عنوان مقاله:

Protective effects of zingerone against sodium arsenite-induced lung toxicity: A multi-biomarker approach

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خلاصه مقاله:

Objective(s): Sodium arsenite (SA) exposure is toxic to the body. Zingerone (ZNG) is a flavonoid with many biological properties found naturally in honey and plants. This study aimed to determine the effects of ZNG on SA-induced rat lung toxicity.Materials and Methods: Thirty-five male Sprague rats were divided into Control, SA, ZNG, SA+ZNG۲۵, and SA+ZNG۵۰ groups (n=۷). SA ۱۰ mg/kg and ZNG were administered at two doses (۲۵ and ۵۰ mg/kg) (orally, ۱۴ days). Analysis of oxidative stress, inflammation damage, apoptosis damage, and autophagic damage markers in lung tissue were determined by biochemical and histological methods. Results: The administration of ZNG reduced oxidative stress by increasing SA-induced decreased antioxidant enzyme activities, increasing Nrf-۲, HO-۱, and NQO۱, and decreasing MDA level. ZNG administration reduced inflammation marker levels. Anti-apoptotic Bcl-۲ increased and apoptotic Bax and Caspase-۳ decreased with ZNG. ZNG promoted the regression of autophagy by reducing Beclin-۱, LC۳A, and LC۳B levels.Conclusion: Evaluating all data showed that SA caused toxic damage to lung tissue by increasing inflammation, apoptosis, autophagy, and oxidant levels, whereas ZNG had a protective effect by reducing this damage.

کلمات کلیدی:

Apoptosis, Autophagy, Inflammation, Lung, Oxidative stress, Sodium arsenite, Toxicity, Zingerone