

The aim of preliminary and experimental prospective, randomized study was to search for thromboelastography signs of fibrinolysis, their impact on postoperative blood loss and need of transfusion in coronary surgery.

In preliminary study we had compared results in 20 patients scheduled for coronary surgery (10 patients OPCAB, 10 patients conventional CABG). Completely expressed thromboelastographic signs of hyper-fibrinolysis had been detected in 2 on-pump patients and partial signs of increased fibrinolytic activity had been noticed in other 2 patients originating from the same group, unlike OPCAB group, in which no signs of fibrinolysis had been observed. However, differences between the evaluated groups in that trial had not reached statistical significance due to a small number of study subjects.

In experimental study, 65 patients scheduled for coronary surgery were randomized into three groups: A – conventional coronary artery bypass grafting, B – off-pump surgery, C – coronary artery bypass grafting with modified, rheoparin coated cardiopulmonary bypass with the avoidance of re-infusion of cardiotomy blood into the circuit. On the completion of peripheral bypass anastomoses, highly significant inter-group differences were found in the thromboelastographic parameter lysis of set time at 60 min of assessment ($P=0,003$) and at 150 min of assessment ($P<0,001$), the mean values of these parameters were significantly lower in group A as compared with both groups B and C, which were statistically indistinguishable. Lysis on set time on the completion of peripheral bypass anastomoses -50% was detected in 12 patients (52,2 %) originating from group A. At the other sampling times (preoperatively, 15 min after sternotomy, at the end of the procedures, and 24 h later) thromboelastographic parameters were similar in all groups. In group A no significant correlations between lysis on set time, postoperative blood loss and D-dimer levels were found.

Based on results of pilot and experimental study, thromboelastographic signs of fibrinolysis were clearly detectable during conventional cardiopulmonary bypass, but not at any time in off-pump

group, nor in group operated on with the use of modified CPB. The signs of fibrinolysis resolved spontaneously at the end of surgery and were not associated with increased post-operative bleeding. No significant correlation with D-dimer levels was found.