Anti-ulcerogenic effect of aqueous propolis extract and the influence of radiation exposure

Mona A. El-Ghazaly[1], Rasha R. A. Rashed[1], Mohamed T. Khayyal[2]
[1]Department of Drug Radiation Research, National Centre for Radiation Research and Technology, Atomic Energy Authority, Egypt
[2]Department of Pharmacology, Faculty of Pharmacy, Cairo University, Egypt
Department of Drug Radiation Research, National Centre for Radiation Research and Technology, Atomic Energy Authority, Egypt.

Abstract

Purpose: To study the effect of aqueous propolis extract (AEP) against indomethacin (Indo)-induced gastric ulcers in irradiated and non-irradiated rats.

Materials and methods: Animals were irradiated at different radiation dose levels before the induction of ulcers. AEP was injected orally 1 hour before induction of gastric ulcers and the effects compared with those of lansoprazole (Lanso), which was used as a reference anti-ulcerogenic drug.

Results: Pretreatment of rats, either irradiated or non-irradiated, with AEP effectively protected against Indo-induced gastric ulceration. This was associated with a reduction in acid output and peptic activity and an increase in the secretion of mucin. The mucosal prostaglandin E2 (PGE2) level was also increased. The levels of tumor necrosis factor-alpha (TNF-α) and interleukin-1beta (IL-1β) were suppressed to the same extent after treatment. Both propolis and Lanso were effective in reducing the number of gastric lesions as well as the plasma level of malondialdehyde (MDA).

Conclusions: These findings indicate that the gastroprotective effect of AEP could be of value in the management of excessive gastric damage induced by radiation exposure.

Keywords: ***Gamma (γ)-radiation, propolis, gastric ulcer, indomethacin, mucin, peptic activity, prostaglandin E2, cytokines***

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