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Protective Effect of jujube Honey Against Ovalbumin-Induced Asthma in Albino Wistar Rats

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OBJECTIVE: This study aimed to evaluate the protective effect of Moroccan jujube honey against ovalbumin (OVA)-induced asthma in Albino Wistar rats.

METHODOLOGY: Rats were divided into three groups: a normal group (non-asthmatic, treated with distilled water), a control group (asthmatic, treated with distilled water), and a honey-treated group (asthmatic, treated with an aqueous solution of honey at 1 g/kg of BW). Asthma was induced using OVA sensitization and challenge, where rats received intraperitoneal injections of 1 ml of a sensitizing preparation containing 200 µg OVA and 10 mg Al(OH)per ml of saline on days 1, 2, 3, and 11 of the experiment. At day 5, rats were daily gavaged by selective interventions for a total period of 21 days. From day 19 of gavage, they were exposed to 300 µl of saline containing 1.5 mg OVA via intranasal instillation for three consecutive days. Blood, bronchoalveolar lavage fluid (BALF), and lung tissues were collected at the end of the experiment for immunological and histopathological analysis, including total white blood cell count, monocytes, lymphocytes, neutrophils, basophils, eosinophils, and IgE levels.

RESULTS: The control group exhibited a significant increase in white blood cell count, monocytes, lymphocytes, neutrophils, basophils, eosinophils, and IgE levels compared to the normal group, whereas the honey-treated group showed a preventive effect by attenuating these increases. Besides, histological analysis revealed alveolar condensation, bronchial dilation, pneumocyte hyperplasia, and peripheral nodular inflammatory infiltration in the control group. However, treatment with jujube honey mitigated these pathological changes.

CONCLUSION: These findings suggest that jujube honey may have a protective role against OVA-induced asthma by modulating inflammatory and immune responses.