ANTI-INFLAMMATORY EFFECT OF MELITTIN ON STOMACH AND JEJUNUM OF MICE

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Melittin is a principle toxic peptide of bee venom that used in traditional medicine for treatment of different diseases. However, the anti-inflammatory effect of melittin on gastrointestinal (GI) inflammation has not been elucidated. The aim of the present study is to investigate the anti-inflammatory effect of melittin on stomach and jejunum of mice treated with indomethacin that induced inflammation in the GI of mice. The study involved four experimental groups treated by stomach gavage: Control group treated with distilled water; Indomethacin group treated with indomethacin (50 mg/kg) for one day; Melittin group treated daily with melittin (10 or 40µg/kg) for 3, 5 or 10 days; Indomethacin-melittin group treated with indomethacin followed by melittin treatment as mentioned above. Samples from the stomach body and jejunum collected from all animals were prepared for physiological, histopathological or immunohistochemical studies. The results showed that treatment with indomethacin induced mucosal erosion and exfoliation, lamina properia and submucosal inflammation and immunohistochemical depletion of EMA and SMA in stomach and jejunum tissues. Treatment with melittin to indomethacin treated mice reduced the histological and immunohistochemical alterations in a dose and time dependent manner. Also, a significant increase in levels of pro-inflammatory agents (5-HT and IL-1B) were recorded in the mucosa of jejunum during inflammation- induced by indomethacin, while these levels were reduced by melittin treatment. These data suggested that melittin can protect GI from the harmful effects of indomethacin. The study may also support a potential strategy of using melittin for therapy of GI inflammation.

Keywords: Melittin, Inflammation, Stomach, Jejunum.