

The Modulatory Effect of Some Antioxidants on Animal Model of Metabolic Syndrome Induced by High Fructose Fed Diet

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Abstract : The metabolic syndrome (Mts) is a constellation of risk factors. The main objective of this study is to compare the ameliorating effect of metformin, lipitor, orlistate, lipoic acid and carnitin on insulin, lipid profile, leptin, adenonectin levels in metabolic syndrom (high fructose fed rats HF). Seventy male albino rats were divided into seven groups. G1: normal control. G2: G7 rats fed HF for 8wks. After four wk HF feeding, G3, G4, G5, G6, and G7 were orally administered (200 mg/kg daily) metformin, lipitor, orlistate, lipoic acid and carnitin respectively. All drugs were administered once daily. After 8 weeks of feeding, a significant increase in blood glucose level was observed in HF fed rats compared to normal rats, but this increase was significantly decreased after administration of metformin and lipitor. The raised of serum insulin level in HF fed rats was significantly decreased after administration of lipoic, carnitin, metformin. Significant higher concentrations of triglycerides (TG), total cholesterol & low density lipoprotein cholesterol (LDL- C) were observed in HF fed rats and these increases were significantly lowered after the administration of all the previous drugs. There was a significant decrease in serum high density lipoprotein cholesterol (HDL-C) in HF group administration of all drugs alleviates this reduction. The increased of serum leptin level in HF group was decreased significantly in met and orlistate groups. Whereas the reduction of serum adiponectin level in HF fed rats was increased in Lipitor, carnitin, orlistate groups. These data suggested that beneficial effect of metformin, lipitor, orlistate, lipoic acid carnitin in reducing risk for people with decreased insulin sensitivity, increased oxidative stress and hyperlipidemia such as those with the metabolic syndrome or type 2 diabetes.

Keywords : metabolic syndrome, diabetes, proinflammation, antioxidants

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