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Reproductive efficiency of rats whose mothers treated with lead acetate during lactation: role of vitamin E

Abstract:

Reproductive efficiency of young male and female rats yielded from mothers treated with lead acetate (10 mg/kg B.W) and vitamin E as an antioxidant (500 mg/kg) during lactation period was studied. 27 pregnant albino rats aged 4-5 months divided into 3 groups, the first group given 0.2 ml distilled water through oral intubations (control). The second group given lead acetate (10 mg/kg B.W), while the 3rd group given lead acetate (10 mg/kg B.W) with vitamin E (500 mg/kg B.Wt). Lead acetate treatment did not cause significant difference ($P>0.05$) in young male rats body, testes, epididymal (head, tail), prostate gland, seminal vesicle weights, number of epididymal sperms count, percentage of live/dead sperms and sperms abnormalities accompanied with a significant increase ($P<0.05$) in seminiferous tubules diameter. On the other hand, lead acetate treatment caused a significant decrease ($P<0.05$) in the duration of vaginal opening with no significant changes ($P>0.05$) in ovary and uterus weights. Lead acetate with vit. E cause significant decrease ($P<0.05$) in body, testes, epididymal (head, body) weights, number of epididymal sperm count, percentage of live/dead and sperm abnormalities. Concerning young female rats treated with lead acetate and vit E showed a significant decrease ($P<0.05$) in body, uterus weights with a significant increase ($P<0.05$) in the duration of vaginal opening. Histopathological study revealed changes in the testes such as desquamation in some epithelial lining of seminiferous tubules and sertoli cells. Undevelopment of localized area of some seminiferous tubules with blood vessels congestion in both testes and ovaries with hyperemia in ovarian stroma, increase in follicular cells, decrease in corpus luteum formation, degeneration of ovarian follicles and increase in ovarian adipose tissue. This study concluded that lead acetate can be transmitted through mother milk to their pups. The dose of lead acetate (10 mg/kg B.W) was enough to make bad effects on both male and female reproductive systems. Vitamin E (as an antioxidant) found to have no improving effect in treatment of lead acetate disturbances on reproductive systems of both sexes.