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Banaba (*Lagerstroemia speciosa* (Linn) Pers.) has been used as tea or alternative medicine for health promotion or for prevention of diabetes mellitus in south eastern Asia. To establish effectiveness and safety of the extract of Banaba leaves (BE), in this study we performed two clinical studies.

- 1) Single administration study ; Several doses of BE were taken with starchy food (566 kcal) by 18 healthy volunteers, and the postprandial blood glucose level were measured. Single blind-crossover test was performed. We divided volunteers into two groups, group A (higher responders ; FBG (fasting blood glucose) ≥ 90 mg/dl, n=10) and group B (lower ones, n=8). In group A, BE administration significantly reduced postprandial blood glucose level, and the area under blood glucose curve (AUC) was significantly lowered in a dose response manner, which were not observed in group B. Administration of BE on volunteer without sugar loading did not cause any hypoglycemia.
- 2) Long-term administration study ; We reported that BE administration for 8 weeks against volunteers showing low glucose tolerance or showing around borderline hyperglycemia with no oral hypoglycemic agents had shown significant improvement in glucose tolerance¹¹. In this study, BE was administered for as long as one year against volunteers who had took part in the previous study with agreements of taking BE tablets for further period. After half-year administration of BE (100 mg daily) tablets, FBG level was significantly decreased (128.3 ± 6.0 mg/dl \rightarrow 114.2 ± 2.9 mg/dl, n=15). This effect was more distinct toward the group with higher FBG level (≥ 110 mg/dl, n=11). After one-year administration of BE, hematological and biochemical characters were monitored and also OGTT (oral glucose tolerance test) was performed against 11 volunteers who could continue BE administration with no significant changes of lifestyle. After one year, glycated albumin and glucose tolerance were significantly improved, but FBG and HbA_{1c} showed tendency but not significance in reduction. On the other hand, significant improvements were observed against volunteers with higher FBG group (≥ 110 mg/dl, n=7). While this study was an open study with no placebo group, these results suggested that improvement of glucose tolerance observed after 8-weeks administration of BE could lead to the further improvement after half or one year administration. There were no changes in hematological and biochemical characters after one year administration of BE. And also, no adverse effect was observed during administration period. These results demonstrate the safety in long-term administration of BE up to one year.

Key Words : Banaba, Lagerstroemia, diabetes, glucose tolerance, corosolic acid

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