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Low levels of pesticides disrupt the Pituitary-gonadal hormone functions and reproductive functions in male rodent model

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Fertility of animal kingdom and human beings are often challenged in the modern industrialized world. Both men and women are at risk of challenges in fertility parameters. Green revolution and hunger alleviation and policies have led to the manufacture and usage of pesticides and chemicals with the aim of better productivity of food grains. It fulfilled the need of food grain of the world but unwanted health issues seem to disturb the eco-living and welfare. New genetic disorders as a result of gene mutations, cancers, diseases attacking different physiological systems including fertility challenges have emerged as the major outcome. Human sperm count over the past five decades has halved in number among the healthy male population and most of chemicals including pesticides were blamed. Though few such chemicals are banned, developing countries and under-developed areas of the world still practice such usage. Most of the pesticides either mimic estrogenic effect or even directly act on different areas and systems of the body. In this project, paraquat and diazinon two chemicals of organochlorine and phosphate were used in low doses in experimental Sprague Dawley rats for different durations and the pituitary – gonadal hormones – FSH, LH, Prolactin, and testosterone levels were measured. In addition spermatogram and testis histology were assessed. In all the dose and duration study a significant decline in endocrine hormone levels, sperm count with an increase in abnormal sperm. This study concludes that these pesticide act at endocrine level and disturb the spermatogenesis.

Biography

Urban John Arnold D'Souza received his Doctor of Philosophy in Manipal University, India and has a total of 25 years of teaching experience to medical students. He has published more than 100 full publications in the area of toxicology and reproductive toxicology. His major area of interest is chemical induced endocrine disturbance and fertility challenges. He has 10 years of teaching experience in the present University and he has supervised around 10 PhD and more than 25 Master students. He is an active referee in many reputed journals and was invited as a Lead Guest Editor in the Hindawi Publishing Corporation and also as Chief Editor of Malaysian Medical Sciences Journal (BJMS).

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