ROTEM to the rescue: optimising haemorrhage management in placenta accreta spectrum

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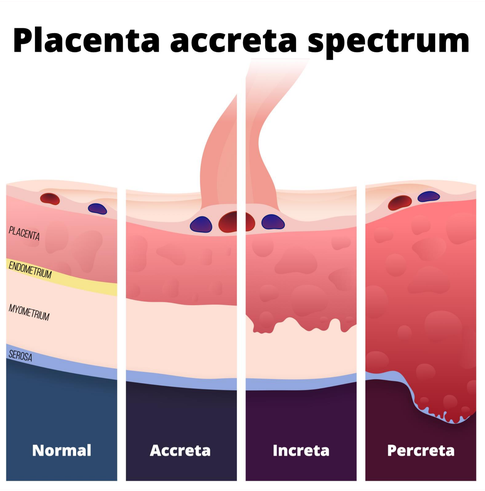
Introduction

Placenta accreta spectrum (PAS) is a disorder of the placenta ranging from abnormally adherent to deeply invasive placental tissue. There is high maternal morbidity associated with PAS related to postpartum haemorrhage (PPH)[1].

Fibrinogen has been shown to fall earlier than other coagulation factors in moderate PPH.

There has been increasing use of point-of-care viscoelastometric haemostatic assays including rotational thromboelastometry (ROTEM) to guide management of coagulopathy in PPH[2].



Case courtesy of Frank Gaillard, Radiopaedia.org, rID: 167145

Methods

Centre — Sheffield Teaching Hospitals (STH), a referral centre for PAS

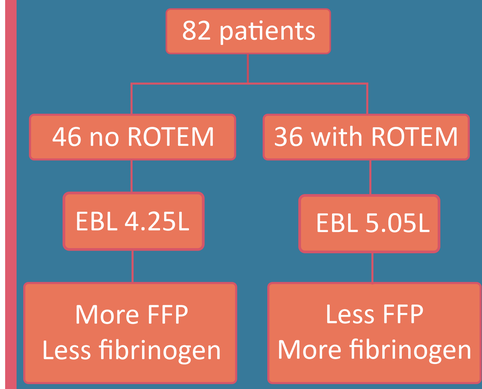
Ethics — Audit department approval

Data — Patients with PAS prospectively consented for inclusion in PAS database at STH

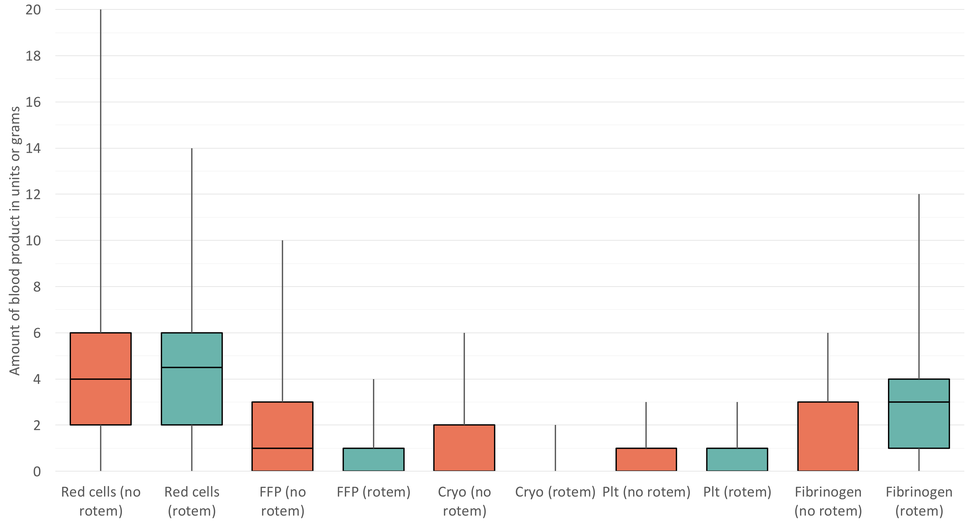
Period — Data retrospectively analysed for patients delivered between 10/11/2010 and 28/04/2025

Analysis — Mann-Whitney U tests used to compare estimated blood loss (EBL) and use of blood products and fibrinogen where ROTEM was, and was not, used.

Results



- No statistical difference in EBL between the no-ROTEM and the ROTEM group (p = 0.079).
- Less fresh frozen plasma (FFP) used (p = 0.039), and more fibrinogen used (p = 0.001) in the ROTEM group.
- Amount of packed red cells, cryoprecipitate (cryo) and platelets (plt) was not statistically different between the two groups (p-values 0.827, 0.117 and 0.378, respectively).



Blood product usage with and without ROTEM

Discussion

When ROTEM is used to guide management of coagulopathy associated with PPH for PAS patients, more fibrinogen is used and less FFP is administered.

This reflects the ability of ROTEM to identify the hypofibrinogenaemia that occurs earlier in moderate PPH and enables the clinician to target this.

It also reduces the transfusion risk to our PAS patients.

There was no difference in EBL or the amount of packed red cells, cryoprecipitate or platelets administered.

References

1. Reale S.C., Farber M.K. Management of patients with suspected placenta accreta spectrum. *British Journal of Anaesthesia*. 2022; 22: 43-51.
2. Collins P.W., Bell S.F., de Lloyd L., Collis R.E. Management of postpartum haemorrhage: from research into practice, a narrative review of the literature and the Cardiff experience. *International Journal of Obstetric Anesthesia*. 2019; 37: 106-117.