

### **Comparison of hypoglycaemic effect of *Ipomoea aquatica* with tolbutamide in healthy, male Wistar rats**

The commonest metabolic derangement affecting affluent societies of the world today is diabetes mellitus. The present study was undertaken to compare the oral hypoglycaemic activity of *Ipomoea aquatica* Forsk. With the known oral hypoglycaemic agent, tolbutamide.

Male Wistar rats (n=24), aged 2 months and weighing  $305 \pm 13$  g were housed under standard conditions and fed on a standard diet for 2 weeks. They were randomly divided into three groups; the Test, the Drug and the Control with 8 rats in each and fasted for 18h. Venous blood (0.5mL) was drawn from each rat for fasting blood glucose estimation. The Text, Drug and the Control groups were treated orally with 1mL of the *I aquatica* extract (3.33g/ Kg body weight, optimum dose determined in a separate experiment), 1 mL tolbutamide (15 mg/ kg body weight, suspended in distilled water) and 1mL distilled water respectively. After half an hour, they were administered a glucose load of 3g/ kg body weight (dissolved in distilled water). Venous blood was drawn after 1 h and serum glucose concentrations were determined immediately employing the glucose oxidase method.

The fasting blood glucose levels (mean SD) of the Test, Drug and Control groups were  $52.0 \pm 5.8$ ,  $50.1 \pm 7.9$  and  $54.0 \pm 12.2$  mg / dl respectively. At 1 h after the administration of glucose the mean blood glucose concentrations of the *I. aquatica* treated group ( $68.2 \pm 14.40$  mg/ dl) and the tolbutamide treated group ( $86.0 \pm 15.18$ mg/ dl) were significantly lower ( $p < 0.00010$ ) than that of the Control group treated with distilled water ( $130.0 \pm 16.1$ mg/dl). The decrease in the blood glucose level in the Teat group compared to that of the Control after 1 hr was 47.5 % whereas the decrease in the Drug group was 33.8% There was a 20.6% reduction in the Test when compared with toibutamide. The effect exerted by the *I. aquatica* extract was not significantly different from that of tolbutamide ( $p < 0.065$ ). The data from our experiments indicate that an

aqueous extract of *I. aquatica* is as effective as tolbutamide, in reducing the blood glucose concentration after a glucose challenge in healthy, male *Wister* rats.