

Research article

Ameliorative effects of inulin on non alcoholic fatty liver disease associated with type 2 diabetes mellitus in obese women

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Abstract

Objectives: This study investigated the effects of inulin at the level of 3 grams twice daily for 4 weeks in alleviating the complications associated with NAFLD. Also, we want to evaluate the role of serum irisin in NAFLD. **Subjects and methods:** Six grams of inulin fructans were given daily for each of the fifty obese type 2 diabetic female patients with NAFLD for a period of four weeks. Parameters estimated pre and post administration of inulin: fasting serum glucose, fasting serum insulin, fasting serum liver aminotransferases (AST, ALT) & Gamma glutamyltransferase (γ -GT) and serum irisin. HOMA Insulin Resistance (IR), AST/ALT ratio and Fatty Liver Index (FLI) were calculated. **Results:** Administration of inulin induced a significant reduction infasting serum glucose, insulin, insulin resistance, lipid profile (Cholesterol & triglycerides), aminotransferase enzymes (AST & ALT) and Fatty Liver Index (FLI). Otherwise, serum HDL-cholesterol and serum irisin levels showed a significant increase after inulin intake. Serum irisin negatively correlated with diabetes mellitus parameters, Total cholesterol, triglycerides and liver enzymes aminotransferases (AST & ALT), but correlated directly with HDL-C. **Conclusions:** Inulin fructans, improve liver function so may reduce the risk NAFLD associated with insulin resistance. Inulin seems to be a valuable add on therapy for hepatic steatosis amelioration. Irisin is considered as a new biochemical marker for diagnosis of NAFLD and might have an essential role in preventing the hepatic steatosis and attenuating its progression to steatohepatitis.