

INTISARI

Latar belakang: Stres dapat menurunkan memori. Pegagan (*Centella asiatica* sp.) dapat mencegah penurunan memori akibat stres kronis karena memiliki efek neurotropik dan neuroprotektif. Penelitian mengenai dosis pemberian pegagan yang efektif masih terus berlanjut.

Tujuan: Mengungkapkan pengaruh variasi dosis ekstrak pegagan terhadap memori pascastres listrik kronis.

Metode: Penelitian ini menggunakan desain *true experimental with pretest-posttest control*. Subjek 15 ekor tikus *Sprague Dawley* jantan usia 1 bulan dibagi kedalam 3 kelompok, masing-masing terdiri dari 5 ekor tikus. Setiap kelompok diberi perlakuan pemberian stres listrik kronis selama 4 minggu dan aquades (KN), ekstrak *Centella asiatica* 300mg/kgBB/hari (KP1) atau ekstrak *Centella asiatica* 600mg/kgBB/hari (KP2). Pengukuran memori tikus dilakukan sebelum dan setelah perlakuan. Untuk mengukur memori tikus digunakan pengukuran persentase waktu di kuadran target dengan uji probe Morris *Water Maze*. Waktu di kuadran target diukur dengan *stopwatch digital* dengan ketelitian 0,1 detik. Normalitas data diuji dengan *Shapiro-Wilk*, homogenitas data diuji dengan *Levene test*, uji *one-way ANOVA* untuk membandingkan perbedaan antar kelompok, dilanjutkan dengan analisis *post hoc*. Untuk membandingkan memori sebelum dan sesudah perlakuan dilakukan *paired t-test*.

Hasil: Rerata persentase waktu di kuadran target sebelum perlakuan adalah 53,49±4,40% (KN); 53,57±4,60% (KP1) dan 56,96±4,80% (KP2). Rerata persentase waktu di kuadran target sesudah perlakuan adalah 54,39±3,77% (KN); 61,40±3,83% (KP1) dan 73,60±3,13% (KP2). Terdapat perbedaan bermakna setelah perlakuan antara KN-KP2 ($p=0,003$) dan KP1-KP2 ($p=0,033$). Sebelum dan sesudah perlakuan terdapat perbedaan memori yang signifikan ($p=0,035$) pada KP2.

Kesimpulan: Pemberian ekstrak etanol pegagan mampu meningkatkan persentase waktu di kuadran target pada uji probe Morris *Water Maze* pascastres listrik kronis. Variasi dosis ekstrak etanol pegagan berpengaruh terhadap persentase waktu di kuadran target, dimana ekstrak etanol pegagan 600mg/kgBB/hari mampu meningkatkan persentase waktu di kuadran target lebih tinggi dibanding dosis 300mg/kgBB/hari.

Kata kunci: *Centella asiatica* - stres listrik kronis - memori- Morris *water maze*

ABSTRACT

Background: Stress is known to cause deterioration of memory function. *Centella asiatica* sp. (pegagan) inhibit deterioration of memory function which caused by chronic electrical stress with its neurotropic and neuroprotective properties. Studies about effective dose of *Centtela asiatica* still continued.

Objective: To evaluate the effect of *Centella asiatica* ethanol extract dose variation towards memory after chronic electrical stress.

Method: This study uses that true experimental with pretest-posttest control design. Subjects are 15 male *Sprague Dawley* rats. The rats were divided into three groups. Every groups are treated with chronic electrical stress for 4 weeks and aquades (KN), 300mg/kgBW/day of *Centella asiatica* (KP1) or 600mg/kgBW/day of *Centella asiatica* (KP2). The rat's memory was measured before and after treatment. The time percentege in target quadrant which measured from probe test Morris *Water Maze* was used to measure rat's memory. Time percentage in target quadrant measured with digital stopwatch. Shapiro-Wilk is used to observe the normality of distribution, Levene test is used to observe homogenous of data, and one-way ANOVA test to compare the measure between different groups, followed by post hoc analysis. Paired t-test used to compare pretest and posttest effects.

Result: The average of time percentage in target quadrant before treatment are 53,49±4,40% (KN); 53,57±4,60% (KP1) dan 56,96±4,80% (KP2). The average of time percentage in target quadrant after treatment are 54,39±3,77% (KN); 61,40±3,83% (KP1) dan 73,60±3,13% (KP2). There were significant differences after treatment among KN-KP2 (p=0,003) and KP1-KP2 (p=0,033). There was significant difference between before and after treatment in KP2 (p=0,035).

Conclusion: Ethanol extract of *Centella asiatica* leaf is able to increase time percentage in target quadrant from probe test Morris *Water Maze* after chronic electrical stress. Variation of *Centella asiatica* doses is able to influence time percentage in target quadrant, doses 600mg/kgBW/day could stimulate increasing time percentage in target quadrant higher than doses 300mg/kgBW/day.

Keywords: *Centella asiatica* - chronic electrical stress - memory - Morris *water maze*.