عنوان مقاله:

Involvement of Mfn2, Bcl2/Bax signaling and mitochondrial viability in the potential protective effect of Royal jelly against mitochondria-mediated ovarian apoptosis by cisplatin in rats

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خلاصه مقاله:

Objective(s): The current study aimed to assess cisplatin-mediated ovarian apoptosis in a rat model by Royal jelly (RJ). Materials and Methods: Thirty female adult albino rats (180-200 g) were divided into three groups (n=10): saline (0.9% NaCl, IP) was given to the control group, the cisplatin group: received (5 mg/kg/once a week IP) for 5 successive weeks, the RJ+Cis. group: received RJ (100 mg/kg/ day PO daily), and Cisplatin (5 mg/kg/once per week IP) for 5 successive weeks. At the end of the experiment, rats were sacrificed and their ovaries were isolated and used for biochemical analysis, molecular investigations and morphometric assessment as well as histological study. Moreover, blood samples were collected for determination of follicle-stimulating hormone (FSH), luteinizing hormone (LH), Estradiol, progesterone and anti-mullerian hormone (AMH).Results: The current study clarified that RJ given to rats prior to cisplatin significantly increased the ovarian and uterine weights, in addition to follicular count at P0.05 compared to rats injected only with cisplatin. Moreover, it restored normal ovarian histological structure with a concurrent reduction in FSH, and LH levels, and increased AMH and ovarian hormone concentrations at P0.05 compared to cisplatin group. Also, RJ decreased the ovarian antioxidant/oxidative imbalance harmonized with significant suppression of inducible nitric oxide synthase and increase of quinone oxidoreductase 1 mRNA expression at P0.05 compared to cisplatin group.Conclusion: We concluded that RJ could alleviate mitochondrial-induced ovarian apoptosis caused by cisplatin via increasing anti-apoptotic Bcl2, and diminishing pro-apoptotic Bax with a concomitant increase of Mfn2 mRNA and protein expressions.

کلمات کلیدی:

Bax, Bcl2, Mfn2, Mitochondrial viability, Ovaries