

Nagabhasma Preparation and Its Effect on Kidneys: A Histopathological Study

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Abstract : Heavy metals, especially lead, is considered to be a multi-organ toxicant. However, such heavy metals, are used in the preparation of traditional medicines. Nagabhasma is one of the traditional medicines. Lead is the metal used in its preparation. Lead is converted into a health beneficial, organometallic compound, when subjected to various traditional methods of purification. Therefore, this study is designed to evaluate the effect of such processed lead in various stages of traditionally prepared Nagabhasma on the histological structure of kidneys. Using the human equivalent doses of Nagabhasma, various stages of its preparation were fed orally for 30 days and 60 days (short term and long term). The treated and untreated rats were then sacrificed for the collection of kidneys. The kidneys were processed for histopathological study. The results show severe changes in the histological structure of kidneys. The animals treated with lead acetate showed changes in the epithelial cells lining the bowman's capsule. The proximal and distal convoluted tubules were dilated leading to atrophy of their epithelial cells. The amount of inflammatory infiltrates was more in this group. A few groups also showed pockets of inter-tubular hemorrhage. These changes, however, were minimized as the stages progressed from stages 1 to 4 of Nagabhasma preparation. Therefore, it is necessary to stringently monitor the processing of lead acetate during the preparation of Nagabhasma.

Keywords : heavy metals, kidneys, lead acetate, Nagabhasma

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