

Anti-ulcer activity of polyphenols of *Eleusinian corocana* (L.) Gaertn, in Aspirin plus pyloric ligation induced gastric ulcer in Wistar albino rats

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The polyphenols of *Eleusinian corocana* (L.) Gaertn have various nutraceutical and therapeutic values in human health. It has been reported to possess potent anti-inflammatory, antioxidant, antimicrobial, antidiabetic, and gastroprotective effects. However, there is no experimental evidence to reveal its gastroprotective action. The present study was carried out to evaluate the protective effect of polyphenols from Ragi (PPR) against Aspirin plus pyloric ligation-induced gastric ulcers in Wistar albino rats. The Aspirin plus pyloric ligation induced a significant increase in the ulcer index, pH, total and free acidity of the gastric juice in the ulcer control group rats. Macroscopic examination of the internal aspects of stomach tissue in the ulcer control group rats showed more severe mucosal erosion, with large areas of haemorrhagic streaks. Histopathological examination of stomach tissue showed marked destruction of the epithelial layer (EL), submucosal oedema, cell infiltration, and severe congestion of blood vessels in ulcer control rats. Pre-treatment with polyphenols of Ragi and Pantoprazole significantly reduced pH ($p < 0.01$), total acidity, and Ulcer index as compared to the ulcer control group ($p < 0.05$). Aspirin plus pyloric ligation induced mucosal erosion and haemorrhagic streaks, which were significantly attenuated with polyphenols of Ragi and Pantoprazole group as compared with ulcer control ($p < 0.05$). Histopathological examination revealed moderate protection in the polyphenols of the Ragi-treated group. The reference standard and polyphenols of Ragi group rats showed almost normal cytoarchitecture of the stomach. There was no epithelial destruction; however, we observed mild submucosal oedema and mild congestion in the blood vessels, and the severity of ulceration was considerably less in comparison to the ulcer control group. These results show that the polyphenols of Ragi have the potential to protect gastric tissue against NSAIDs and stress. The gastroprotective actions of polyphenols in Ragi might be due to their antioxidant, anti-inflammatory, and cytoprotective properties. Further studies are required to elucidate its dose-dependent actions and mechanism of action at the molecular level.

Keywords: Antioxidant, Anti-ulcer, Aspirin, NSAIDs, Polyphenols of ragi, Pyloric ligation

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