

HYPOGLYCEMIC EFFECTS OF TELAKUCHA (*Coccinia indica*) LEAVES IN NORMAL AND ALLOXAN DIABETIC RAT

Dr. Mohammad Saiful Islam*

Executive Summary

Inadequate production of insulin by the pancreas or the inability of the body to respond to the insulin can develop a metabolic disorder that is Diabetes Mellitus (DM). Globally, 463 million people have diabetes and this number is projected to reach 578 million by 2030, and 700 million by 2045 (IDF, 2019). In Bangladesh, the number of detected diabetic patients reached 8.4 million along with the undetected diabetic patients almost 4.7 million (IDF, 2019). Treatment of diabetes with modern synthetic drugs has series of adverse effects. According to the World Health Organization, a great number of medicinal plants used in the control of the DM have been reported. *Coccinia indica*, known in Bangladesh as 'Telakucha', has been shown to possess various phytoconstituents like cephalandrol, tritriacontane, lupeol, b-sitosterol, cephalandrine A, cephalandrine B, stigma-7-en-3-one, taraxerone and taraxerol. The study was undertaken to investigate the effects of Telakucha (*Coccinia indica*) on blood glucose, serum total cholesterol, hematological parameters and body weight in alloxan induced diabetic rats. This research work was conducted in the Laboratory of Anatomy, Histology and Physiology, Sher-e-Bangla Agricultural University; Dhaka. In this experiment 45 rats were selected for the trial purpose. The rats were divided into 3 equal groups, each containing 15 individuals (n=15) as follows: normal control (C) group, diabetic control (DC) group and diabetic treatment (DT) group. Diabetes was induced in diabetic control (DC) & diabetic treatment (DT) group with alloxan @ 200mg/kg body weight intraperitoneally. Then diabetic treatment group (DT) was treated with 10% aqueous extract of Telakucha @500 mg/kg body weight. After 42 days of treatment, Telakucha extract reduced the amount of blood glucose significantly ($P<0.001$) in the group DT compared to DC from 32.03 ± 0.25 to 11.17 ± 0.08 mmol/L. Total cholesterol (TC) was also decreased significantly ($P<0.001$) in group DT compared to group DC from 121.85 ± 0.27 to 112.42 ± 0.14 mg/dL. In hematological study, DT group showed significant ($P<0.001$) increase in erythrocytes count & Hb (g%) content and decrease ($P<0.001$) in total leukocyte count after 42 days of treatment in contrast with DC group. The body weight was also increased significantly ($P<0.001$) in DT group. Based on present research it can be concluded that Telakucha (*Coccinia indica*) can be used in the treatment of diabetes as an alternative to commercial medicine.

* Assoc. Professor, Dept. of Anatomy Histology and physiology, Sher-e-Bangla Agricultural University, Dhaka-1207