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Impact of coagulation result delays on transfusion practice in major obstetric haemorrhage

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Introduction

- In some recent deaths due to Major Obstetric Haemorrhage (MOH) there has been a delay in blood product administration due to delays in coagulation tests being reported[1].
- Where coagulation results are unknown with ongoing haemorrhage, empirical transfusion of blood products is recommended[2].
- Our objective was to determine the average length of time for coagulation study results to be available and assess association between coagulation results and products given.

Methods

- Retrospective audit of all MOH >1500mls from August 2019 – January 2020 inclusive.
- Local Audit Committee and Caldicott Guardian approvals.
- MOH cases >1500ml identified from BadgerNet digital records system.
- Electronic patient records and blood bank logs of MOH calls and transfusion requests reviewed looking at demographics, coagulation test results and blood product usage.

Results

- 135 MOH cases were identified out of 2460 deliveries (incidence 5.5%)
- There was no coagulation testing in 18.5% and no fibrinogen level checked in 83.7%.
- Median time for coagulation results: 90 minutes (interquartile range 66 - 128 minutes).
- Median time for fibrinogen results: 48 minutes (interquartile range 34 to 68 minutes).

Figure 1: MOH cases per month at QEUH

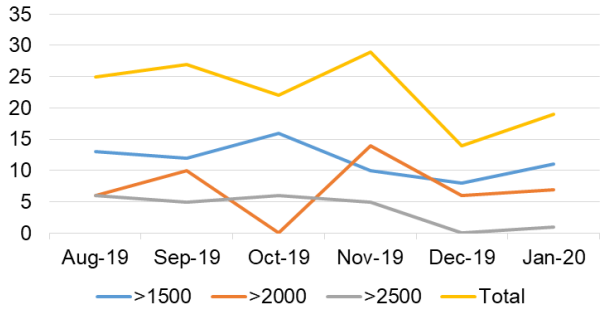
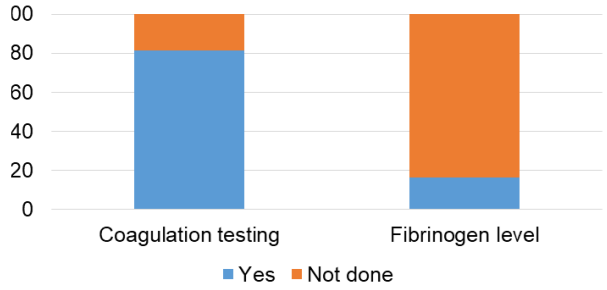


Figure 2: Coagulation and fibrinogen requests in MOH



- Thirteen patients (9.6%) received FFP; only 5 (38%) had abnormal coagulation studies.
- Four patients (3%) received cryoprecipitate; only 1 (25%) had a fibrinogen <2g/L.
- Four patients (3%) had a fibrinogen <2g/L; only 1 was given cryoprecipitate.

Figure 3: FFP Transfused (n=13)

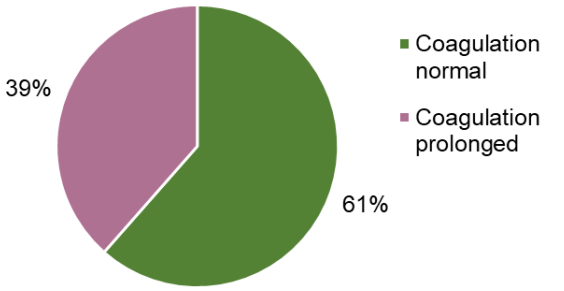
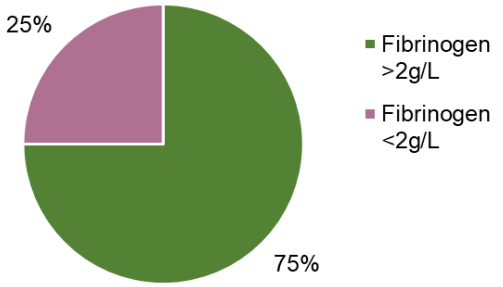


Figure 4: Cryoprecipitate Transfused (n=4)



Discussion

- There was a significant delay in coagulation results being available; in some FFP and cryoprecipitate were transfused where clotting or fibrinogen results were normal. Whilst in line with recommendations this highlights potentially unnecessary transfusions which are not without risk to the patient.
- Out of the 4 patients where cryoprecipitate was indicated (fibrinogen <2g/L) only 1 patient received cryoprecipitate. We postulate this may have been due to delays in reporting of fibrinogen results.
- Delays in results being available can slow decision making down where time is critical.
- We are introducing point of care coagulation testing using ROTEM and aim to re -audit these findings whilst examining concordance between point of care and formal coagulation and fibrinogen results.

References

1. Knight M, Bunch K, Tuffnell D et al. Saving Lives, Improving Mothers' Care – Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2016-18.
2. RCOG Green-top Guideline No. 52. Prevention and Management of Postpartum Haemorrhage. Br J Obstet Gynaecol, 2017; 124: e106-e149.