

Assessment of the hemostasis is one of the basic components of patient care during the perioperative period. Coagulation tests, including prothrombin and activated partial thromboplastin time, fibrinogen concentration, and platelet count, are standard in hemostasis testing. However, the method of their evaluation and the time availability of their results are not satisfactory, especially in the case of the life-threatening bleeding. For this reason, rotational thromboelastometry (ROTEM) as a viscoelastic method appears to be more promising.

The aim of the first part of this work was to verify whether the relevant ROTEM results are more available in time than the results of standard laboratory tests in conditions of our facility. The correlation of comparable ROTEM parameters and standard coagulation tests was evaluated in the second part of the work. Then, the impact of the hemostasis assessment using ROTEM on the reduction of transfusion products used before invasive and surgical procedures was evaluated. Finally, it was also determined whether the implementation of ROTEM in the management of the perioperative bleeding influences the blood loss, consumption of transfusion products and length of hospital stay.

The results of this work confirm that the evaluation of hemostasis using ROTEM is significantly faster than the evaluation using standard coagulation tests. When comparing the results, only a correlation of  $A5_{\text{FIBTEM}}$  and  $MCF_{\text{FIBTEM}}$  parameters with the fibrinogen concentration determined by the Clauss method was found. The use of ROTEM before invasive and surgical procedures in adult and pediatric patients has helped to reduce the consumption of fresh frozen plasma. The implementation of ROTEM in the management of the perioperative bleeding has led to a reduction of the blood loss, a reduction of transfusion products consumption, especially of fresh frozen plasma, and a shortening of the hospitalization time.