









The effect of dexmedetomidine on gastric ischemia reperfusion injury in rats. Biochemical and histopathological evaluation

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ABSTRACT

Purpose: To evaluate the protective effect of dexmedetomidine on gastric injury induced by ischemia reperfusion (I/R) in rats. **Methods:** A total of 18 male albino Wistar rats were divided into groups as: gastric ischemia reperfusion (GIR), gastric ischemia reperfusion and 50 µg/kg dexmedetomidine (DGIR) and sham operation (HG) group. After the third hour of reperfusion, the biochemical and histopathological examinations were performed on the removed stomach tissue. **Results:** Malondialdehyde (MDA) and myeloperoxidase (MPO) levels were found to be significantly higher in GIR compared to HG ($p < 0.05$). A statistically significant decrease was observed at the DGIR compared to the GIR for oxidant levels. Total glutathione (tGSH) and superoxide dismutase (SOD) levels were statistically significantly decreased at the GIR, and antioxidant levels were found to be significantly higher in the DGIR ($p < 0.05$). There was no significant difference between HG and DGIR in terms of SOD ($p = 0.097$). The DGIRs' epitheliums, glands and vascular structures were close to normal histological formation. **Conclusions:** Dexmedetomidine is found to prevent oxidative damage on the stomach by increasing the antioxidant effect. These results indicate that dexmedetomidine may be useful in the treatment of ischemia-reperfusion-related gastric damage.

Key words: Reperfusion Injury. Oxidative Stress. Dexmedetomidine. Stomach. Rats.

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