

## **SUMMARY**

This dissertation entitled "**Aortocoronary bypass surgery with or without heart-lung machine in high risk patients**" is a summary of the findings of two published works by the author: Off-pump Versus On-Pump Coronary Artery Bypass Grafting Surgery in High-Risk Patients: PRAGUE-6 Trial at 30 Days and 1 Year, published in the journal Biomedical Papers in 2015 and Aspirin is insufficient in inhibition of platelet aggregation and thromboxane formation early after coronary artery bypass surgery, published in Journal of Thrombosis and Thrombolysis in 2009. The PRAGUE-6 study, which focused exclusively on patients with very high operative risk according to the EuroSCORE scoring system, confirmed the hypothesis of a higher incidence of combined endpoints up to the 30th day among patients operated with extracorporeal circulation, particularly acute myocardial infarctions. This significant difference was not maintained after one year after the surgery, mainly due to the increase in mortality between the 30th day and the 1st year in patients operated off-pump. The dissertation further discusses similar papers published on the topic in recent years, including the two very last meta-analyzes.

The second part of the thesis follows the topic of myocardial revascularization in the field of antiaggregation therapy after aortocoronary reconstruction regardless of the chosen method of surgery. The indicator is direct blood aggregometry and the amount of thromboxane metabolites in the urine. This research concludes that administration of 200 mg aspirin in the early postoperative period alone is not enough to reduce the formation of thrombus, thus increasing the risk of failure especially of venous grafts.

The closing part of the thesis is devoted to the current position of the technique of revascularization without CPB worldwide and from the point of view of the Czech Republic. It also includes data from a recent paper Use of OPCAB in Czechia 2010 – 2015: Have we learned any lessons?, which has been published in the journal *Cor et Vasa*. It reports not only the trends in the mentioned technique in the Czech Republic during the last 6 years, but also the postoperative results based on the data from the National Cardiac Surgery Register. Surprisingly, interest in OPCAB generally declines and the best results in early post-operative progress are achieved in patients who are operated without CPB in highly specialized centers. Conversely, in centers with a low ratio of the beating heart revascularisation, the results are the same or even worse than in on-pump operations.