

عنوان مقاله:

Genistein preserves the lungs of ovariectomized diabetic rats: addition to apoptotic and inflammatory markers in the lung

محل انتشار:

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خلاصه مقاله:

Objective(s): The role of isoflavones in pulmonary structure and function during menopause is not well studied. Moreover, the important role of estrogen in the physiological function of respiratory system has been revealed. Genistein, as an isoflavone, mimics estrogenic in diabetic and ovariectomized rats. Here, we hypothesized that genistein would reverse changes in the protein expression levels related to estrogen deficiency in the lung of ovariectomized diabetic rats. Materials and Methods: Wistar female rats were assigned to four experimental groups (n=10 in each group): sham, rats underwent laparotomy without removing the ovaries; OVX, rats that underwent ovariectomy; OVX.D, rats underwent bilateral ovariectomy and were fed a high-fat diet (HFD); OVX.D.G, ovariectomized diabetic rats with genistein administration (1 mg/kg /day). After ovariectomy, rats continued to feed HFD for a 4-week period. After 4 weeks of HFD feeding, a single dose of 30 mg/kg of streptozotocin was administered in the diabetic group. Genistein was administered for eight weeks. At the end of the experiment, lung tissue was removed and Western blotting technique and hematoxylin-eosin staining were used for evaluation of the lung. Results: Treatment with genistein significantly decreased inflammatory and apoptotic biomarkers in the ovariectomized diabetic rats compared to non-treated animals ($P < 0.05$). Also, genistein exerted a protective effect in the lung architecture. Conclusion: Genistein partly reversed ovariectomy-induced changes in apoptotic and inflammatory biomarkers in the lung. Our data suggest that genistein treatment as a natural replacement therapy may prevent the estrogen deficiency effects in the lung of diabetic menopausal women.

کلمات کلیدی:

Apoptosis, Diabetes, Genistein, Inflammation, Ovariectomy

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