





 **Current Issue**


 **Browse Issues**


 **Search**




 **About this Journal**

 **Instruction to Authors**

 **Online Submission**

 **Subscription**

 **Contact Us**



 **RSS Feed**

Acta Medica Iranica

2009;47(4) : 73-78

A stereological analysis of renal glomeruli following chronic Lead intoxication in rat during a continuous period of 8 weeks

"Heidari Z, Mahmoudzadeh Sagheb HR, Dezfoulian AR, Barbarestani M, Noori SMH "

Abstract:

Stereologic methods are used to obtain quantitative information about 3-dimensional structures from histologic sections. The aim of the present study was using new and unbiased stereologic techniques to investigate changes in volume and number of glomeruli after chronic lead acetate intoxication both quantitatively and in 3-dimensional spaces. Lead is one of the heavy metals that has adverse effects on renal function. These effects may involve the renal tubules as well as the glomeruli. Several qualitative histologic studies have been performed regarding the effects of lead on renal tissue and the glomeruli some of which report changes in volume and number of the glomeruli. Male adult wistar rats in four groups (each including 9 rats) were randomly selected. The case groups (treatment groups) were first given 0.5% and then 1% lead acetate in their drinking water for 8 weeks. The negative and positive control groups were given distilled water and 0.4% acetic acid solution in the same period respectively. Stereologic analysis was performed based on Cavalierie's principle to determine the reference volume ($V_{Reference}$), the fraction volume of glomeruli (VV_{Glom}), and total glomerular volume (VT_{Glom}). Furthermore the numerical density (NV_{Glom}) and total number of glomeruli (NT_{Glom}) were estimated using the physical dissector. Results showed that the number of glomeruli in case group which had received 1% lead acetate in drinking water decreased significantly ($P < 0.05$), but on changes occurred in 0.5% group ($P > 0.05$). This study confirms qualitative observational histologic studies with an unbiased and exact method, and expresses the changes in the number and volume of renal glomeruli after lead intoxication. On the other hand, glomerular total volume in both 1% and 0.5% groups increased significantly after lead intoxication. Comparing positive and negative control groups ($P < 0.01$)

Keywords:

Glomerulus , Intoxication

TUMS ID: 1073

Full Text HTML  Full Text PDF  401 kB

top ▲

[Home](#) - [About](#) - [Contact Us](#)

TUMS E. Journals 2004-2009
Central Library & Documents Center
Tehran University of Medical Sciences

Best view with Internet Explorer 6 or Later at 1024*768 Resolutions