



ROTEM guided Massive Transfusion Protocol (MTP) in RBWH: How well are we doing?

Chelsea Reedman-Hawes¹, Dr Catherine Hurn¹, Sue Williams¹, Janelle Toombes¹, Nikesh Gopalkumar¹

¹.RBWH Emergency & Trauma Centre

PURPOSE

The RBWH is a major trauma referral center in Queensland. The RBWH ED has a Major Haemorrhage Transfusion Protocol (MTP) and ROTEM guideline in place to guide management in patients with suspected major haemorrhage. This QI audit was designed to assess the RBWH's adherence to ROTEM and its appropriate utilisation within MTP activations.

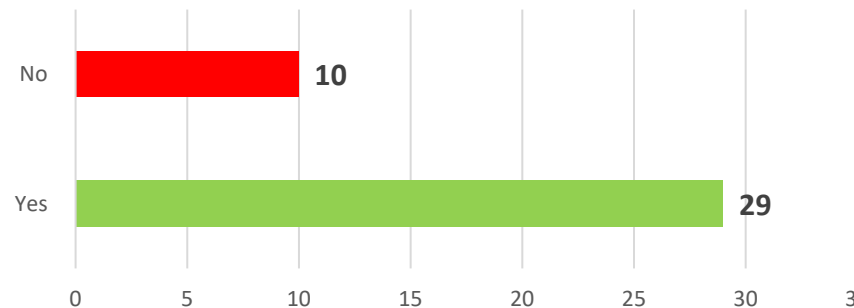
Rotational Thromboelastometry (ROTEM) evaluates the viscoelastic properties during blood clot formation and lysis.¹ It is best practice to repeat ROTEM 10 minutes post each administration of blood product.

METHODS

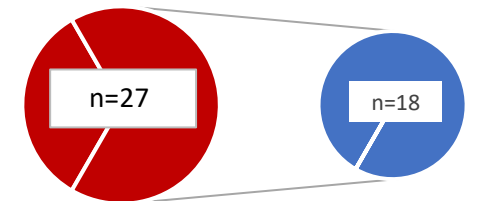
A clinical retrospective audit looked at all RBWH MTP activations between January and December 2020. Patient factors reviewed included patient demographics, context of bleeding, location of MTP activation, if the patient was actively bleeding and MTP mortality outcomes. These MTP activations were further filtered down to those that were ROTEM guided in comparison to ratio guided product administration. Adherence to ROTEM guideline best practice was based on timely administration of the correct product with repeat ROTEMS collected as appropriate. Suspected and active haemorrhage inclusions in the audit were based on defined criteria

RESULTS

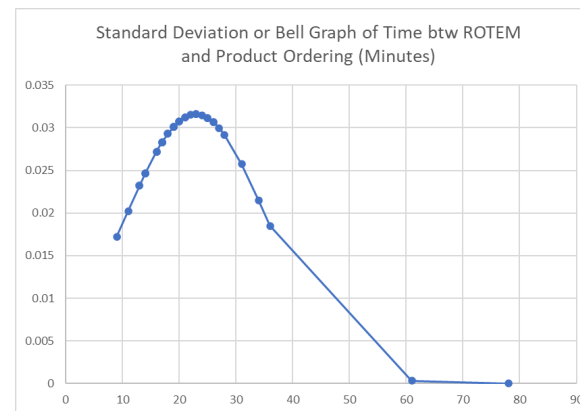
Correct Application of ROTEM Protocol



FIBTEM Replacement Adherence



■ FIBTEM Abnormal Results ■ Correct Fibrinogen Replacement



- 75% adhered to protocol
- 67% followed correct Fibrinogen replacement
- 86% of products ordered <=30 minutes
- 18% no repeat ROTEM

CONCLUSION

This audit has demonstrated that ROTEM guided massive transfusion has been widely adopted at the RBWH. It highlights that the most frequent abnormality in the critically bleeding patient is a low FIBTEM indicating the need for Fibrinogen replacement. Ongoing education and awareness of resources such as the RBWH specific TEM Guide app is needed to improve adherence to the protocol.

References

1. . European Journal of Cardio-Thoracic Surgery, Volume 37, Issue 3, March 2010, Pages 677–683, <https://doi.org/10.1016/j.ejcts.2009.07.038>.

