

ABSTRACT

Liver is a vital organ that play crucial role in fat synthesis and storage. Nonalcoholic fatty liver disease (NAFLD) is the condition in which fat accrues in the liver. Increase of NAFLD worldwide is alarming with 34% prevalence globally. There is no recommended treatment of NAFLD yet. Herbal remedies are gaining more attention with widespread use, and they have also been used for a long time to cure liver diseases. Berberine, is an isoquinoline alkaloid and it possess anti-hepatotoxic, anti-inflammation, anti-bacterial, anti-diabetic, cardiotonic effects. The purpose of this study was to check the ameliorative effect of berberine against fructose induced non-Alcoholic fatty liver disease in mice. In this study 18 mice were randomly divided into three groups. Control group received standard diet for twelve weeks. NAFLD and treatment groups received standard diet along with 20% fructose (in drinking water) for eight weeks. After that NAFLD group received standard diet and water for another four weeks. While the treatment group was given berberine (200mg/kg) for four weeks via oral gavage. After 12 weeks all mice were fasten overnight for glucose tolerance test. Then they were dissected, and blood was collected from cardiac puncture. The liver sections were taken for histological studies. Results indicated that in NAFLD group, there was rise in insulin resistance, liver biomarkers (AST, ALT and ALP), body weight and liver weight. Fat accumulation was also observed in the histological slides. The result also showed that the berberine possess hepatoprotective action against NAFLD. After treatment there was a decrease in NAFLD parameters and histology was also restored. In conclusion, our data indicated that berberine has protective effect against non-alcoholic fatty liver diseases.