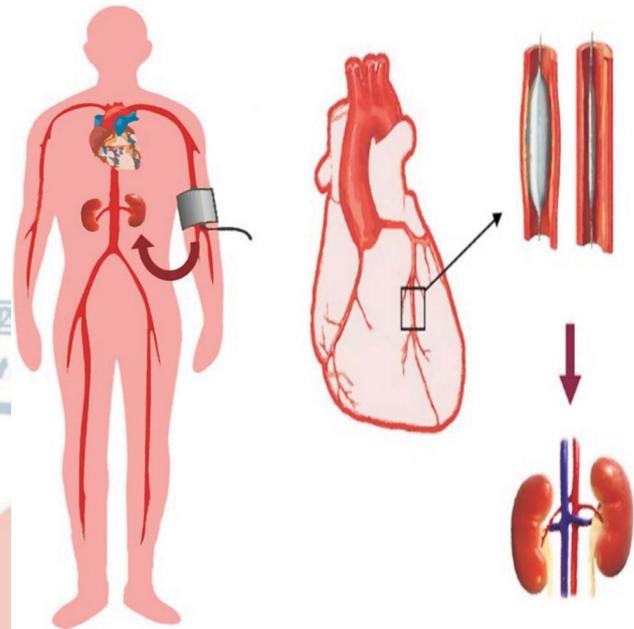


## Major Differences among Various Types of Remote Ischemic Conditioning

Cheng-Wei Liu,<sup>1,2,3</sup> Chan-Shien Ho<sup>4</sup> and Shin-Rong Ke<sup>2</sup>

We read with much interest in the recent issue of *Acta Cardiologica Sinica*.<sup>1</sup> The authors wisely showed that distal coronary perfusion pressure was improved in the patients with coronary artery disease who underwent remote ischemic preconditioning (RlpreC) at left thigh, that was performed by inflating a blood pressure cuff to totally occlude blood flows of dorsalis pedis artery, as compared with the control.<sup>1</sup> Remote ischemic conditioning (RIC) is difficultly conceptualized and easily confused, involving sites, duration, and cycles of conditioning, and effects of conditioning on a target organ. We previously conducted a study to investigate the association between contrast-induced acute kidney injury and numbers of coronary balloon inflation and deflation mimicking remote ischemic post-conditioning (RlpostC) in the patients with acute myocardial infarction (AMI).<sup>2</sup> Major differences are found in the two studies;<sup>1,2</sup> Xu et al. performed RlpreC at a remote site (left thigh) to induce protective effects on an index organ (heart), whereas post-conditioning at an index site (heart) was thought to induce effects on a remote organ (kidney) in the study by Liu et al. We illustrated Figure 1 to make the concepts of RIC simply regarding various types.

A meta-analysis concluded that RIC was associated with better myocardial salvage in AMI patients,<sup>3</sup> and an ongoing randomized-controlled trial is conducted to elucidate the association between RIC and major cardiac



**Figure 1.** Ischemic conditioning at a remote organ of an upper arm by a blood-pressure cuff induces an effect on a remote organ of a kidney (upper left panel) and ischemic conditioning at an index organ of heart by a coronary balloon induces an effect on a remote organ of a kidney (upper right).

events.<sup>4</sup> Therefore, we expect that the authors can investigate the effects of RlpostC on coronary perfusion pressure in MI patients, given that only post-ischemic conditioning can be applied in the condition of MI.

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### CONFLICT OF INTEREST

All the authors declare no conflict of interest.

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