Letter by Heling et al Regarding Article, “Remote Ischemic Preconditioning in Human Coronary Artery Bypass Surgery: From Promise to Disappointment?”

To the Editor:

We read with great interest the study by Rahman et al1 that tested in a prospective, randomized, and placebo-controlled trial whether remote ischemic preconditioning (RIPC) may improve myocardial or other end-organ protection after on-pump coronary surgery. Given the absence of RIPC effects, the authors concluded that RIPC has not fulfilled the promise of a practically useful form of improved myocardial protection.

Ischemic preconditioning has been recognized as a major cardioprotective phenomenon for many years. In percutaneous coronary intervention, RIPC has been associated with reduced troponin and increased myocardial salvage in patients with acute myocardial infarction.2 Despite advances in our understanding, the exact mechanism of RIPC is still unclear. There is evidence from several experimental studies that pain is a strong trigger of preconditioning of the heart. Knockout mice for TRPV1, a multimodal pain receptor, are less sensitive with regard to RIPC.3 Another study has demonstrated that RIPC is dependent on intact local neural pathways.4

In this context, in the trial by Rahman et al,1 RIPC was applied after induction of anesthesia, ie, in painless patients.1 Furthermore, volatile narcotics were used, which may induce additional conditioning effects.5 These data add another piece of evidence that pain may play a central role in the concept of RIPC. Therefore, we hypothesize that it is too early to conclude that RIPC fails to induce myocardial protection in patients with cardiovascular disease. Furthermore, it is tempting to speculate that the remote preconditioning stimulus is closely associated with the sensation of pain. If it is true that the molecular basis for RIPC is pain, and if RIPC is shown to be beneficial in large-scale clinical trials, cardiovascular healing would be a painful procedure. Simplicity and low costs are strong arguments in favor of RIPC, warranting further efficacy studies in interventional and surgical cardiovascular medicine.

Disclosures

None.

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References

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