

Autonomic imbalance in cardiac surgery: A potential determinant of the failure in remote ischemic preconditioning

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© 2018 Elsevier Ltd Remote ischemic preconditioning (RIPC) is a cardioprotective strategy against myocardial damage by ischemia-reperfusion. Many in-vivo and ex-vivo animal researches have demonstrated that RIPC decreases significantly the ischemia-reperfusion myocardial damage, by up to 58% in isolated rat heart. Cardiac artery bypass graft surgery (CABG) is a clinical model of myocardial ischemia-reperfusion and a clinical potential application to RIPC. However, although RIPC has shown successful results in experimental studies, clinical trials on CABG have failed to demonstrate a benefit of RIPC in humans. Strikingly, the main proposed factors associated with this translational failure also impair the balance of the autonomic nervous system (ANS), which has shown to play a key role in RIPC cardioprotection in animal models. Comorbidities, chronic pharmacological treatment and anesthetic drugs - common conditions in CABG patients - cause an ANS imbalance through parasympathetic activ