EFEK LAMA WAKTU PEMBERIAN EKSTRAK ETANOL SELEDRI (Apium graveolens L.) TERHADAP KADAR TUMOR NECROSIS FACTOR-α PADA TIKUS PUTIH (Sparuge dawley) MODEL ISCHEMIA REPERFUSION INJURY

ABSTRAK

Latar Belakang: *Ischemia Reperfusion Injury* (IRI) atau cedera iskemia reperfusi adalah cedera yang terjadi akibat penurunan fungsi ginjal yang terjadi secara cepat, mendadak, dan gangguan aliran darah menuju organ, diikuti dengan pemulihan aliran darah ke organ tersebut yang akan menyebabkan inflamasi dan merusak organ ginjal. Seledri (Apium graveolens L.) mempunyai efek farmakologis antioksidan dan antiinflamasi karena mengandung senyawa aktif seperti apigenin, glikosida iridoid, tannin, flavonoid, alkaloid dan saponin. Aktivitas antioksidan serta antiinflamasi seledri dapat mencegah kerusakan seluler yang dapat menekan peningkatan regulasi TNF-α stimulated dari molekul adhesi seluler vascular, molekul adhesi intraseluler, E-selectin MRA dan IL-1β .**Tujuan:** Untuk mengetahui efek lama waktu pemberian ekstrak etanolseledri terhadap pencegahan peningkatan kadar TNF-α tikus model *ischemia reperfusion injury*. **Desain Penelitian:** Metode penelitian adalah eksperimental dengan post test only with control group design. Dua puluh lima ekor tikus putih dibagi dalam 5 kelompok. Kelompok A sebagai kontrol sehat, kelompok B sebagai kontrol sakit, kelompok C (1000 mg/kgBB selama 7 hari), kelompok D (1000 mg/kgBB selama 14 hari), dan kelompok E (1000 mg/kgBB selama 28 hari). Pada hari ke-8, ke-15 dan ke-29 setelah pemberian ekstrak, kelompok B, C, D, E dibedah dan dibuat model IRI.**Hasil:** Kadar TNF-α dengan metode ELISA kelompok A adalah 36,88±8,9, kelompok B 38,81±2,35, kelompok C 28,85±13, kelompok D 25,91±12,2, Kelompok E 23,60±12,3. Uji *Kruskal-Wallis* menunjukan nilai p=0,039 (p<0,05). Uji *post hoc Mann-Whitney*menunjukan terdapat perbedaan bermakna antara minimal 2 kelompok. **Kesimpulan:** Pemberian ekstrak etanol daun seledri (Apium graveolens L.) dapat menurunkan peningkatan kadar TNF-α pada tikus putih (*Rattus norvegicus*) model *ischemia reperfusion injury*.

Kata kunci: Seledri, Apium graveolens L., kadar TNF-α, *ischemia reperfusion injury.*

THE EFFECT OF LENGTH OF TIME OF CELERY ETHANOLIC EXTRACT'S ADMINISTRATION (Apium graveolens L.) TO TUMOR NECROSIS FACTOR-α LEVELS OF ALBINO RAT (Sprague dawley) MODELS OF ISCHEMIA REPERFUSION INJURY

ABSTRAK

Background*:Ischemia Reperfusion Injury* (IRI) or reperfusion injury is an injury caused due decrease function of kidney which happens quickly, suddenly or interruption of blood flow to organs followed by the recovery of blood flow into those organs then causes inflamation and damages the kidney. Celery (*Apium graveolens L*.) has pharmacological antioxidants and anti-inflammatory because it contains active compounds such as apigenin, iroid glycosides, tannin, flavonoid and saponin. Antioxidants as well as anti- inflammatory activities of celeries can prevent cellular damages which can suppres the increase regulation of TNF-α stimulated from Vascular cell adhesion molecule, intracellular adhesion molecule, E-selectin MRA and IL-1β***Objective*:** The purpose of this research is to discover the effect of the length of time of the celery (*Apium graveolens L.*) administration in preventing the increase in TNF-α levels of IRI's albino rat (*Sprague dawley*) models.***Methode*:**The method of this research is experimental with post test only with control group design. Twenty five albino rats are divided into 5 groups. Group A as healthy control, Group B as control of pain, Group C (1000 mg/kgBB for 7 days), Group D (1000 mg/kgBB for 14 days), and Group E (1000 mg/kgBB for 28 days). On the 8th, 15th, and 29th days after administration of extracts, Group B, C, D, and E were dissected and made into IRI models.***Result*:** ELISA method is used to discover TNF-αlevels average TNF-α levels of group A=36,88±8,9; B=38,81±2,35; C=28,85±13; D=25,91±12,2; E=23,60±12,3. *Kruskal-Wallis* test result indicates p level =0,039 (p<0,05). *Mann-Whitney post hoc* test showed a significant difference between minimum 2 groups. ***Conclusions*:**The administration of celery (Apium graveolens L.) extracts for 14 to 28 days can decreases the increase in TNF-α levels of rat models of *Ischemia Reperfusion Injury*.

Keywords: Celery, *Apium graveolens L.,* TNF-α levels, *ischemia reperfusion injury*