

Attenuation of cisplatin-induced hepatotoxicity in rats using zerumbone.

ABSTRACT

Zerumbone is a natural compound isolated from the fresh rhizomes of *Zingiber zerumbet*. This bioactive compound has shown a chemo-preventive, anti-inflammatory and free radical scavenging activities. This study examines, the effect of zerumbone on the extent of tissue damage in Cisplatin-induced hepatotoxicity in rats. The rats received a single dose injection of 45 mg kg⁻¹ Cisplatin. Other groups of rats received zerumbone (100 and 200 mg kg⁻¹), corn oil or the vehicle (DMSO) intraperitoneally for 4 days prior to Cisplatin injections. All animals were decapitated 16 h after Cisplatin injection. Trunk blood was collected and analyzed for alanine aminotransferase, aspartate aminotransferase, lactate dehydrogenase, alkaline phosphatase and gama-glutamyl transferase. Liver tissue was kept for the quantification of malondialdehyde and glutathione levels. Histopathological investigations were carried out and severity of lesions was scored to obtain quantitative data. This study revealed that zerumbone reduced the extent of liver damage and preserved liver functions as proved by microscopic observations and lesion scoring. Increase in liver MDA levels with a simultaneous reduction in GSH in the Cisplatin 45 mg kg⁻¹ group was attenuated by zerumbone treatment ($p < 0.05$). Zerumbone is beneficial in Cisplatin-induced liver dysfunction and organ damage in rats via prevention of lipid peroxidation and preservation of antioxidant glutathione.

Keyword: Zerumbone; Cisplatin; Liver injury; Oxidative stress; Antioxidant glutathione; Lipid peroxidation