

## Summary

Fluid resuscitation with crystalloid and colloid solutions is a common treatment in perioperative medicine. However, a variety of unbalanced or balanced solutions is used in clinical practice and there is still a vivid debate going on regarding the selection of optimal fluid with minimal negative effect on coagulation.

The goal of the dissertation was to investigate the adverse effect of balanced crystalloids and colloids on whole blood coagulation measured by method of rotational thromboelastometry.

In the first phase of the work we had assessed the adverse effect of balanced crystalloid, hydroxyethyl starch and gelatin after dilution of blood with the solution in vitro. Parameters of EXTEM and FIBTEM tests were evaluated by using rotational thromboelastometry.

In the second phase of the work we evaluated the negative effect of infusion solution after dilution in vivo. We had obtained blood samples from 30 patients during knee arthroscopy before and after administration of 500 ml of crystalloid or hydroxyethyl starch or gelatin. Parameters of EXTEM and FIBTEM tests were evaluated by using rotational thromboelastometry. In compliance with the results of the dissertation, hydroxyethyl starch has the most obvious negative effect on clot formation followed by gelatin and finally by crystalloids.

Based on the conclusions of my studies and works of other authors, balanced crystalloids have the least hypocoagulative effect. Thus, they are the most suitable infusion solutions for the perioperative fluid therapy.