

Comparison between the inflammation status of several organs after whole body exposure with waterpipe and cigarettes smoke: *In vivo* study on rats

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Abstract

Tobacco smoking form a global health phenomenon because its' harmful consequences on health and economy that caused by various tobacco products. This research evaluated the effect of whole-body cigarettes, waterpipe, and e-cigarette exposure on gene expression of NF- κ B and Nrf2 in rat's lungs. Open field, elevated plus maze, and dark and light box tests used to investigate the behavioral implications of whole-body cigarettes, waterpipe, and e-cigarette exposure, and they performed weekly after 24h of exposure. Four groups of male Sprague Dawley rats including the control group, cigarettes exposed group, waterpipe exposed group, e-cigarette exposed group. The exposure done for 2h/day, 5 days/week, for 45 days. The cotinine serum concentrations, relative lungs weights and histology of lung, liver, kidney, and heart done after rat's dissection. Tobacco products exposure induced withdrawal anxiety-like behavior, histopathological changes as well as affected mRNA relative expression of NF- κ B and Nrf2 in rat's lungs.

Keywords: Anxiety-like behavior, behavioral tests, histology, NF- κ B, Nrf2.