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Pulmonary damages following electronic cigarette refill liquid exposure in rats: A comparison to nicotine

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Nicotine, contained in classic cigarettes is known to have a wide variety of deleterious effects. Electronic cigarettes, as a substitute to nicotine, are becoming increasingly popular, although there is no evidence regarding their safety. Considering the dearth of information about e-cigarette toxicity, our study was designed to compare nicotine alone to e-liquid with or without nicotine on lung histopathology in Wistar rats. E-liquid associated or not associated to nicotine and nicotine alone (0.5 mg/kg of body weight) were administered intra-peritoneally during 28 days. Histological studies were conducted and hematoxylin-eosin-safran coloration test was performed. While nicotine treated rats exhibited peri-arteriolar fibrosis, lymphocytes infiltration and arteriolar obstruction, more critical alterations were observed after the e-liquid without nicotine treatment: Peri-arteriolar and peri-bronchiolar fibrosis, lymphocytes infiltration, arteriolar obstruction and giant cells. Treatment with e-liquid associated to nicotine led to the same important histo-pathological changes but with additional granulomas. So, e-liquid, *per se* is able to induce lung toxicity. Furthermore, e-liquid promotes more damages than nicotine and the combination of the two leads to damages of even more seriousness. E-liquid must be used with caution.

Biography

Narges Elgolli has completed her PhD from the University of Paris, VII Denis Diderot in France. She is currently an Assistant Professor Doctor at the Faculty of Sciences, Tunis University, in the Laboratory of Aggression Physiology and Endocrine Metabolic Studies, in Tunisia.

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