

Ovarian Histometric study of offspring in rats exposed to lead acetate using stereology technique

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Abstract

With the expansion of industrial processes, heavy metal pollution for example lead has become a serious problem. they have the ability to pass through organs and causes them to malfunction. One of the target organs of lead is ovarian tissue. Lead is also able to cross the blood-placental barrier and transferred to the fetus. It is also possible to pass lead through milk to the newborn. This study was performed to investigate the effect of low dose mother's lead Consumption on the development of the ovaries using stereology technique in rats as animal models. In the present study, *Wistar* rats were randomly divided into five groups. The groups included the Control group and 4 experimental groups of Pre-pregnancy, Pregnancy, Lactation and Pre-pregnancy-pregnancy-lactation. The experimental groups received 0.2% lead acetate, with 0.5cc glacial acetic acid– through drinking water. Acetate consumption was in such a way that in the pre-pregnancy group 30 days before mating, in the pregnancy group during 21 days of pregnancy, in the lactation group during 21 days of lactation, and in the pre-pregnancy-lactation group from 30 days before mating to the end of lactation they received lead acetate through drinking water. On the 65th day after the birth, all infants were killed in the laboratory and left ovarian specimens were collected for stereological studies. Examination of the results showed that the total volume of ovary, cortex, medulla, interstitial tissue and total volume of adult reproductive follicles were not significantly different between the experimental groups of pre-pregnancy, pregnancy, lactation and pre-pregnancy, pregnancy-lactation and the control group. Examination of the corpus luteum volume results showed that the pre-pregnancy group had a significant decrease compared to the pregnancy group. The present study showed that exposure of mothers to low-dose lead acetate reduces the volume of corpus luteum, especially during pre-pregnancy.

Key words: Lead acetate, Ovary, Stereology, Rat

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