

**Wound healing of acetic acid-induced gastric ulcer in rats and the effects of cimetidine and calcitonin, with special reference to prolylhydroxylase and collagenase enzyme activity.**

Maruyama, K; Okazaki, I; Arai, M; Kurose, I; Komatsu, H; Nakamura, M; Tsuchiya, M

**JOURNAL NAME-** J Gastroenterol

**VOLUME** 30

**NO** 3

1995 Jun

**PP** 301-9

**LANGUAGE-** English

The healing of acetic acid-induced gastric ulcer in rats and the effects of cimetidine and calcitonin were investigated with reference to the enzyme activity of both prolylhydroxylase and collagenase as related to histological findings. The rats were observed by endoscopy on the 3rd day after the subserosal injection of acetic acid; rats with ulcers were divided into three groups: non-treated, and cimetidine- and calcitonin-treated. The latter two groups were treated for 7 days. Prolylhydroxylase activity in active ulcers in the non-treated group was slightly higher on the 3rd day and significantly higher on the 10th day than the activity in control rats that had received subserosal injections of physiological saline solution on the respective days. In non-treated rats, the healed ulcer on the 10th day showed lower prolylhydroxylase activity than that in the active ulcer on the same day. Cimetidine did not affect prolylhydroxylase activity, but, with calcitonin, there was higher prolylhydroxylase activity in the healed than in the active ulcer, although the difference was not significant. Interstitial collagenase showed the highest activity on the 3rd day and decreased on the 10th day in non-treated rats. Collagenase activity was higher in the cimetidine-treated group, than that in the non-treated group, and numerous peroxidase-positive granulocytes were seen in the mucosa and submucosa. Calcitonin did not affect collagenase activity. The participation of both enzymes is indispensable in the healing process and the effects of anti-ulcer agents on these enzymes must be considered.