

## 1 Summary

### **Elective MIDCAB: Shunt or Tournique Occlusion? Assessment of a Protective Role of Perioperative Intraluminal Shunting on Myocardial Damage.**

**Background:** To determine impact of intraluminal-left anterior descending (LAD) shunt to prevent myocardial damage in minimally invasive coronary artery bypass (MIDCAB).

**Methods:** 38 patients were randomly assigned to external tournique occlusion (TO, n = 19) or intraluminal-LAD shunt group (ILS, n = 19). Blood samples for cardiac troponin T (cTnT), Creatine Kinase (CK), CK-MB, myoglobin and aspartate aminotransferase (AST) were collected at 30 min. prior to, 6 and 24 hours after surgery.

**Results:** 1 patient in TO and 2 in ILS group were excluded from further analysis due to preoperative cTnT level above the 99th-percentile ( $\geq 0,01 \mu\text{g/l}$ ). The anastomotic time in TO group was significantly shorter than in ILS group ( $13.44 \pm 5.06$  vs  $18.9 \pm 6.56$  min.,  $p = 0.0094$ ). Postoperatively, each six patients in TO (33.3%) and ILS (35.3 %) group were above the 99th-percentile. 2 patients from each group (TO 11.1 % and ILS 11.8 %) had peak values above 10-% CV cutoff ( $p = 1$ ). The differences in postoperative plasma concentrations of CK, CK-MB, myoglobin and AST between groups were similar. There were no significant differences in between both groups at all studied timepoints.

**Conclusion:** There was no protective effect of intraluminal shunting on myocardial damage compared to tournique occlusion. It is upon the surgeon's discretion which method may preferably be used to achieve a bloodless field in grafting of the non-occluded LAD.

**Keywords:** MIDCAB – intraluminal shunt - external tournique occlusion – myocardial damage