

عنوان مقاله:

Structural characterization of rat ventricular tissue exposed to the smoke of two types of waterpipe

محل انتشار:

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خلاصه مقاله:

Objective(s):this study focused on the effect of waterpipe smoke exposure toxicity on the structure of albino rat's ventricular tissue and their recovery. Materials and Methods: Albino rats were divided into three groups: control, flavored, and unflavored. The control group was exposed to normal air while the flavored and unflavored groups were exposed to waterpipe smoke for a period of ۹۰ days. Each group was followed by a period of ۹۰ days of fresh air exposure. Following each period, the ventricular tissue was removed for biochemical and histopathological studies. Results:The ventricular tissues of waterpipe exposed rats showed some degree of separation between cardiac muscle fibers, infiltration of lymphocytes, and congestion of blood vessel. Also, thin cross sections of ventricular cells revealed pleomorphic mitochondria with partially disrupted cristae, partial disruption of the myofibrils, and deposited toxic materials. The unflavored waterpipe has more deleterious effects on heart ventricular tissues than the flavored one. Waterpipe smoke didn't induce apoptosis in the ventricular tissue. We also found very high levels of plasma thiocyanate after exposure to smoke in the flavored and unflavored groups, while the control group showed no increase. After the recovery period, those tissues showed partial recovery. Conclusion: Waterpipe smoke induces structural changes in the heart ventricle tissues, causing a negative impact on the capacity of the cardiac muscle for pumping blood and may lead to heart attack due to accumulation of free radicals and tissue inflammation. Cessation .of smoking is important in returning most of these changes to their normal structure

کلمات کلیدی:

Apoptosis, Thiocyanate level, Ultrastructural changes, Ventricular cell, Ventricular tissue, Waterpipe smoke

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