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anti-oxidant activity of commonly used food products (clove and Honey) to mitigate the deleterious effect of oxidative stress and liver injury induced by CCl4

Liver plays an important role in metabolism and detoxification. It is prone to injury due to various etiologies. The common mechanism among them is generating reactive oxygen species (ROS) which lead to the depletion of body's stores of anti-oxidants. In this work, extracts of clove and honey were tested; in vitro for free radical scavenging by DPPH and in vivo using CCl4-induced liver injury model in male Albino rats. 50 Adult rats were selected and assigned to 5 equal groups for 10 weeks; double negative control group (DNC): rats fed on standard diet. Negative control (NC): were fed olive oil, the Positive Control (PC): fed CCl4 in olive oil only, honey group: fed CCl4 followed by honey extract, the clove group: given CCl4 followed by clove extract. At the end of 10 weeks, livers from the rats and sera were collected for histopathological examination and determination of liver and kidney functions. Rats treated only with CCl4 showed fibroblastic cells proliferation dividing the hepatic parenchyma into lobules plus inflammatory cells infiltration. Only clove extract group showed no fibroblastic cells proliferation. Clove and honey extracts could significantly reduce ALT, AST and GGT activity levels compared PC that showed a significant increase in them compared to controls. Clove showed higher percentage in DPPH inhibition compared to honey (77.2% Vs 6.5%) and also showed higher protection in vivo with almost normal liver architecture against CCl4.

Summary

Keywords: Liver; CCl4; antioxidant, fibrosis, honey, ROS, oxidative stress, clove

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