

OP 28

### ***In vitro* thrombolytic activity of *Aponogeton crispus* Thunb. and *Aponogeton rigidifolius* H. Bruggen (Kekatiya)**

Sarveswaran R<sup>1</sup>, Jayasuriya WJABN<sup>1\*</sup>, Kariyawasam IU<sup>2</sup>, Hettiarachchi PL<sup>3</sup>, Suresh TS<sup>4</sup>

<sup>1</sup>Department of Pharmacy and Pharmaceutical Sciences, Faculty of Allied Health Sciences, University of Sri Jayewardenepura, Sri Lanka, <sup>2</sup>Department of Botany, Faculty of Applied Sciences, University of Sri Jayewardenepura, Sri Lanka, <sup>3</sup>Department of Biological Sciences, Faculty of Applied Sciences, Rajarata University of Sri Lanka, <sup>4</sup>Department of Biochemistry, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka.

**Background:** Plants in the genus *Aponogeton* have been used in traditional medicine. Both *A. crispus* and *A. rigidifolius* are aquatic plants belonging to family Aponogetonaceae. The anti-inflammatory, anti-nociceptive and anti-pyretic activities of *A. crispus* and *A. rigidifolius* and hypoglycaemic activity of *A. crispus* have been reported in our previous studies.

**Objective:** This study aimed to evaluate the thrombolytic activity of *A. crispus* and *A. rigidifolius*.

**Method:** Clot lysis method was used to determine the *in vitro* thrombolytic activity. Human venous blood (6 ml) was transferred to pre-weighed sterile micro centrifuge tubes and incubated at 37 °C for 45 minutes. Serum was completely removed from the tubes without disturbing the clot formed. Each tube was weighed to determine the clot weight. Different concentrations of hot aqueous extract of *A. crispus* and *A. rigidifolius* (45, 90, 135 and 180 mg/ml) at a volume of 100 µl were added into each tube containing pre-weighed clots respectively. Streptokinase (30,00,000 I.U.) was used as the positive control whereas the negative control was distilled water. All tubes were incubated again at 37 °C for 90 minutes and the fluid released was removed after incubation. Tubes were again weighed to observe the difference in weight after clot lysis. Percentage of clot lysis was calculated.

**Results:** Streptokinase exhibited the highest thrombolytic activity (32.1%±2.4) whereas the percentage clot lysis of 3.4%±1.0, shown by negative control group was negligible. The highest thrombolytic activity (27.9%±3.3) among the tested doses was observed with the concentration of 135 mg/ml of *A. crispus*. The highest activity exhibited by *A. rigidifolius* was 20.4%±3.5 at a dose of 135 mg/ml. The activity was comparable with that of the standard drug streptokinase ( $p > 0.05$ ).

**Conclusion:** This study demonstrates the presence of moderate thrombolytic (clot lysing) activity in aqueous extracts of *A. crispus* and *A. rigidifolius*.

**Acknowledgement:** University of Sri Jayewardenepura is gratefully acknowledged for grant (ASP/01/RE/MED/2016/72) provided.