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Ethyl Pyruvate Prevents Ischemia Reperfusion Injury in Isolated Perfused Rat Heart

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***SUMMARY*. The aim of the present study was to investigate the protective effect of ethyl pyruvate (EP) against ischemia reperfusion (I/R) injury in isolated rat heart. Male Sprague-Dawley rats were divided into three groups (n = 8); Group 1: Control group, Group 2: I/R, Group 3: I/R+EP. Ischemia was produced for 30 min by blocking the perfusion with Krebs Henseleit solution and it was followed by reperfusion for 60 min. In group 3, EP (2 mmol/L) was added into Krebs Henseleit solution after stabilization period. EP did not change the number of α-smooth muscle actin positive vessels and expression of Bcl-2 and desmin. Treatment with EP significantly reduced I/R induced extension in infarct size ($p < 0.001$) and release of lactate dehidrogenase ($p < 0.001$) and creatine phosphokinase ($p < 0.05$). Myocardial I/R injury significantly increased oxidative stress index and malondialdehyde, total oxidant status levels and significantly decreased paraoxonase actvity and total antioxidant status ($p < 0.05$). On the other hand, alterations in these biochemical indices due to I/R injury were attenuated by EP treatment ($p < 0.01$). These results show that ethyl pyruvate prevents ischemia reperfusion injury in isolated perfused rat heart.**

KEY WORDS: Apoptosis, Ethyl pyruvate, Infarct size, Myocardial reperfusion injury, Oxidative stress.

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