Original Paper

Effect of *Nigella sativa* oil against Bisphenol A induced toxicity on the tissue of male NMRI mice kidney: A stereological study

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Abstract

Background and Objective: Bisphenol A (BPA) is an endocrine disruptor chemical and as an environmental pollutant is able to generate free radicals causing tissue damage. This study was done to investigate the effect of *Nigella sativa* oil against BPA induced toxicity on the tissue of male NMRI mice kidney by stereological method.

Methods: In this experimental study 24 adult male NMRI mice (32±3 g) were randomly allocated into control, BPA (200 mg/kg/day), BPA (200 mg/kg/day) plus *Nigella sativa* oil (5 ml/kg/day) and *Nigella sativa* oil (5 ml/kg/day) groups and treated for 5 weeks, orally. At the end, animals were sacrificed, their left kidneys were removed, fixed, sectioned, processed and stained with Heidenhain' azan staining method. Then, the kidney tissue sections were evaluated using stereological method and serum malondialdehyde (MDA) level was also measured.

Results: The total weight and volume of kidney, volume of cortex, volume of proximal and distal tubules and volume of their lumen, volume of interstitial tissue, volume of glomeruli, tuft, as well as serum MDA level significantly increased in BPA treated group compared to the controls ($P<0.05$). These parameters were significantly reduced in BPA plus *Nigella sativa* oil group compared to BPA ones ($P<0.05$).

Conclusion: This study revealed that *Nigella sativa* oil can reduce the oxidative stress toxicity induced by BPA in the mice renal tissue.

Keywords: Kidney, Bisphenol A, *Nigella sativa* oil, Stereology, Mouse

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