

## RESEARCH OUTPUTS / RÉSULTATS DE RECHERCHE

### **Pregnancy Induced Thrombosis: a clinical study**

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*Publication date:*  
2024

[Link to publication](#)

*Citation for published version (HARVARD):*

Didembourg, M, David, C, Morimont, L, Degottal, E, Vandervinne, S & Douxfils, J 2024, 'Pregnancy Induced Thrombosis: a clinical study', ISTH 2024, Thailand, 22/06/24 - 26/06/24.

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## INTRODUCTION

- In developed countries, venous thromboembolic events (VTE) present a significant risk during pregnancy and postpartum, with a **5-fold** and a **20-fold higher** risk respectively, compared to non-pregnant women [1-2].
- Multifactorial pathogenesis involves elevated coagulation factors, reduced fibrinolysis and physical changes related to fetal position and delivery-related vascular trauma [3].
- An efficient tool for continuous pregnancy monitoring of VTE risk is crucial.

## AIM

This study therefore aims to assess thrombotic markers and their evolution throughout pregnancy to optimize thrombotic risk management and patient-oriented therapeutic interventions.

## METHOD

This study is a single-centered prospective study willing to recruit **150 pregnant** women over 15 months.

The study aligns with Centre Hospitalier Régional de Huy's standard care timepoints (7 weeks, 3-, 6-, 9 months, Delivery Day+2, and 6 months postpartum). This study received ethical approval (N°035-10/2022) and follows the Declaration of Helsinki.

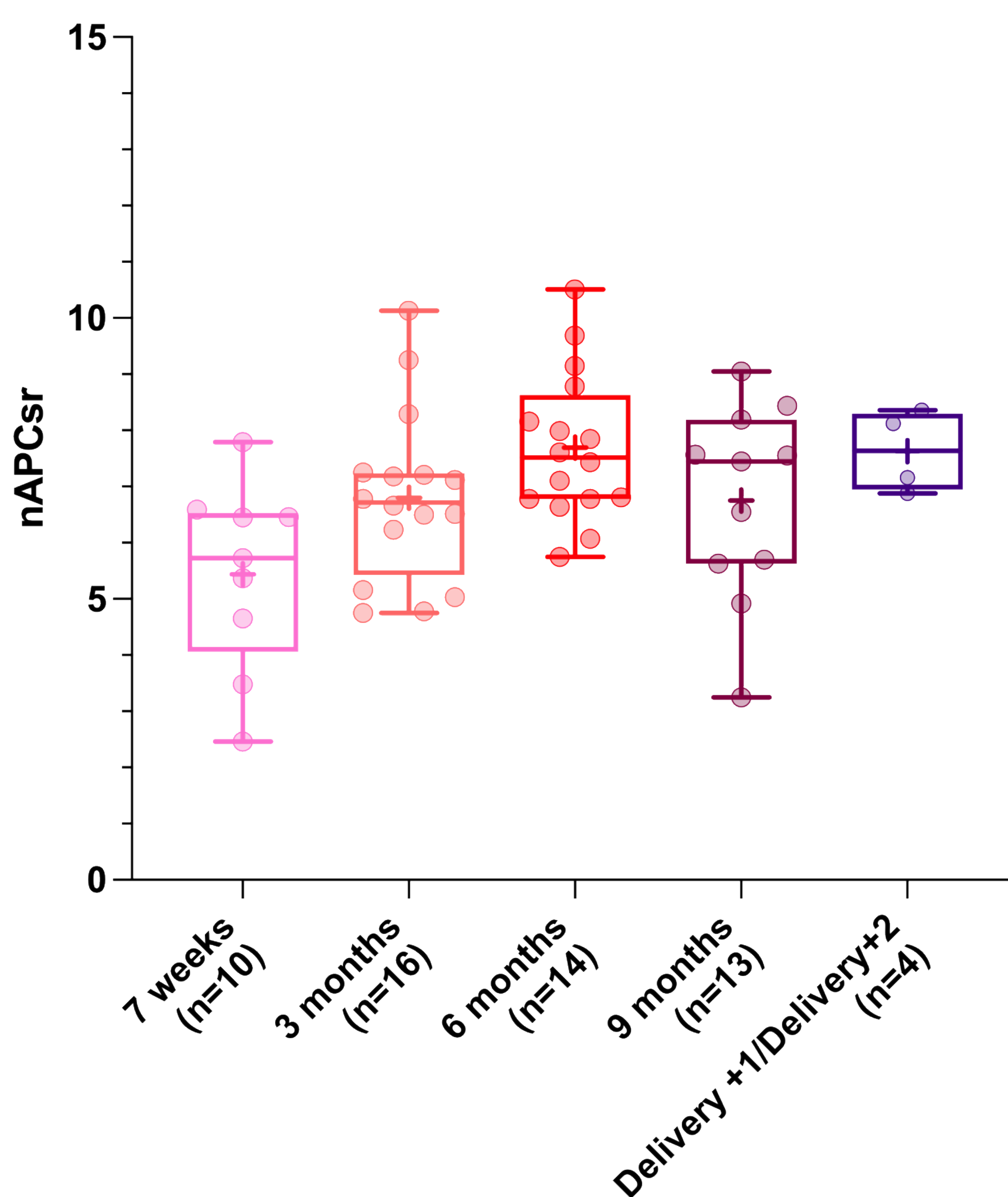
Demographic characteristics and common thrombotic risk factors will be tabulated. Besides usual clinical parameters, global coagulation tests such as thrombin generation test (TGT), activated protein C (APC) resistance through normalized APC sensitivity ratio (nAPCsr) and FibWave will be performed.

## RESULTS

### Actual study population

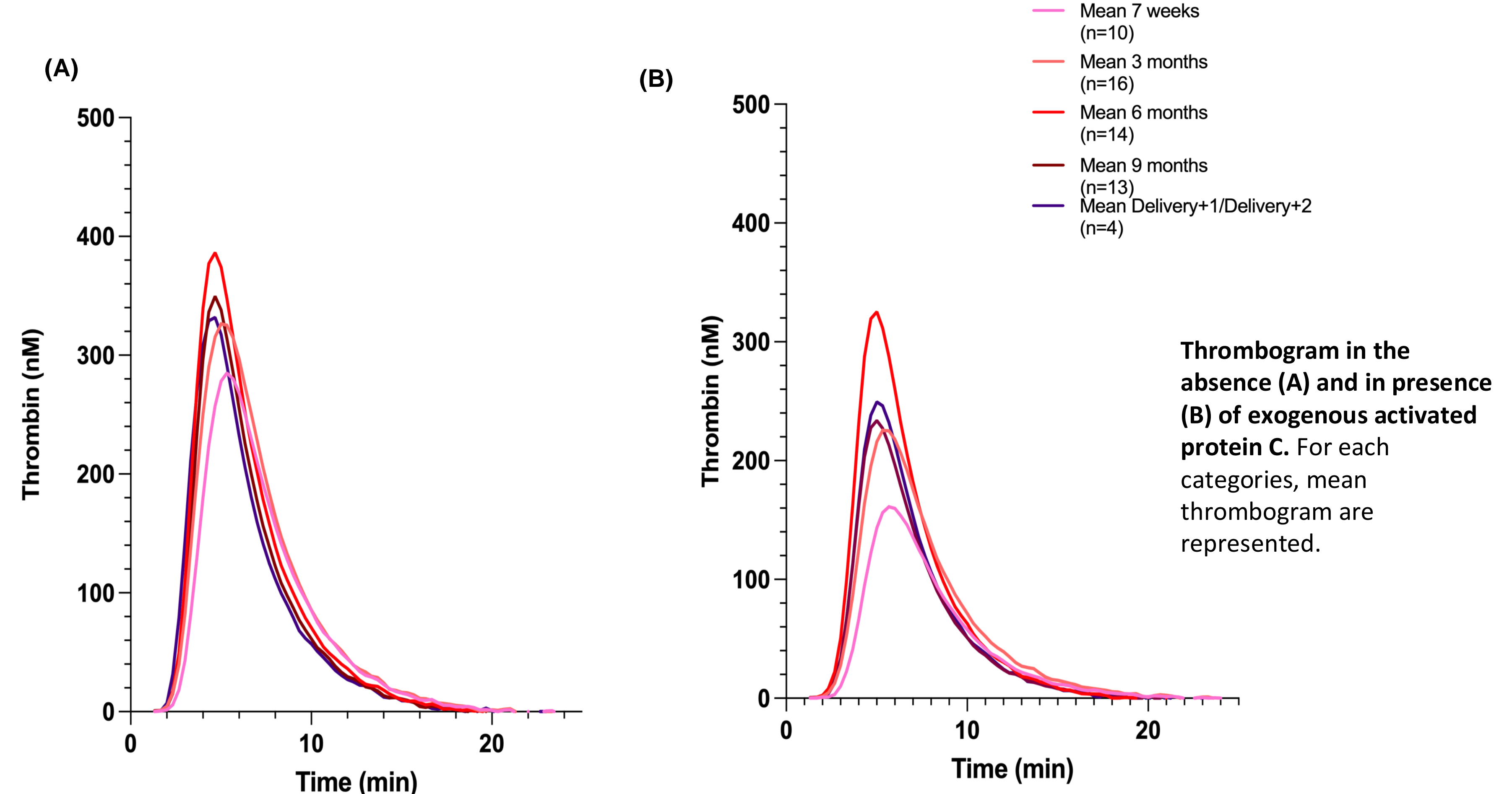
Characteristics	Pregnant women (n = 19)
Age (years) – mean ± SD	31 ± 5
BMI at baseline (7 weeks) Kg/m <sup>2</sup> ± SD	24,3 ± 3,1
Family history of thrombosis– n(%)	
Yes	5 (26%)
No	14 (74%)
Personal history of thrombosis– n(%)	
Yes	1 (5%)
No	18 (95%)

### ETP-based APC resistance assay



**Normalized activated protein C sensitivity ratio (nAPCsr) of pregnant women (n=19) at different time point (7 weeks, 3 months, 6 months, 9 months and 2 days after delivery).** The median and the 25<sup>th</sup> - 75<sup>th</sup> percentiles are symbolized by boxes; whiskers represent minimum and maximum values. The mean is symbolized by a cross. As there is not enough patient in each group, statistics could have not been made.

### Thrombin generation



**Thrombogram in the absence (A) and in presence (B) of exogenous activated protein C.** For each categories, mean thrombogram are represented.

	7 weeks (n=10)	3 months (n=16)	6 months (n=14)	9 months (n=13)	Delivery + 1 / Delivery+2 (n=4)	P-value	
ETP	-APC	1541,58	1772,30	1773,91	1564,89	1543,67	0.2654
	+APC	909,18	1263,16	1453,99	1106,03	1160,59	0.0103*
LT	-APC	2,89	2,76	2,61	2,35	2,44	0.0802
	+APC	3,33	3,11	2,85	2,71	3,02	0.0447*
PH	-APC	297,17	354,74	399,52	355,68	362,51	0.0153*
	+APC	170,57	237,10	332,83	245,21	262,48	0.0010*
Ttp	-APC	5,63	5,30	4,80	4,41	4,56	0.0036*
	+APC	6,04	5,69	5,05	4,98	5,31	0.0059*
mVRI	-APC	118,47	148,67	190,53	163,37	175,20	0.0160*
	+APC	70,77	96,95	156,02	113,67	117,25	0.0030*

**Thrombogram generation parameters in the absence and the presence of exogenous activated protein C (APC), according to the different time points.** As there is not enough patient in each group, statistics could have not been made.

Abbreviations: ETP, Endogenous Thrombin Potential; LT, Lag Time; PH, Peak Height; Ttp, Time to peak; mVRI, mean Velocity Rate Index

## CONCLUSIONS

Initial findings indicate alterations in the prothrombotic state as a function of the trimester using global coagulation tests (TGT and nAPCsr). Further comparison with conventional coagulation tests will allow to measure their ability to reflect individual thrombotic risk to improve patient follow-up.

## ACKNOWLEDGEMENTS

Thank you to the teams of the gynaecology-obstetrics department, of the laboratory at CHR Huy Hospital and of QUALIblood s.a.

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