the following data: triage presentation, discharge destination, brand of vaccine, days since vaccination, platelet count, D-dimer, fibrinogen and neuroimaging.

Results

176 patients were included in the audit. 36 patients presented before formal guidance was issued. Seventy-two patients were included in audit cycle 1 and 68 patients were included in cycle 2. There was one case of VITT in a patient with thrombocytopenia. The median day of presentation to ED post vaccine dose was 7 days in cycle 1 and double that (14 days) in cycle 2. 67% of patients presented in the window for suspected VITT in the first cycle and 81% presented during the updated interval post-vaccine in cycle 2. In cycle 1, 2.8% of patients were thrombocytopenic; nevertheless, 37% and 31% of patients had a D-Dimer and fibrinogen sent respectively. In cycle 2 no patients were thrombocytopenic; nevertheless, 32% had a D-Dimer sent and 16% had a fibrinogen assay added. 25% of patients in cycle 1 had neuroimaging done with a normal platelet count and this increased to 40% in cycle 2.

Conclusion

VITT is a new occurrence following the roll-out of the COVID-19 vaccination program and guidance was only established in April 2021. Our data demonstrated that there were no cases of VITT with a platelet count of $>150 \times 10^9$/L. Our data suggest we can be confident in the parameters set in national guidance. Our data also reflects current literature demonstrating that VITT is rare; nevertheless, when associated with significant clotting, abnormalities can be fatal.[2]

This audit shows that in the investigation of VITT at our DGH, that while the triaging of patients to a suspected diagnosis is high there is a poor adherence to subsequent laboratory and radiological guidance. Reasons for this are multifactorial. Nevertheless, requesting unnecessary blood tests and neuroimaging has financial implications. ■

References

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Author: [A]Northwick Park Hospital, Harrow, UK

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