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Chronic exposure to lead induces decreased sex hormones and spermatogenesis disturbance in male Wistar rats

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Introduction: Many authors have reported adverse effects of environmental pollutants on sexual function, such as tobacco pesticides and heavy metals. Exposure of heavy metals has been associated with adverse effects on the development of gonads. In animals, exposure to lead could damage. Several experimental studies have reported impairment of the spermatogenesis but the mechanisms implied in the pathogenesis are not yet completely understood. Therefore, the present study was undertaken in albino rats to investigate the effects of lead on spermatogenesis on the one hand and testicular and serum gonadotropins and testosterone levels on the other.

Methods: For this study, ten male pubescent rats were randomly divided into two groups (n=5 in each group). The control group received distilled water and the experimental groups received the lead acetate solution (0.3%) while 90 consecutive days. After 90 days, the rats were euthanized. The blood and the testes were sampled for carrying out of the different tests.

Results: The results indicate hypertrophy of the testes in the exposed rats. In addition, we have observed a significant reduction in sex hormones and a highly disturbed spermatogenic process.

Conclusion: The present study demonstrates that lead accumulation in the blood affects male fertility by disrupting the biosynthesis of gonadotropins and testosterone as well as the process of spermatogenesis.

Biography

Konan Kouassi Martin a PhD student in Functional and Molecular Biology at the Félix Houphouët-Boigny University in Côte d'Ivoire. As part of this research, he joined the Cell Biology Unit of the Institute Pasteur Côte d'Ivoire. His research work focuses on the impact of environmental pollutants on male fertility. He also worked as a co-author of several scientific publications.

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