

2nd Global Summit on

Herbals & Natural Remedies

October 17-19, 2016 Kuala Lumpur, Malaysia

Effects of thymoquinone treatment on testosterone-induced benign prostatic hyperplasia in Wistar rats

Bahaa Al-Trad, Janti Qar, Khaled Al-Batayneh, Emad Hussien, Mazhar Al-Zoubi, Ahmad Alghadi, Omar Aljumaili and Alaa Aljabali
Yarmouk University, Irbid, Jordan

Increasing evidence suggests that thymoquinone (TQ), the principal bioactive constituents of *Nigella sativa* oil, exhibits anti-inflammatory, anti-oxidant and anticancer effects on *in vitro* and *in vivo* models. Benign prostatic hyperplasia (BPH) is the most common age-related disease in men. The present study was intended to address the possible protective effects of TQ on the histopathological changes related to the BPH induced by testosterone in rats. A total of 34 adult male Wistar rats were divided into four groups. A negative control group (n=10) received vehicle orally (corn oil, 2 ml/kg) and two groups were injected testosterone subcutaneously (3 mg/kg) to induce BPH. Animals receiving testosterone were randomized to untreated BPH group (n=6,) and BPH+TQ treated group (n=6, 50 mg/kg orally) for 14 days. Histological changes and the mRNA levels for transforming growth factor beta1 (TGF- β 1), an inflammatory cytokine, and vascular endothelial growth factor-A (VEGF-A), a biomarker of angiogenesis, were assayed in the prostate tissue. There were significant increases in prostate weight, prostate body weight ratio, and the expression levels of TGF- β 1 and VEGF-A in the untreated BPH group compared to the control group. Histological examination of the prostate in the BPH group showed morphological abnormalities such as a higher degree of proliferation in the glandular epithelial and stromal area with numerous intraluminal papillary folds. In TQ treated rats, however, a reduction in the prostate weight, prostate body weight ratio, epithelial hyperplasia and the expressions of TGF- β 1 and VEGF-A were observed compared to the BPH rats. These results suggested that TQ inhibited the development of BPH and might be a useful herbal treatment for BPH.

Biography

Bahaa Al-Trad has completed his PhD from Leipzig University/Germany/2010 and Post-doctoral studies from University of Veterinary Medicine Vienna, Austria. Currently, he works as an Assistant Professor at the Department of Biological Sciences, Yarmouk University, Irbid, Jordan. He has published more than 10 papers in peer-reviewed journals.

bahaa.tr@yu.edu.jo

Notes: