# Influence of Musa sapientum L. on pharmacokinetic of metformin in diabetic gastroparesis.

Abstract

To investigate the effect of Musa sapientum L. (MS) bark juice in diabetic gastroparesis and its effect on pharmacokinetic of metformin (MET).Diabetes was induced in rats by administering alloxan (120 mg/kg) saline solution and maintained for 8 week. All the 18 Sprague-Dawley rats were divided into three groups (n =6 in each group): normal control, diabetic control and MS bark juice. Assessment of diabetes was done by glucose oxidase-peroxidase method on the 3rd day of alloxan administration. The effects of MS bark juice (100 mL/kg) on gastric emptying time, intestinal transit time, contractility of fundus and pylorus as well as gastric acid secretion in chronic diabetic rats were observed after 8 weeks of alloxan administration. The effect of MS bark juice on the pharmacokinetic of orally administered single dose of MET (350 mg/kg) was evaluated on the 57th day of protocol. Any drugs that may reduce the blood glucose level or influence the fibrinolytic system were not used in this study.The MS bark juice significantly reduced the blood glucose level in the diabetic rats ($P<0.01$). There was significant decrease in the pylorus motility and increase in the gastric emptying time, intestinal transit time, contractility of fundus, gastric acid secretion in the MS bark juice treated group ($P<0.01$). There was significant decrease in the time at which drug at a maximum concentration, half life of drug and increase in the maximum concentration of drug in the plasma of MET in MS bark juice treated group as compared to diabetic control group ($P<0.01$).MS bark juice effectively manages diabetic gastroparesis and thereby improves the bioavailabilty of MET when administered with MS bark juice.