

Effect of garlic aqueous extract on liver protection against liver toxicity brought on by ciprofibrate in male albino rats

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Abstract

Background : The danger of liver growth is increased by the liver's everyday exposure to too many hazardous compounds, either from the environment or from a variety of other sources like preservatives or medications. One of the chemical families of peroxisome proliferators that stimulates hepatic cells and hepatic cell proliferation is ciprofibrate. uncontrollably divides, resulting in liver expansion. Drugs and other xenobiotics, such as the long-term hypolipidemic treatment that causes cancer in rats, can cause the liver cell to divide. However, this has not yet been proven in people. The current study's objectives are to assess the possible protective benefits of garlic administration against the biochemical and histological changes that ciprofibrate-induced liver damage in male rats.

Materials and Procedures : In the current investigation, 6 male rats were divided into 8 groups: Control group, Oil, Garlic, Ciprofibrate 50 and 100 mg/kg body weight, Cipro 50 mg/kg body weight plus garlic, Cipro 100 mg/kg body weight plus garlic. For 21 days, the rats received daily oral gavage treatments. The animals were killed on the final day of the experiment, and then blood samples and liver tissue were taken. Serum Alanine Aminotransferase (ALT), Aspartate Aminotransferase (AST), Alkaline Phosphates (ALP), and serum total and direct bilirubin concentrations were measured to assess liver function. For all groups, a histological analysis of the liver tissues was done.

Conclusion : Treatment with ciprofibrate led to significant histopathological and liver function test elevations, and garlic aqueous extract was able to shield male rats' livers from these side effects. Therefore, it should be recommended to patients who are on ciprofibrate treatment to take garlic aqueous extract.

Discussion

The liver is a key organ for detoxification and a main location for intensive metabolism in general, making it susceptible to a variety of illnesses. as a result of being exposed to the poisons . In recent decades, liver function tests have emerged as the most crucial tools for evaluating the liver's resistance to damage. The severity of the liver injury is often assessed by liver performance indices such ALT, AST, and ALP . In hepatotoxicity investigations brought on by chemicals, serum aminotransferase activities are known as toxicity markers. An increase in these enzymes' activities is referred to as the early detection of toxic hepatitis. a considerable amount of such peroxisome proliferators. It is important to note that free radicals injure healthy cells and contribute significantly to the occurrence of cancer, but garlic, which is a potent antioxidant, lessens the harm done by these agents. In this investigation, garlic extract dramatically decreased serum liver functions and had a beneficial impact on cell proliferation. Proliferation, a process that leads to an increase in the number of cells, is balanced between cell division and cell loss through cell death or differentiation. It reduced the rats treated with ciprofibrate's liver damage. Garlic regulates how cells use oxygen, and it appears that the protective effects of garlic extract entail the preservation of antioxidant capacity in preventing oxidative stress and safeguarding hepatic tissue.

Conclusion

The current study looked at the protective benefits of garlic against liver damage brought on by peroxisome proliferators (ciprofibrate). The prospective effects of ciprofibrate on liver enzymes and the histological consequences are accurately analysed in this study. Through examination of biochemical markers and histological alterations, the study produced valuable data. Peroxisome proliferators have been the subject of prior research, and the current study largely supported those findings. Garlic was also utilised in this experiment to lessen the drug's toxicological effects. In rats, liver damage brought on by hepatotoxicity was inhibited by garlic.

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