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**Cardiology 2020: Duration of the Reoxygenation Interval Applied before Ischemic Postconditioning: Fine-Tuning the Protocol for Human Myocardium - Paula Soler-Ferrer - Vall d'Hebron Research Institute (VHIR), Barcelona, Spain.**

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## Introduction

Cardiovascular diseases remain the main cause of death and disability in the world . In patients suوering myocardial infarction, the infarct size is a major determinant of ventricular remodeling and the most important determinant of heart failure . Herefore, therapeutic eوorts are aimed at limiting the infarct size, usually by early reperfusion through percutaneous coronary intervention or intravenous thrombolysis. Both therapies are eوective in preventing post-infarction heart failure and improving survival. However, reperfusion aier prolonged ischemia also produces a paradoxical myocardial injury that may limit the eٹcacy of reperfusion therapies. He detrimental eوect of reperfusion injury can be counteracted by interventions such as ischemic post-conditioning (IPostC), which consists of brief repetitive coronary occlusions during the early reperfusion period. IPostC was first described by Zhao et al. in a dog model of myocardial infarction. In this study, three cycles of 30 s of reperfusion/ischemia each aier 60 min of ischemia followed by reperfusion reduced infarct size to a degree similar to ischemic preconditioning (IPreC), a phenomenon that renders the myocardium more resistant to an ischemic insult by the previous application of short periods of ischemia. However, the results from other animal models and clinical studies on the eٹcacy of IPostC have been controversial, as benefits [8-10], no eوect and detrimental eوects have all been described. One reason for these variable results may be the use of diوerent IPostC protocols. Using an in vitro model of ischemia/reoxygenation of human myocardium, our laboratory reported that the most eوective IPostC protocol was one 120 s cycle of reperfusion/ischemia aier 90 min of normothermic global ischemia. However, the optimal time of the interval between the termination of prolonged ischemia and the application of the short ischemia of the IPostC protocol, a time when reperfusion injury is most likely, remains unclear. Hence, the aim of the present study was to investigate the most eوective duration of the reoxygenation period within the IPostC protocol in the human myocardium.

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