Abstract

The liver is one of the most important organs in the body since it plays important roles in several functions such as the metabolism of biomolecules, drugs and toxins. Therefore, any damage to the liver can affect the entire functioning of the body. The purpose of this study was to investigate the effects of co-administration of ginger and cinnamon on liver damage in the rats damaged by Carbon Tetrachloride (CCl_4). 42 male Wistar rats were randomly divided into 7 groups (n=6). Three of the groups were control groups (normal, damage control and normal extract control groups). 4 of them were exposure groups which were respectively administered with cinnamon 50 mg/kg, ginger 250 mg/kg, cinnamon 25 mg + ginger 125 mg and silymarin 100 mg/kg for 14 days before being damaged by CCl_4. At the end of the study, biochemical factors, serum liver enzymes and liver morphology were assayed.

Administration of CCl_4 significantly increased levels of liver enzymes, cholesterol, triglycerides, LDL, bilirubin and decreased the levels of HDL, albumin and total protein in comparison with damage control groups ($p<0.05$) Pretreatment with a combination of cinnamon and ginger extract significantly improved these values ($p<0.05$)

The results of this study are indicative of the potential hepatoprotective effect of combining cinnamon and ginger better than the each one alone, and its probable therapeutic properties for laboratory animals damaged by CCl_4.

Keywords: Liver damage, Carbon tetrachloride, *Zingiber officinale*, *Cinnamomum verum*

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