

EVALUATION OF 180-DAY REPEATED DOSE ORAL TOXICITY STUDY OF SUVARNA BHASMA (STANDARD) IN WISTAR RATS.

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ABSTRACT

Ethnopharmacological Relevance: From bygone time onwards metals have had a very long history in an Ayurvedic system of medicine, viz. *Gold (Suvarna)*, *mercury (Parada)*, *lead (Nag)*, *vang (Tin)*, *iron (Loha)*, and *yashada (Zinc)* are used in an incinerated form (*Bhasmas*) for various maladies and these are necessitated in the sustenance of life.

Objective: To determine chronic (180 days) oral toxicity of *Suvarna Bhasma (SB)* (Standard) in rats and identify target organs involved for establishing its safety in humans.

Method: Three treatment group animals were given with 3mg/kg, 9 mg/kg, and 15mg/kg b.w. for consecutive 180 days which were 1, 3, and 5 times the proposed human therapeutic dose (HTD). The fifth group or satellite group, also received 15mg/kg for 180 days, but, two weeks of SB treatment elapsed before the time of sacrifice. The parameters measured include weekly body weight, feed intake, water intake, hematological, serum biochemical parameters, and organ weights were measured along with gross histopathological examination.

Results: Animals were evaluated using functional observation battery (FOB), and no remarkable changes were observed in gross and clinical symptoms throughout study period. Body weights, feed, water intake in all treated animals were comparable to control groups. And, increase in chloride in all treated groups and increase in BUN and potassium in group II as compared to control group males. Similar insignificant variations in females included decrease in potassium and total bilirubin in group III and group IV, decrease in AST in group III and decrease in direct bilirubin in group IV females. In histopathological examination, lung congestion involving leukocytic infiltration, and MNC infiltration in and around bronchiolar lumen, alveolar hemorrhage were observed in treated and control groups.

Conclusion: Based on these outcomes of the present chronic study, the *NOEL (No Observed Effect Level)* for SB in Wistar rats could be concluded at 15 mg/kg b.w.

Keywords: *Bhasma*, Chronic toxicity study, *No observed effect level (NOEL)*, *Suvarna Bhasma (SB)* (Standard)