Impact of Patchouli Oil on the Hepatic Function of Male Rats After a High-Calorie Diet

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Abstract:
The liver is an important organ that performs several physiological processes, including the detoxification of harmful compounds and the metabolism of proteins, lipids, and carbohydrates. Dietary changes result in a significant rise in the intake of foods high in refined carbohydrates and saturated fats, which can impair liver function. The purpose of our study was to assess how Patchouli essential oil affected the liver function of Wistar rats fed a high-calorie diet. Twenty male rats were split into five groups for the two-month experiment: a control group, a group given Patchouli essential oil, a group treated with the solvent, a group given a hypercaloric diet, and a group given both the essential oil and the hypercaloric diet. Variations in body weight and liver weight, measurements of blood glucose and liver transaminases (ASAT and ALAT), and a histological analysis of the liver using Hematoxylin-Eosin and Sudan Black stains are all part of the study's methodology. The findings demonstrate that the hypercaloric diet causes an increase in body weight and liver weight, as well as an increase in transaminases and blood glucose, indicating a change in liver function. Histological examination also showed a disarray of the hepatic structure and a buildup of lipids in hepatocytes. Conversely, the rats administered Patchouli essential oil shown improvements in the parameters under investigation, including a decrease in lipid buildup and liver lesions.

Keywords:
Liver, Patchouli, rats, high-calorie diet.