



Protective effect of ischemia preconditioning on ischemia-reperfusion injury in rat liver transplantation

Z.S. Qing^{1*}, X.S. Zhang^{2*}, C.C. Gao³, W.D. Liu¹, T.F. Xia¹, K. Wu¹ and L.Q. Pang¹

¹Department of General Surgery, Huai'an First People's Hospital, Nanjing Medical University, Huai'an, Jiangsu, China

²Department of General Surgery, Lian'shui County People's Hospital, Lian'shui, Jiangsu, China

³Department of Gastroenterology, Huai'an First People's Hospital, Nanjing Medical University, Huai'an, Jiangsu, China

*These authors contributed equally to this study.

Corresponding authors: L.Q. Pang / K. Wu

E-mail: LiqunPang@163.com / wukun_007@hotmail.com

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ABSTRACT. We explored the protective effect of ischemia preconditioning (IP) on ischemia-reperfusion injury in rat liver transplantation. An orthotopic liver transplantation model was utilized in the study. A total of 54 Sprague-Dawley rats were divided into a control group (group A, no liver transplantation), liver transplantation group (group B, heparin Ringer's lactate solution was perfused via the portal vein before donor liver collection), and liver transplantation with IP group (group C, IP was performed for different time periods before donor liver collection). Liver function, B-cell lymphoma 2 expression in hepatic cells, cell apoptosis, and cellular ultrastructure changes were detected after surgery. After surgery, serum alanine aminotransferase activity was significantly higher in group B than in group A, while it was not clearly enhanced in group C and decreased progressively with increasing cycles of IP as bile capacity gradually increased. Compared

with group B, group C showed alleviated injury of hepatic cells, increased B-cell lymphoma 2 expression, and a lower apoptosis index. IP had a protective effect on ischemia-reperfusion injury in rat liver transplantation, and the mechanism correlated with increased B-cell lymphoma 2 expression in hepatic cells and inhibition of cell apoptosis.

Key words: Ischemia preconditioning; Ischemia-reperfusion injury; Liver transplantation; Rats