SHORT COMMUNICATION

EFFECT OF NIMESULIDE, ROFECOXIB AND CELECOXIB ON GASTRIC TISSUE GLUTATHIONE LEVEL IN RATS WITH INDOMETHACIN-INDUCED GASTRIC ULCERATIONS

Konca Altinkaynak¹, Halis Süleyman², Fatih Akçay¹,³

¹Department of Biochemistry and ²Department Pharmacology, Atatürk University, Medical Faculty, TR-25240 Erzurum, Turkey


Glutathione (GSH) is a tripeptide and a superoxide radical scavenger and it protects thiol protein groups required for maintaining the integrity of cell against oxidation. GSH is present in the stomach at high concentrations and plays an important role in maintaining the integrity of the gastric mucosa. We investigated whether oral administration of nimesulide, rofecoxib and celecoxib, selective COX-2 inhibitors, changed GSH level in the gastric tissue of indomethacin-treated rats. Thirty albino Wistar rats were used in this study. Animals were randomly assigned to five groups as follows: control group received only distilled water (group I). Nimesulide at a dose of 100 mg/kg (group II), rofecoxib at a dose of 25 mg/kg (group III) and celecoxib at a dose of 100 mg/kg (group IV) were intragastrically administered 5 min before indomethacin (25 mg/kg) treatment. Equal volume of distilled water was given to the indomethacin-administered group (group V). Indomethacin was administered intragastrically. Gastric tissue mean GSH level was significantly higher in nimesulide-treated group than in rofecoxib- and celecoxib-treated groups, there was not any significant difference between the nimesulide and control groups. Our study showed that although nimesulide prevented the indomethacin-induced gastric ulcers completely, rofecoxib and celecoxib did not prevent the indomethacin-induced ulcer formation. In conclusion, we propose that nimesulide exerts a prophylactic effect on the indomethacin-induced gastric ulcers by enhancing gastric GSH level.

Key words: glutathione, COX-2 inhibitors, ulcer

³ correspondence; e-mail: falkay32@hotmail.com