

Formulation and Evaluation of *In-Vitro* Thrombolytic Effect of Herbal Tea Bag

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Adhatoda vasica Linn, *Vitex negundo* Linn, and *Caesalpinia bonduc* Linn belong to the families of Acanthaceae, Verbenaceae, and Caesalpinaceae respectively. This study was aimed to formulate a herbal tea bag from a mixture of the above medicinal plants and evaluate its thrombolytic activity *in vitro* using the clot lysis method. Different concentrations (125 - 500 mg/mL) of aqueous extracts (AE) of leaves of each selected plant were added (100 µL) into microcentrifuge tubes containing pre-weighed blood clots. Then the tubes were incubated at 37° C for 90 minutes and the supernatants containing dissolved blood clots were removed. Tubes were weighed again, and the percentage of clot lysis was calculated. Streptokinase and distilled water were used as the positive and negative control respectively. The thrombolytic activity of different combinations of selected plants was tested and the most effective combination was formulated as a tea bag. The phytochemical profile of each plant extract was determined. Each extract was tested positive for alkaloids, tannin, saponins, flavonoids, diterpenoids, cardiac glycosides, phenolic compounds, proteins, amino acids, and carbohydrates. The thrombolytic activity of *C. bonduc*, *V. negundo*, and *A. vasica* were 33.3%, 28.1%, and 22.0% respectively ($p < 0.05$). The clot dissolving activity of streptokinase, the most effective plant combination (1:4:4) and the tea bag were 88.5%, 31.0% and 13.3% ($p < 0.05$) respectively. This study exhibits the presence of moderate thrombolytic activity in the AE of *A. vasica*, *V. negundo*, and *C. bonduc* leaves individually and in combination. Stability testing and clinical studies are warranted in the future.

Keywords: clot lysis, herbal tea bag, thrombolytic activity