P65: REMOTE ISCHAEMIC PRECONDITIONING REDUCES KIDNEY INJURY IN VASCULAR SURGERY

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MODIFICATION OF SYMPATHETIC TONE BY RENAL ARTERY DERENAVATION CAUSES EARLY, SIGNIFICANT AND SUSTAINED ARTERIAL DE-STIFFENING
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Objective: To examine whether Sympathetic Renal Denervation (RDN) might have an additive value for cardiovascular risk decline beyond lowering blood pressure.

Methods: 73 selected patients with resistant hypertension had RDN performed. Arterial stiffness was measured, using applanation tonometry, before the procedure, 24 to 48 hours following the procedure and subsequently 1, 3 and 6 months after the RDN.

Results: Within 48 hours RDN significantly reduced carotid-femoral aortic pulse wave velocity (AoPWV) from 11.3 ± 2.7 to 10.3 ± 2.6 m/s (p = 0.001), the reduction was sustained at months 1, 3, and 6. Early changes of AoPWV value did not correlate with office systolic or diastolic BP (p changes of AoPWV value did not correlate with office systolic or diastolic BP (p = 0.45; p = 0.33). Furthermore, the higher the initial AoPWV value, the greater the reduction of AoPWV was observed after 6 months: Q1 8.4 ± 1, Δ 0.05 ± 1.6/Q2 10.1 ± 0.4, Δ 1.1 ± 1.4/Q3 12.2±0.8, Δ 1.8 ± 1.7/Q4 15.3 ± 1.7, Δ 2.8 ± 2.1, (p = 0.002).

Conclusion: A sustainable effect on AoPWV, observed in our study as early as within 24–48 hours following the procedure and up to 6 months, suggests an additional RDN effect on reducing arterial stiffness and cardiovascular risk. The de-stiffening effect was greater in patients with high initial AoPWV.

REMOTE ISCHAEMIC PRECONDITIONING REDUCES KIDNEY INJURY IN VASCULAR SURGERY
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Background: Perioperative acute kidney injury has been found to occur in 12% of patients undergoing lower limb revascularisation (Arora et al., 2013). The aim of the current double-blind, randomised and sham-controlled pilot study was to determine the effect of remote ischaemic preconditioning (RIPC) in perioperative renal damage in vascular surgery.

Methods: Patients undergoing elective lower limb revascularisation surgery between January 2016 and February 2018, who gave full informed consent, were recruited. Four episodes of 5 minutes of upper limb ischaemia were applied instead of ischaemia. Blood samples were collected preoperatively and 20–28 hours after surgery.

Results: Twenty-nine patients were enrolled in the sham and 28 patients were enrolled in the experimental group. The baseline characteristics did not differ between the groups except for gender (Table). The surgery resulted in significant increase of creatinine (from the median value of 80 to 88, p = 0.0279) in the sham group. In the RIPC group, in contrast, significant decline in creatinine (from the mean value of 79 to 72, p = 0.034) and cystatin C (from the median value of 1.1 to 0.9, p = 0.0007) was noted. However, changes in creatinine, urea, cystatin C and B2M between the groups were statistically significant (p-values 0.002, 0.0203, 0.0113, 0.0286 respectively) (Figure).

Conclusion: This pilot study demonstrates that RIPC reduces the levels of biomarkers of acute kidney injury in patients undergoing surgical lower limb revascularisation. This phenomenon may offer renoprotection during vascular surgery.