

## Artery Research Vol. **25(S1)**; 2019, *p.* S96 DOI: https://doi.org/10.2991/artres.k.191224.086; ISSN 1872-9312; eISSN 1876-4401 https://www.atlantis-press.com/journals/artres



## P55 Remote Ischaemic Preconditioning Reduces Cardiac Biomarkers During Vascular Surgery

Teele Kepler<sup>1,\*</sup>, Karl Kuusik<sup>1</sup>, Urmas Lepner<sup>1,2</sup>, Joel Starkopf<sup>1,2</sup>, Mihkel Zilmer<sup>1</sup>, Jaan Eha<sup>1,2</sup>, Kaido Paapstel<sup>2</sup>, Jaak Kals<sup>1,2</sup>

<sup>1</sup>University of Tartu, Tartu, Estonia <sup>2</sup>Tartu University Hospital, Tartu, Estonia

## **ABSTRACT**

**Objectives:** The primary aim of this study was to evaluate the effects of remote ischaemic preconditioning (RIPC) on preventing the leakage of cardiac damage biomarkers in patients undergoing vascular surgery.

**Methods:** Randomised, sham-controlled, double-blinded, single-centre study has been carried out. In recruitment patients undergoing open abdominal aortic aneurysm repair, surgical lower limb revascularisation surgery or carotid endarterectomy were enrolled non-consecutively. The RIPC protocol consisting of 4 cycles of 5 minutes of ischaemia, followed by 5 minutes of reperfusion, was applied. A RIPC or a sham procedure was performed noninvasively at the same time as the patient was prepared for anaesthesia. High sensitivity troponin T level was measured preoperatively as well as 2, 8 and 24 hours after surgery and pro b-type natriuretic peptide was measured preoperatively and 24 hours after surgery.

**Results:** There was significantly higher leakage of high sensitivity troponin T (peak change median 2 ng/L, IQR 0.9–6.2 ng/L vs 0.6 ng/L, IQR 0.7–2.1 ng/L, p = 0.0002) and pro b-type natriuretic peptide (change median 144 pg/mL, IQR 17–318 pg/mL vs 51 pg/mL, IQR 12–196 pg/mL, p = 0.02) in the sham group compared to the RIPC group.

**Conclusion:** RIPC reduces the leakage of high sensitivity troponin T and pro b-type natriuretic peptide. Therefore, it may reduce cardiac damage in patients undergoing non-cardiac vascular surgery. The clinical significance of RIPC has to be evaluated in larger studies excluding the factors known to influence its effect.

© 2019 Association for Research into Arterial Structure and Physiology. Publishing services by Atlantis Press International B.V. This is an open access article distributed under the CC BY-NC 4.0 license (http://creativecommons.org/licenses/by-nc/4.0/).