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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

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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: (1) Experimental group which was given 300 mg/kg aqueous extract of *Abelmoschus esculentus L.* (okra), (2) Positive control group which was given 15 mg/kg acarbose and (3) Negative control group which was given 5 mL/kg distilled water. All groups were concurrently treated once daily orally for 7 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 7 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 7 was statistically significant only in the experimental group (p-value<0.05). Comparison of the glucose values among all the groups on day 7 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 non-significant 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.

Biography

Anniline C Teng is currently a Medical student, doing Internship in Manila Central University Hospital in EDSA, Caloocan City, Philippines.

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