

Fibrotic changes of renal tissue following long exposure of lead acetate in male rabbits

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Background and Aims: Lead has been one of the highly used metals and is still in widespread use in diverse industries. Considering the toxic effects of lead on plants, human, and animals, the lead-associated environmental pollution is currently a focus of great attention. In the present study the Cytotoxic effect of lead acetate on kidney of male Zealand white rabbits was investigated.

Methods: 20 New Zealand white rabbits were divided into two study and control groups of 10 members each. The study group intraperitoneally received 13mg/kg of lead acetate every other day for seven weeks whereas the members of the control group were only given a similar volume of normal saline in the same manner. At the end of treatment, samples were obtained from the renal tissue of rabbits followed by standard tissue preparation for light and electron microscopy. Quantitative and qualitative studies (morphology and morphometry) were performed on micrographs and the quantitative data were later analyzed, statistically.

Results: The qualitative and quantitative studies on micrographs prepared from light microscopy were indicated some histopathological changes (fibrotic and necrotic damages of renal corpuscle and tubules in renal tissues. The accurate qualitative and quantitative studies on electron micrographs was demonstrated a significant difference in glomerular basement membrane structure as well.

Conclusions: Based on histopathological changes showed that lead exposure for long time can induce some hardly damage on renal tissues.

Keywords: Lead; Histopathological; Rabbit; Renal; Fibrotic; Ultrastructure