

Ultrastructural Changes Occur in Mice Lungs After Cessation to Exposure of Incense Smoke

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Abstract : Background: Incense woods are special kind of trees called Agarwood, which characterized by good smelling odors and many medical benefits. Incense smoke is heavily used in Saudi Arabia although comprehensive studies of its effects on health are limited. The present study demonstrated lung ultrastructure changes of mice after exposure and cessation to Incense smoke. Eighty mice are divided equally into four groups, three groups are exposed to different concentrations of Incense smoke (2, 4 and 6 gm) for three months, while the fourth group is control one. At the end of each month, lungs of five animals from each group are gathered, while the last five animals from each group are kept for another 60 days without exposure to the Incense smoke to allow for recovery. Results: Transmission electron microscope investigations of all exposed groups showed hypertrophy and hyperplasia in Clara Cells and some an enlargement of the macrophage to the point that it fills a large part of the alveolar lumen. Scanning electron microscope marks presence of mucus materials attached to the epithelial bronchioles. After prevention of exposure to the Incense smoke for 60 days, necrosis and degeneration in some cells of epithelial bronchioles, fibrosis of peribronchial, thickening in alveolar walls and aggregation of lymphoid cells were demonstrated. Conclusion: Based on the above findings and other related studies (not published), we conclude that exposure to Incense smoke causes harmful effects due to sever changes in pulmonary ultrastructure, such effects do not disappear even when Incense smoke inhalation was stopped. Therefore, we recommend that Incense smoke should use only in open places to reduce its harms.

Keywords : Incense smoke, lungs, ultrastructure of lungs, Agarwood

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