

9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Poster Presentations

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The stereological evaluation of testis structure on protective effect of quercetin against lead acetate toxicity

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Background: Exposure to environmental pollutants tightly impacts on male fertility sometimes are irretrievable.

Objective: In the present study, we studied the toxic effects of lead acetate (Pb) on testicular structure, and the possible effect of quercetin on qualifying these effects.

Materials and Methods: Experimental groups, including the Pb, quercetin (QE), (Pb + QE), and

control mice, were treated at least one spermatogenic cycle. The fixed testes were dehydrated in graded ethanol, cleared in xylene, and embedded in paraffin wax. Serial sections were prepared using Cavalieri method in a series of equal parallel planes (5 and 20- μ m thickness). Then the samples were evaluated by stereological methods.

Results: Testicular weight, both absolute and relative, was higher in Pb-exposed mice in comparison with the control and Pb-quercetin groups. The increase in the size of testis was related to the lumen and connective tissue in this group. Lead acetate induced different patterns in testicular cell number; as spermatogonia, spermatocyte, and Sertoli cells number did not affect in lead acetate exposed group, while the total number of round spermatids and long spermatids significantly reduced.

Conclusion: In conclusion, Pb administration adversely impacted on the cellular organization and activation of the apoptotic pathways in the testis; on the other hand, quercetin co-administration with lead partially ameliorated these adverse effects.

Key words: Antioxidant, Heavy metal, Male fertility.

The original full text of this abstract has been published in *Biological Trace Element Research* 2020. <https://doi.org/10.1007/s12011-020-02454-8>.

How to cite to this article: Khodabandeh Z, Dolati P, Zamiri MJ, Mehrabani D, Bordbar H, Alaei S, Jamhiri I, Azarpira N. Protective effect of quercetin on testis structure and apoptosis against lead acetate toxicity: An stereological study. *Biological Trace Element Research* 2020: 1-1.