Effective Dose Evaluation of Water Extract of *Sonchus arvensis* (Linn.) (Tempuyung) Leaves as Antihypertensive in Male Wistar Rats Using A Tail-Cuff Method

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Background

Sonchus arvensis (Linn.) or Tempuyung is one of medicinal plant that are widely found in various places. It has been scientifically proven that the leaves of tempuyung have anti-urolithiasis effects and have been used as traditional medicine in Indonesia. Empirically, it is use to lowering blood pressure and used as water infusion. It is supported that the antioxidant activity and angiotensin-converting enzyme inhibitor from water extract of tempuyung leaves (WET) are very high. The aim of this study was to prove the activity of tempuyung leaves in lowering blood pressure and determine the effective dose of the activity.

Methods

Tempuyung leaves were extracted by infused method. The extract was dried by the freeze dryer method. The antihypertensive effect was evaluated by a noninvasive method using the tail-cuff instrument (nama alat). The effect was determined by the capability of the extract at dose 50, 100, 200 mg/kg bw to inhibit the increase of systole, diastole and mean blood pressure induced by epinephrine 0.5 mg/kg bw in preventive action. The method used mechanism approach as beta-blockers and propranolol as standart medicine.

Results

The preventive method was used because epinephrine is adrenaline. It could increase blood pressure very fast but have short duration of activity. WET at dose 50-200 have the different activity to decrease blood pressure. There is no linearity between increased doses and increased activity to inhibit systolic, diastolic and mean blood pressure elevations. The dose 50 mg/kg bb has a similar effect with propranolol, but higher doses have lower activity than dose 50 mg/kg bb.

Conclusions

WET has activity to lower blood pressure, but the dose greatly affects the activity of tempuyung and the effective dose of WET as antihypertensive was 50 mg/kg bw.

Keywords: Tempuyung, antihypertensive, beta-blockers