Uji efek neuroprotektif ekstrak akar acalypha indica linn terhadap kerusakan inti sel saraf hipokampus tikus pascahipoksia secara in vivo = In vivo neuroprotective effect of acalypha indica linn root extract to hypoxia induced damage on nucleus of hippocampal neuron in rats

Elisa Noor, author

Abstrak

Stroke merupakan manifestasi klinis berupa defisit neurologis yang bertahan selama minimal 24 jam, menunjukkan keterlibatan fokal sistem saraf pusat, yang disebabkan oleh gangguan aliran darah otak. Prevalensi stroke di Indonesia mencapai 0,8% dan menjadi salah satu penyebab kematian terbanyak. Stroke juga dapat menimbulkan kecacatan permanen, namun pengobatan untuk kesembuhan sempurna belum ditemukan. Oleh karena itu, perlu dicari strategi untuk mencegah dampak yang ditimbulkan oleh stroke. Tujuan penelitian ini adalah untuk mengidentifikasi efek neuroprotektif ekstrak akar Acalypha indica Linn dalam mencegah kerusakan inti sel saraf hipokampus tikus pascahipoksia.

Penelitian ini merupakan studi eksperimental menggunakan ekstrak akar A. indica Linn, diberikan kepada tikus Sprague Dawley yang dibagi menjadi tiga kelompok perlakuan, yaitu kontrol negatif yang mendapat akuades, kelompok ekstrak akar A. indica Linn dosis 400 mg/kgBB dan kelompok ekstrak dosis 500 mg/kgBB. Setelah diberi perlakuan selama 7 hari, tikus diberi perlakuan hipoksia dengan oklusi arteri karotis komunis bilateral selama satu jam. Jaringan hipokampus tikus kemudian diambil dan diamati perubahan inti selnya.

Hasil analisis dengan uji statistik One Way Anova dilanjutkan dengan uji Post Hoc menunjukkan ekstrak akar A. indica Linn dosis 400 mg/kgBB (p=0,029) dan 500 mg/kgBB (p=0,035) memiliki efek neuroprotektif terhadap inti sel saraf area CA3 hipokampus dibandingkan dengan kontrol negatif. Namun, efek neuroprotektif dosis 500 mg/kgBB tidak berbeda bermakna dibandingkan dengan dosis 400 mg/kgBB. <hr><i>Stroke is a syndrome characterized by acute onset of neurologic deficit that persists for at least 24 hours, reflects focal involvement of the central nervous system, and is the result of disturbance of the cerebral circulation. Stroke prevalence in Indonesia is 0,8% and it becomes one of the leading cause of death.

Stroke can also cause permanent disability, but cure for complete recovery hasn?t been found. Therefore, a strategy to prevent the damage caused by stroke becomes focus of today?s research. Aim of this study is to identify the neuroprotective effect of Acalypha indica Linn root extract to prevent hypoxia-induced damage on nucleus of hippocampal neuron in rats.

This research is an experimental study performed on fifteen rats (Sprague-Dawley) that divided into three groups receiving three different treatments for 7 days, i.e. negative control group receiving aquades, group receiving extracts 400 mg/kgBW/day, and group receiving extract 500 mg/kgBW/day. Then, rats underwent hypoxia by occlusion of the bilateral common carotid arteries for one hour. The hippocampus tissue was

obtained and was observed to be identified its structural changes.

Results from one-way ANOVA and Post Hoc analysis showed that root extract of A. indica Linn dose of 400 mg/kgBW (p=0,029) and 500 mg/kbBW (p=0,035) have neuroprotective effect on neuron of CA3 hippocampus compared with negative control. However, the analysis showed that root extract of A. indica Linn dose 500 mg/kgBW has no significant difference with dose 400 mg/kgBW.</i>