

episode of acute ischaemia-reperfusion injury, has emerged as a non-invasive, low-cost therapeutic intervention for protecting the heart in patients undergoing CABG surgery. However, both experimental and clinical studies have demonstrated that the diabetic heart presents an increased resistance to the protective effects of RIPC. Whether by increasing the preconditioning stimulus we can protect diabetic patients undergoing CABG surgery is unknown.

Methods and results 87 consecutive diabetic patients undergoing elective CABG surgery were recruited into two substudies. In the first substudy (N=53), patients were randomised to receive either standard RIPC protocol (3–5 min cycles of upper arm cuff inflation to 200 mm Hg with intervening 5 min deflation, N=26) or control (uninflated cuff placed on the upper arm for 30 min, N=27) following anaesthesia induction. In the second substudy (N=34), patients were randomised to receive either an enhanced RIPC stimulus (2–5 min cycles of simultaneous upper arm and thigh cuff inflation to 200 mm Hg with intervening 5 min deflation, N=17) or control (uninflated cuffs placed on the upper arm and thigh for 20 min, N=17). PMI was calculated as area-under-the-curve (AUC) of troponin-T (TnT), measured pre-operatively and 6, 12, 24, 48, 72 h post-surgery. In the first substudy with standard preconditioning protocol, there was no difference in the 72 h TnT AUC between control and RIPC (AUC was respectively 22.17 µg/l and 22.22 µg/l, p=0.98). However, in the second substudy and with the application of the enhanced preconditioning stimulus, we observed a significant reduction in the 72 h TnT AUC in the RIPC group compared to control (31.73 µg/l vs 19.63 µg/l respectively, p=0.022).

Conclusions An enhanced preconditioning stimulus by multi-limb RIPC reduces PMI in diabetic patients undergoing CABG surgery. Larger multicentre studies are being conducted to confirm these studies.

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MULTI-LIMB REMOTE ISCHAEMIC PRECONDITIONING REDUCES MYOCARDIAL INJURY IN DIABETIC PATIENTS UNDERGOING CORONARY ARTERY BYPASS SURGERY

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doi:10.1136/heartjnl-2013-304019.124

Background Diabetic patients undergoing coronary artery bypass surgery (CABG) are at higher risk of peri-operative myocardial injury (PMI) with subsequent worse short and long-term clinical outcomes. Remote ischaemic preconditioning (RIPC), in which the application of one or more brief cycles of non-lethal ischaemia and reperfusion to an organ or tissue protects the heart against a lethal