

The Effect Of Carnosine On Lower Extremity Ischemia Reperfusion Injury In Rat

Purpose: The purpose of this study is; to examine the effect of carnosine on ischemia reperfusion injury in lungs and muscle occurring after occlusion – reperfusion of infrarenal abdominal aorta in rats.

Material and Method: Twentyfour Sprague-Dawley rats were randomly divided into 3 groups (n=8). Sham laparotomy (control) group underwent laparotomy and dissection of the infrarenal abdominal aorta without occlusion and saline was given intraperitoneally. In aortic ischemia reperfusion groups (group 2 and 3), after laparotomy and exteriorization of the infrarenal abdominal aorta, aorta was occluded for 30 min ischemia and then the clamp was removed for 60 min reperfusion. In group 2; saline and in group 3; 250mg/kg carnosine, in equal volumes, were given intraperitoneally 10 min before declamping of the aorta. The blood, lung and muscle specimens were taken for biochemical analysis of malonil dialdehyde, superoxide dismutase, catalase, myeloperoxidase, nitric oxide, glutathione peroxidase, glutathione reductase, total glutathione and oxide glutathione. Additionally, in blood samples total antioksidant capacity was analyzed.

Results: In lung specimens, levels of malonil dialdehyde, superoxide dismutase, myeloperoxidase, oxide glutathione and total glutathione in the aortik ischemia reperfusion + saline group (group 2) were significantly higher than the levels in the sham laparotomy (control) group ($p<0.05$). Level of glutathione reductase, malonil dialdehyde and oxide glutathione in the aortik ischemia reperfusion + carnosine group (group 3) was significantly lower than the level in the aortik ischemia reperfusion + saline group ($p<0.05$).

Conclusion: Carnosine could prevent the systemic and local effects of abdominal aortic occlusion-reperfusion injury in rats. Since this is a first demonstration for the use of carnosine in abdominal aortic occlusion-reperfusion injury, the results of the present study could light the way for the future studies.

Key word: Ischemia Reperfusion Injury, Gastrocnemius, Lung, Carnosine

e-mail: drbilgealacam@yahoo.com.tr