

ABSTRACT

Liver diseases are emerging as a significant global health concern and NAFLD is a prevalent chronic liver disease. It is characterized by excessive fat accumulation in liver cells in individuals who abstain from alcohol. Its estimated global prevalence is 25%, and it has been significantly increased over the last 20 years, leading to more morbidity and mortality worldwide. Despite its growing burden, there is currently no approved medication to treat this chronic disease. Numerous studies have shown that herbal medicines can mitigate the adverse effects of liver diseases and can effectively treat the NAFLD due to their therapeutic potential benefits, including antioxidant, anti-inflammatory, and phytochemical properties. The current study aims to evaluate the protective efficacy of *Calotropis procera* against NAFLD in albino mice model of high fat diet (HFD). In our study, mice were fed on high fat diet supplemented with cholic acid and cholesterol in the presence and absence of *C. procera* extract for 12 weeks. At the end of experiment, biochemical markers were evaluated, including lipid profile, LFTs, RFTs, and oxidative stress, along with changes in liver histology and liver weight to assess the changes in comparison to the mice fed on normal feed. NAFLD induced due to HFD significantly affected the liver evidence by change liver histology, liver functions, lipid readouts, renal function and oxidative stress test. However, the administration of *C. procera* extract exhibited its protective effect by regulating these parameters.

Keywords: NAFLD, HFD, *Calotropis procera*, LFTs, RFTs, lipid profile, catalase, TAC.