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Artesunate affords protection against aspirin–induced gastric injury by targeting oxidative stress and proinflammatory signaling

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Abstract

Background Prolonged use of aspirin, a commonly prescribed non steroidal anti-inflammatory drug, is well known to produce gastrointestinal toxicity which could be minimized by various anti-secretory agents. The present study was carried out to evaluate the protective effect of artesunate against aspirin induced gastric injury in rats.

Methods Gastric injury was induced in fasted Wistar rats by oral administration of aspirin. The effect of 50 and 150 mg/kg of artesunate was studied on macroscopic changes, gastric secretions, histology, oxidative stress and inflammatory markers in the stomach tissue after 5h of induction of gastric injury. Immunohistochemical analysis for the expression of IL-1β, IL-6, NF-κB(p65) and COX-2 was also carried out. The effect of artesunate was compared with that of standard anti-ulcer drug famotidine (20 mg/kg).

Results Artesunate pretreatment produced a dose-dependent reduction in aspirin induced gastric injury and restored the gastric juice parameters. It normalized the tissue levels of oxidative stress markers (glutathione, malondialdehyde and superoxide dismutase activity) and mediators of