Effect of oral epidermal growth factor on mucosal healing in rats with duodenal ulcer

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摘要

Abstract

AIM: To investigate the effect of epidermal growth factor (EGF) on mucosal healing in rats with duodenal ulcer.METHODS: Male Sprague-Dawley rats were randomly divided into sham operation without EGF, sham operation with EGF, duodenal ulcer without EGF, or duodenal ulcer with EGF groups. Additionally, normal rats without operation served as the control group. Duodenal ulcer was induced in rats by 300 mL/L acetic acid. Rats with EGF were orally administered at a dose of 60 μg/kg/day in drinking water on the next day of operation (day 1). Healing of duodenal ulcer was detected by haematoxylin and eosin staining. Cell growth of damaged mucosa was determined by the contents of nucleic acids and proteins. The level of EGF in duodenal mucosa was measured by ELISA.RESULTS: The pathological results showed that duodenal ulcer rats with EGF improved mucosal healing compared with those without EGF after day 5. Duodenal ulcer rats with EGF significantly increased duodenal DNA content compared with those without EGF on day 15 (6.44±0.54mg/g VS 1.45±0.52 mg/g mucosa, $P < 0.05$). Duodenal RNA and protein contents did not differ between duodenal ulcer rats with and without EGF during the experimental period.Sham operation and duodenal ulcer rats with EGF significantly increased duodenal mucosal EGF content compared with those without EGF on day 5 (76.0±13.7 ng/g VS 35.7±12.9ng/g mucosa in sham operation rats, and 68.3±10.9 ng/gVS 28.3±9.2 ng/g mucosa in duodenal ulcer rats, $P < 0.05$).CONCLUSION: Oral EGF can promote mucosal healing of the rats with duodenal ulcer by stimulating mucosal proliferation accompanied by an increase in mucosal EGF content.