Thromboelastometry prophyle after major liver resection

Measurement techniques,thrombelastography, Complications,thrombosis

J. M. SANAHUJA BLASCO¹, A. Blasi¹, M. Ubré¹, V. Molina², J. Montero¹, J. Balust¹

¹ANESTHESIA DEPARTMENT, HOSPITAL CLINIC OF BARCELONA - BARCELONA (Spain),

²SURGERY DEPARTMENT, HOSPITAL CLINIC OF BARCELONA - BARCELONA (Spain)

Background and Goal of Study:

Hypocoagulability observed after major hepatic resection in conventional coagulation tests withhold thromboprophylaxis administration, despite being this surgery one with the highest risk of thrombotic events.

It has been shown that thromboelastometry (TEM) indicates a balanced coagulation status in this clinical context (Mallet 2016). The aim of the study is to document serial changes over time of conventional coagulation tests and TEM in patients undergoing major hepatic resection.

Materials and Methods:

Patients undergoing major hepatic resection for metastatic colorectal cancer were prospectively included. Standard coagulation tests and thromboelastometry EXTEM tests (ROTEM®) were measured simultaneously at baseline and day 5 after surgery. All patients included received standard thromboprophylaxis with enoxaparin 40mg starting in the first 24 hours after surgery. Values were expressed as a mean and SD. Non parametric and Spearman’s rho test were used.

	BASELINE	5 DAYS AFTER SURGERY	p
CT EXTEM (s)	82±41	65±16	0.39
MCF EXTEM (mm)	68 ±13	68 ±10	0.61
LY 30 EXTEM (%)	99 ±0.3	100± 0	1
MCF FIBTEM (mm)	25 ± 15	25 ±9	1
PT (%)	83 ±10	65 ±12	0.02
APTT (S)	26 ±3	29 ±2	0.09
Platelets x10 ⁹ /L	267 ± 165	249± 86	0.86
Fibrinogen (g/L)	3.6 ±2.1	4.7± 2.7	0.24

Table 1

Results and Discussion:

Eight patients (5 male, 3 female), 50 ± 10 years old, constituted the study population. Intraoperative parameters, including bleeding, were similar among patients. TEM parameters were normal at baseline and despite a trend to shorter clot formation, they did not change significantly 5 days after surgery. To the contrary, prothrombin time decreased along this period (83% ±10%) vs (65% ±12%) p= 0.02. (Table 1). Either thrombotic nor bleeding events were observed postoperatively.

Conclusion(s):

These results confirm that INR should be abandoned as a guide to start thrombophylaxis. Thromboelastometry probably better reflects the coagulation state following major liver surgery.

Clinical Utility of Viscoelastic Tests of Coagulation (TEG/ROTEM) in Patients with Liver Disease and during Liver Transplantation. Seminars in Thrombosis & Hemostasis