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Fresh Frozen Plasma use during Major Obstetric Haemorrhage: Can we support a volume triggered approach?

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Introduction

The management of major obstetric haemorrhage (MOH) poses some specific challenges within our district general hospital. One biomedical scientist provides both transfusion and analytical services OOH; point of care viscoelastic clot strength testing is not available; and our regional transfusion laboratory – for complex requests or replenishment of products – is over 40 miles away.

Our obstetric colleagues asked us if we felt moving to a system of issuing FFP once a specified blood loss was reached – a 'volume triggered approach' – was warranted.

The aim of this work was to examine our local use of FFP during the resuscitation of patients with a MOH to establish if we could support the move to a volume triggered approach.

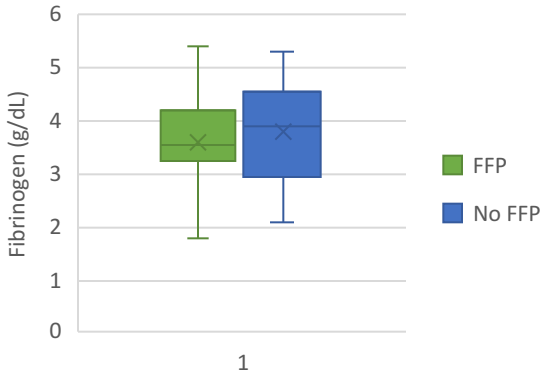
Methods

All deliveries between July 2019 and July 2020, with a measured blood loss (MBL) of ≥1500ml were identified from our local obstetric database. The electronic patient record was retrospectively reviewed and data was collected on MBL, blood products administered during resuscitation and coagulation screen results.

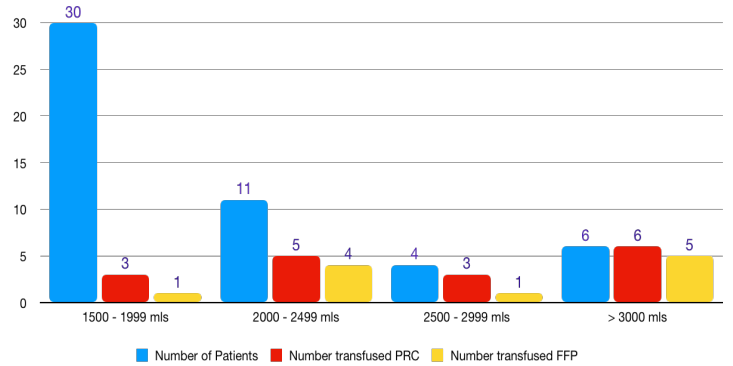
Results

During the study period, there were 51 deliveries with an MBL≥1500ml. 21 cases had a MBL≥2000ml. Of these 10 were associated with an SVD, 6 LUSCS and 5 instrumental delivery.

Of the 10 women with a MBL≥2000ml who received FFP, a median of 2 units of PRC were administered during resuscitation. One patient was transfused FFP having received no PRC and with no predisposing factors for a coagulopathy. Tone/trauma was felt to be the cause in 8 patients; with coagulopathy the causative factor in 2 cases.



Of the 11 women with a MBL ≥ 2000ml who did not receive FFP, there was no evidence of derangement of PT/APTT and all had a fibrinogen >2g/dl on their first post-resuscitation coagulation screen. No women returned to theatre for further haemorrhage control, and tone/trauma was the aetiology in all cases.



Discussion

We cannot recommend a change to volume triggered issuing of FFP during MOH within our department. Volume of blood lost is not the only factor that should be considered when deciding to transfer FFP during MOH. We feel that a volume triggered approach may result in harm from clinically unnecessary transfusion or wastage of blood products – a volume trigger of 2000ml would have resulted in 22 units of FFP being wasted in our cohort.

In the absence of a known coagulopathy it is suggested that FFP should be withheld until 4 units of PRC have been transfused[1] – administration of FFP too early may lead to a dilution of clotting factors[2]. Our data has shown that we are more liberal with our use of FFP, transfusing after a median of 2 units PRC.

The anxiety of an undiagnosed coagulopathy, and the desire to prevent the development of a coagulopathy, may be contributing to our liberal use of FFP. This may be alleviated by the availability of POC viscoelastic clot testing, which would also alleviate some of the burden on our laboratory staff during a MOH. This work also highlights benefits of collaborative multidisciplinary working and use of local data to assess service provision.

References

1. *Klein A, Arnold P, Bingham R et al. The use of blood products at their alternatives. Anaesthesia, 2016; 71: 829-42*
2. *Collis RE, Collis PW. Haemostatic management of obstetric haemorrhage. Anaesthesia, 2015;S1:78*