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***In vitro* antioxidant activity of methanolic extract of selected polyherbal drug used in Diabetes Mellitus in Northern Province, Sri Lanka.**

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Background: The antioxidants are mainly involved in preventing the oxidative stress and these are used in diabetes mellitus patients in preventing the further damage to the beta cells caused by the radicals formed due to elevated blood glucose in the blood and worsening of the condition. *Neerizhivu chooranam 2* is a polyherbal drug used in treating diabetes mellitus (*Neerizhivu*) in Northern Province, Sri Lanka. It consists of *Terminalia chebula*, *Embllica officianalis*, *Murraya koenigii*, *Cyprus rotundus*, *Tinospora cordifolia*, *Syzygium cumini* and *Phyllunthus amarus*.

Objective: To evaluate the antioxidant activity of *Neerizhivu chooranam 2* using 2,2-Diphenyl-1-picrylhydrazyl radical scavenging activity and phosphomolybdenum assay.

Methods: The plant parts were collected individually and dried. They were powdered and sieved within 45 sieve plates and they were mixed in the ratio of 2:2:2:1:1:1:1 of *Terminalia chebula*: *Embllica officianalis*: *Murraya koenigii*: *Cyprus rotundus*: *Tinospora cordifolia*: *Syzygium cumini*: *Phyllunthus amarus* to make the *Neerizhivu chooranam 2*. The chooranam was extracted with methanol using maceration process. In vitro antioxidant activity of methanolic extract was evaluated using DPPH (2,2-Diphenyl-1-picrylhydrazyl) radical scavenging activity and phosphomolybdenum assay by having L-Ascorbic acid as a standard. The IC₅₀ values of the DPPH assay and the ascorbic acid equivalents from phosphomolybdenum assay were determined. Data of DPPH assay was analysed with one-way ANOVA at 5% significance level.

Results: The IC₅₀ of methanolic extracts of *Neerizhivu chooranam 2* was found to be 2.1633 µg/mL whereas ascorbic acid IC₅₀ was found to be 1.1588 µg/mL. The ascorbic acid equivalents in phosphomolybdenum assay for *Neerizhivu chooranam 2* was found to be 72.36 Ascorbic acid Equivalent. The Antioxidant activity shown by standard and methanolic extract of *Neerizhivu chooranam 2* differed significantly (P<0.05).

Conclusions: Methanolic extract of *Neerizhivu chooranam 2* was found to exhibit antioxidant activity. Further studies needed to understand the in vivo potential of the polyherbal.