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ANTI-INFLAMMATORY EFFECTS OF SELECTIVE COX-2 INHIBITORS

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In this study, effects of rofecoxib, celecoxib, nimesulide on the acute phase of inflammation were studied in the carrageenan-induced paw edema model and their influence on the chronic phase of inflammation was evaluated in the cotton pellet granuloma tests. Additionally, effects of these drugs on capillary vascular permeability were examined in the hyaluronidase test and were compared with that of indomethacin (nonselective COX inhibitor).

The results of the study demonstrated that rofecoxib, celecoxib, nimesulide, indomethacin at a dose of 10 mg kg^{-1} reduced the volume of paw edema by 40.6% ($p < 0.05$), 21.6% ($p < 0.05$), 20.3% ($p < 0.05$), 64.0% ($p < 0.05$), respectively. Anti–proliferative effect of rofecoxib was of 29%, while those of celecoxib and nimesulide were of 13.5 and 21.2%, respectively. Indomethacin had an anti-proliferative effect of 44.2%. When the drugs were given at a dose of 25 mg kg^{-1}, rofecoxib, celecoxib, nimesulide reduced carrageenan-induced paw edema by 50.6% ($p < 0.004$), 27.9% ($p < 0.004$) and 33.0% ($p < 0.004$), respectively. Positive control, indomethacin, reduced the paw edema by 86.1% ($p < 0.004$). As a result, indomethacin, rofecoxib, celecoxib, nimesulide significantly inhibited both acute and chronic inflammation. While indomethacin, celecoxib, nimesulide significantly reduced capillary vascular permeability, the effect of rofecoxib was insignificant. We could not clarify this observation. Further studies are required to enlighten this effect of rofecoxib.

Key words: *carrageenan, hyaluronidase, COX-2 inhibitors, inflammation*

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