

TITLE

Use of thromboelastometry during post-partum haemorrhage in a large tertiary obstetrical referral unit: HEMOTIME, a prospective observational study

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ABSTRACT

Background

Post-partum haemorrhage remains one of the leading causes of maternal death in France. It is responsible for 10,7% of maternal deaths, 50% of which could be preventable. During post-partum haemorrhage, it is recommended to guide the administration of blood products with standard coagulation tests or viscoelastic tests like thromboelastometry (ROTEM®). The aim of this study was to compare the time needed to collect results between these two types of tests in real conditions.

Methods

All women presenting a post-partum haemorrhage were included in this monocentric observational study performed in a tertiary referral unit performing more than 5200 deliveries per year. The consultant anaesthetists were able to choose to perform a ROTEM® to guide the administration of blood products, on top of conventional coagulation tests. Time needed to collect ROTEM® and standard tests results were compared.

Results

A total of 233 women were enrolled and a ROTEM® was performed in 56 patients. Time needed to collect ROTEM® results was significantly shorter than for standard laboratory tests; in average, 29.5 min; 95% CI [23.0 – 36.0] vs. 168.5 min; 95% CI [115.0 – 222.0]; $p < 0,001$. There was no significant difference in terms of transfusion between patients who were tested with a ROTEM® and the others.

Conclusions

The time needed to collect standard hemostasis tests results seems not compatible with transfusion during postpartum haemorrhage. The ROTEM® allows to significantly reduce the time needed to collect results. Nevertheless, in our tertiary referral unit, the ROTEM® did not lead to any modification in transfusion practices, which remain guided by the daily clinical practice.

KEYWORDS

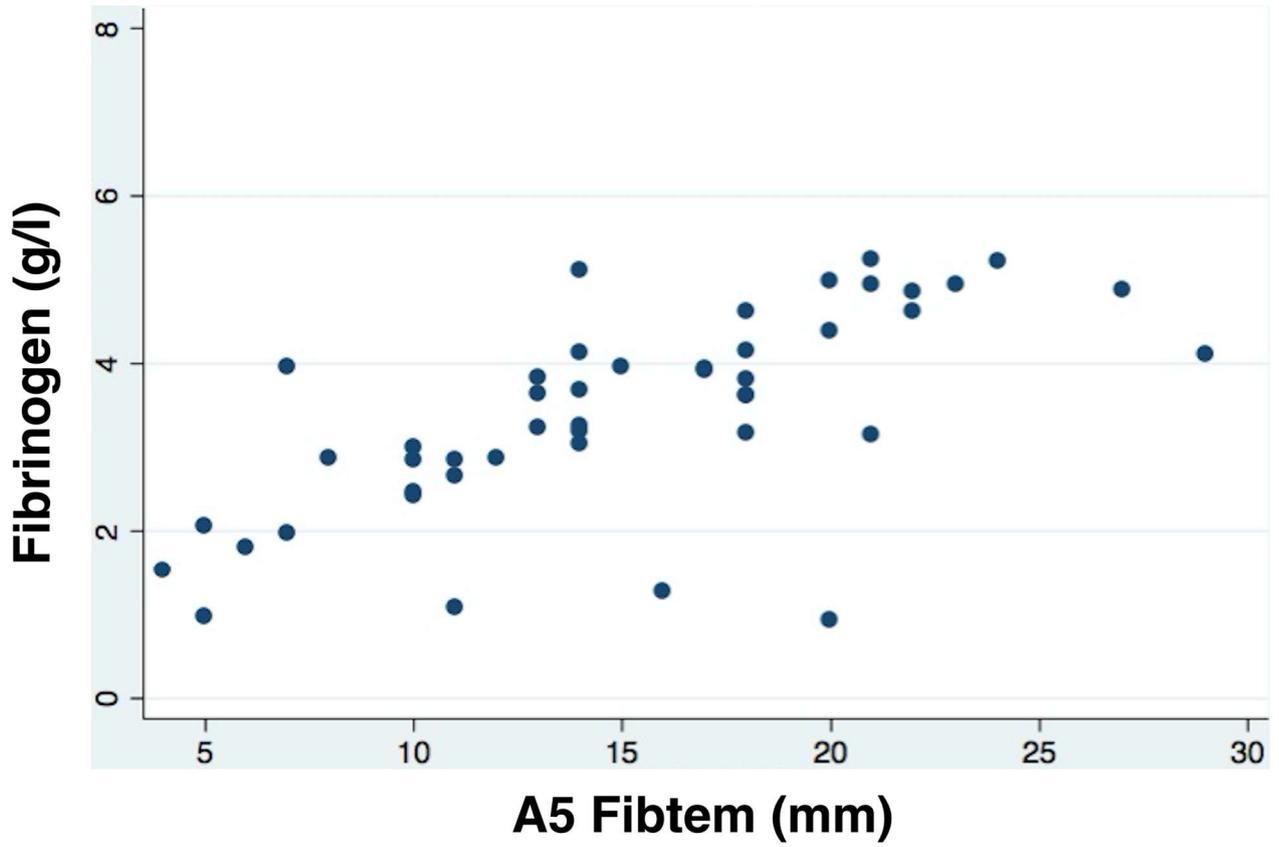
Blood transfusion - Fibrinogen - Haemostasis - Postpartum haemorrhage - ROTEM®
Thromboelastometry

HIGHLIGHTS

- Post-partum haemorrhage remains one of the leading causes of maternal death.
- Post-partum haemorrhage requires rapid documentation of coagulopathy.
- Unknown haemostasis status may lead to unnecessary transfusion.
- Unlike standard haemostasis tests, ROTEM® allows rapid results.
- Nevertheless, ROTEM® does not seem to affect transfusion practices.

FIGURES

Linear regression depicting the relation between A5 Fibtem and fibrinogen levels.



TABLES

Association between transfusion and ROTEM®.

	ROTEM® not performed (n=177)	ROTEM® performed (n=56)	OR	95% CI	Adjusted OR*	95% CI
Fibrinogen concentrates	0	12 (21%)	-	-	-	-
FFP	2 (1%)	15 (27%)	32.0	[7.0-145.5]	3.5	[0.3-37.9]
PRBC	14 (8%)	26 (46%)	10.0	[4.7-21.4]	1.6	[0.5-4.9]
> 2 PRBC	2 (1%)	16 (29%)	9.6	[1.8-52.2]	2.0	[0.3-16.6]

* : adjusted with PPH volume.