

IS SPATIAL DYNAMICS OF CLOT GROWTH PREDICTOR OF POSTOPERATIVE BLEEDING AFTER CARDIAC SURGERY?

Morozov Yu.A., Charnaya M.A., Gladysheva V.G., Goncharova A.V.

Federal state budgetary institution «Petrovsky National Research Centre of Surgery» under the Russian academy of medical sciences, Moscow, Russia

Bleeding after surgery under cardiopulmonary bypass (CPB) significantly aggravate the postoperative period. Laboratory diagnosis coagulopathy, the trigger of postoperative bleeding, very difficult.

The aim of idea: To study the diagnostic value of the method of spatial dynamics of clot growth with increased bleeding in cardiac surgery patients.

Methods. In 26 patients operated on under CPB studied the spatial dynamics of clot growth before, after and at 1 day after surgery. Recorded growth retardation bunch (lag-phase, min), the initial (IGR, micron/min) and stationary (SGR, micron/min) of the clot growth rate, the clot size at 30 min (CS-30, m) and the clot density (CD, u). Simultaneously assess the hemostatic scrinning clotting methods.

Results. Before to surgery, the studied parameters were within the range of normal values. In 23.1% of patients (group 1) in the early postoperative period, there was increased bleeding (more than 7 ml/kg of body weight per 12 hours). At the end of operation in these patients indicator lag-phase compared with the outcome of virtually did not change and was 50% lower than those without hemorrhage (group 2). At this stage, the IGR, SGR and CS-30 in the two groups were similar, and the SD in group 1 was lower than in group 2 (on 12%). Half of the patients in group 1 were recorded hypofibrinogenemia and increased thrombin generation, whereas in group 2 of the violations identified in only 15% of cases. Pathology platelet hemostasis was observed in all patients in group 1 and 40% of patients in group 2. APTT prolongation was detected in 66.6% of cases and 20 for groups 1 and 2, respectively. At 1 day after surgery in group 1 was not significantly higher IGR, SGR and CS-30 – by 28.2 and 14.8%, respectively, lower than in group 2. Indicators SGR and CD significantly between the groups did not differ. In group 1, there was a decrease IGR by 44.1%, SGRR – 40% and CS-30 – by 33.4% compared to the previous stage.

Conclusion. Revealed at the end of the operation latent hypercoagulability, no screening test is recorded, may be the first predictor of the development of increased postoperative bleeding due to consumption coagulopathy, which persisted in the future.