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Poster Presentations

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Protective effects of curcumin on sperm and stereological parameters in testes of formaldehyde-exposed NMRI mice: An experimental study

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Background: Formaldehyde (FA) exposure is one of the important causes of cellular injury and oxidative damage in testis, and leads to infertility.

Objective: This study aimed was to assess the protective effects of curcumin on sperm and stereological parameters in testes from formaldehyde-exposed NMRI mice.

Materials and Methods: At 6-8 weeks of age, 24 adult male NMRI mice weighing 30-35 g were separated into four groups (n = 6) based on the treatment they received: Group I (control) no treatment, group II received FA (10 mg/kg), group III received FA (10 mg/kg) and curcumin (100 mg/kg), and group IV (Solvent) received dimethyl sulfoxide (DMSO) (0.2 ml/day). Materials were

administered intraperitoneally for 35 days. After excision, epididymis tissues were placed in 1-ml aliquots of Ham's F10 medium at 37°C for 20 min and were then used in analyses of sperm parameters. Testes were fixed and stained with Hematoxylin and Eosin (H & E) for investigations of stereological indices. We also determined lipid peroxidation levels using malondialdehyde (MDA) assays.

Results: Mean sperm parameters (count, motility, viability, and morphology) differed significantly between groups II and III ($p \leq 0.001$). Stereological indices, including Leydig and spermatogonia cell numbers and surface-to-volume ratios of seminiferous tubules were significantly higher in group III than in group II ($p \leq 0.001$). Finally, MDA levels in group III were significantly lower than in group II ($p = 0.001$).

Conclusion: Our data showed that the curcumin, as an antioxidant, reduced FA-induced damage in sperm parameters and stereological indices in mice testis.

Key words: Formaldehyde, Curcumin, Testis, Mice.

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