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THE COMBINATION THERAPY OF CILOSTAZOL AND ISCHEMIC POSTCONDITIONING PROTECTS AGAINST ISCHEMIA-REPERFUSION INJURY IN NON-DIABETIC AND DIABETIC RAT HEARTS WITH LONG-TERM ATORVASTATIN TREATMENT

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Objective This study is to investigate if the combination therapy of cilostazol and ischemic postconditioning (Ipost) could protect the non-diabetic and diabetic rat hearts against reperfusion injury after long-term atorvastatin treatment.

Methods Non-diabetic and diabetic rats were randomly assigned to six groups: (1) nonconditioning, (2) Ipost, (3) atorvastatin (2 mg/kg/day for two weeks), (4) atorvastatin and Ipost, (5) atorvastatin and cilostazol (20 mg/kg cilostazol once before reperfusion), (6) atorvastatin, cilostazol, and Ipost. Infarct sise, haemodynamics and expression of Akt and eNOS were examined.

Results Long-term atorvastatin treatment without or with Ipost didn't decrease reperfusion injury in non-diabetic and diabetic rat hearts. However, the cardioprotective effects were shown in the group of statin, cilostazol and Ipost (25.0±4.9% and 31.1±5.5% in non-diabetic and diabetic hearts), but not in the group of statin and cilostazol (44.8±4.76% and 57.7±5.2%). Western blot results revealed that Akt and eNOS phosphorylation were detected in the combination treatment of cilostazol and Ipost after long-term statin treatment.

Conclusions The combination therapy of cilostazol and Ipost could reduce reperfusion injury via increasing Akt and eNOS phosphorylation in statin-treated non-diabetic and diabetic hearts.