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COMPARATIVE EFFECTIVENESS OF *ABELMOSCHUS ESCULENTUS* L. (OKRA) AND ACARBOSE IN LOWERING BLOOD GLUCOSE: AN EXPERIMENTAL STUDY USING STREPTOZOTOCIN-INDUCED DIABETIC RATS

Anniline Teng, F M C De Guzman, E D V Marcelo,
S A Mohamed, S A C Ong Siu, A L P Orille,
R P D Punzalan, P S V Sawen and D P Wy

Manila Central University, Philippines

Diabetes is presently a serious worldwide epidemic, affecting about 382 million people globally in 2013 and directly causing the deaths of more than 1.5 million people in 2012. This study evaluates the glucose-lowering potential of *Abelmoschus esculentus* L. (okra) in diabetic rat models as compared to the commercial drug acarbose. In this randomized, double-blind experimental study, 48 streptozotocin-induced diabetic male Sprague Dawley rats aged 75-90 days old and weighing 150-250 grams were divided into three groups: experimental group which was given 300 mg/kg aqueous extract of *Abelmoschus esculentus* L. (okra), positive control group which was given 15 mg/kg acarbose and negative control group which was given 5 mL/kg distilled water. All groups were concurrently treated once daily orally for seven days. Blood glucose levels were measured one hour after treatment administration using EasyTouch® glucometer. The safety of okra extract and acarbose were also determined based on subject mortality. After seven days, the experimental group and the positive control group demonstrated glucose-lowering effects. However, the decrease in blood glucose from the baseline up to day seven was statistically significant only in the experimental group (p-value <0.05). Comparison of the glucose values among all the groups on day seven demonstrated a significant difference in the experimental group (p value=0.02). This showed that okra extract exhibited a time-dependent effect. Also, statistical analysis of mortality which yielded a nonsignificant result established the safety of acarbose and okra extract as used in the study. These findings prove the potential beneficial effect of *Abelmoschus esculentus* L. (okra) in the treatment of diabetes through its glucose-lowering effect which has been exhibited to be comparable to that of the commercially prepared drug acarbose. Thus, it may be developed and used to treat type 2 diabetes in humans.

anniline_teng@yahoo.com