OP 09-01: *In-vitro* antidiabetic activities of *Nyctanthes arbor-tristis* L flower extract and its fractions

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Boiled flowers of *Nyctanthes arbor-tristis* L (Oleacea) is used in Sri Lankan traditional medicine to combat diabetes. The present study attempted to elucidate the in vitro hypoglycemic activity of aqueous flower extract (AFE) and fractions (hexane, dichloromethane, ethyl acetate and methanol) of *N. arbor-tristis* using in vitro assays. Doses (1.5ml/mg, 3mg/ml, 5mg/ml) were selected based on the study conducted by Rangika et al. 2015. Phytochemical screening was determined using standard protocols. AFE and each fraction (n=6) was subjected to in vitro α-amylase inhibition assay and glucose uptake by yeast cells at 25mM of glucose concentration. Flavonoids, terpenoid and cardiac glycosides were observed in both AFE and fractions. A significant ($p < 0.05$) inhibition of α-amylase enzyme was revealed with increasing doses in the AFE while the hexane fraction exhibited the highest inhibition. At 1.5mg/ml, ethyl acetate fraction promoted a dose dependent (99%) and methanol and dichloromethane fractions showed a dose independent glucose uptake (79.09%, 84.0% respectively). Both AFE and hexane fraction exhibited a significant ($p < 0.05$) glucose uptake at 1.5 (84%) and 3mg/ml (92%) doses. The present findings confirm that *N. arbor-tristis* exerts its antidiabetic activity via inhibition of α-amylase enzyme and increasing glucose transportation across the cells. The non-polar hexane fraction exhibited higher hypoglycemic activities compared to other fractions. Hence, isolation of responsible compounds is required from hexane fraction.

Keywords: *Nyctanthes arbor-tristis*, aqueous extraction, fractionation, alpha amylase, glucose uptake