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Evaluation of the protective effect of *Nigella sativa* oil on ovarian follicles in mice treated with silver nanoparticles

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Abstract

The effect of *Nigella sativa* oil (NSO) as an efficient antioxidant on ovarian follicles following treatment with Silver Nanoparticles (SNP) in adult mice. Twenty-four adult NMRI mice, weighing 27-30g were used in the present experiment. The animals were kept under optimum conditions of temperature (At 21± 2 ° C and ambient lighting conditions 12 hours of darkness and 12 hours of light) humidity and maintained on standard pellet diet with adequate water. They were divided into four groups of (six mice per group): control; Silver Nanoparticles (300 mg/kg/day, orally), *Nigella sativa* oil (5 ml/kg/day, orally) and finally Silver Nanoparticles plus *Nigella sativa* oil. After 30 days, the mice were sacrificed and the ovary tissues were separated. The results were analyzed using one-way ANOVA and Tukey's test, and the means were significantly different at $P<0.05$. The results of this study showed that, the mean total volume of ovary and the number of primordial, primary, secondary and graph follicles significantly decreased in the Silver Nanoparticles group compared with the control group ($p<0.05$). *Nigella sativa* oil significantly increased the above parameters in the SNP +NSO group compared to silver nanoparticles group ($p<0.05$). Furthermore, the number of follicles and total volume of ovary significantly increased in the *Nigella sativa* oil treated mice compared to the control ones ($p<0.05$) (Table 1). So it is not far-fetched that this oil has improved the factors in our study.

Keywords: Mice, *Nigella sativa* oil, Ovarian follicles, Silver Nanoparticles.