

Honey Bee Venom Modulates Hyperglycemia in Response to Hyperandrogenism in Polycystic Ovarian Syndrome-Induced Rats[#]

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Abstract. Polycystic Ovarian Syndrome (PCOS) is inflammatory disease characterized by hyper androgenemia, hyperthecosis and chronic anovulation. Honey bee venom (HBV) contains a variety of biologically active components having various pharmaceutical properties. This study was designed to detect the possibility of HBV application as an anti-inflammatory therapeutic agent. For induce PCOS, 2mg/100gr B.W Estradiol Valerate (EV) was subcutaneously injected to induce PCOS in mature rats then ovaries and serum from three groups of EV-induced PCOS, HBV-treatment and normal intact animals was collected for histological comparison and blood sugar test. As a result, a significant increase in ovarian weight was observed in experimental group rather than controls. Furthermore, in HBV-treated group a significant decrease was observed in ovary weight comparing with experimental group ($P<0.01$). The results obtained from CLIA declared that testosterone and Estradiol levels in experimental group significantly increased ($P<0.001$). These hormones were decreased in animals treated with HBV. Blood sugar level showed reduction in HBV-treated rats. Thickness of theca layer, number and diameter of cysts significantly decrease in HBV group comparing with PCOS group. Moreover, corpus luteum, as a sign of ovulation, was observed in HBV-treated ovaries. In conclusion our results suggest that beneficial effect of HBV against PCOS may be mediated by the inhibitory effect of HBV on TNF- α level.

Keywords: *Polycystic ovarian syndrome, honey bee venom, blood sugar, theca layer*

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