

## SUMMARY

Radial approach in coronary catheterizations and interventions has been only an alternative of the femoral approach. But due to some important advantages radial approach has a chance to become the first choice in majority of catheterized patients. The most important advantage is the reduction of vascular access site bleeding complications. Additional benefits are patient satisfaction, cost reduction, shorter hospital stay and possibility of the same-day discharge catheterizations and interventions. The aim of our work was to try to answer three open questions: 1. is it possible to catheterize majority of our patients from the left radial artery when 90% of them are right-handed? 2. what is the optimal care for the radial artery after the procedure in prevention and treatment of radial artery occlusion? 3. is it effective to implement radial approach in primary PCI as a first approach for STEMI patients?

The first part relates the left radial approach. After construction of our special variable support for the left arm and forearm we successfully used this approach in our studies in almost 90% of patients.

The second part of this work contains our randomized trial comparing two different doses of unfractionated heparin in prevention of radial artery occlusion after diagnostic cardiac catheterizations. In case of occlusion we described and used for the first time transient ulnar artery compression as the new non pharmacological method for its recanalisation. We have found out that the dose of 5000 units of heparin in combination with ulnar compression leads to significant reduction of the final radial occlusion in comparison with the dose 2000 units. In our study ulnar artery compression was safe and together with the higher dose of heparin led to final radial artery occlusion in less than 1% of patients.

The third part contains a total of four studies comparing radial and femoral approach in primary PCI. In three of them we have found that radial approach is associated with the same primary PCI results but the incidence of bleeding and vascular access site complications is significantly lower in radial group. These findings will soon be completed with the results of multicenter national randomized trial comparing femoral and radial approach in more than 700 patients with STEMI.

