PENGARUH *SECRETOME* TERHADAP KADAR INTERLEUKIN-10 DAN LUARAN KLINIS STROKE ISKEMIK PADA TIKUS

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ABSTRAK

Latar Belakang : Stroke penyebab kecacatan kedua didunia, terapi yang diberikan pada fase akut dibutuhkan sebagai strategi terapi pada stroke. Neurorestorasi paska stroke bersifat neurogenesis, angiogenesis dan neuroplastisitas. *Secretome* salah satu neurorestorasi yang berperanan dalam meningkatkan neurogenesis, angiogenesis, imunomodulator dan menurunkan apoptosis, sehingga menjanjikan perbaikan luaran stroke pasien stroke iskemik. Penelitian ini bertujuan untuk mengetahui pengaruh *secretome* terhadap gambaran histopatologi otak dan luaran klinis stroke iskemik pada tikus.

Metode : Penelitian eksperimental, *randomized pre and post test with control group design*. Model stroke iskemik dengan ligasi a. carotis comunis (CCA). Kelompok kontrol (K, 9 tikus normal), Perlakuan 1 (P1, 9 tikus model stroke iskemik diberikan *secretome* 300 μL 6 jam setelah ligasi CCA secara *intravena*) dan Perlakuan 2 (P2, 9 tikus model stroke iskemik diberikan *normal saline*). Evaluasi luaran stroke dengan tes silinder dan *modified Neurology Severity Score* (mNSS) sebelum ligasi CCA, hari ke-3, 7 dan 21 setelah perlakuan. Pemeriksaan kadar IL-10 pada hari ke-3 dan ke-21.

Hasil : Terdapat luaran stroke yang lebih baik pada hari ke-3, 7, dan hari ke-21 setelah pemberian *secretome* pada kelompok P1 dibandingkan P2. Kadar IL-10 P1 di hari ke-3 dan ke-21 lebih tinggi dibandingkan kelompok K dan P2.

Kesimpulan : Pemberian *secretome* pada tikus model stroke iskemik fase akut menunjukan peningkatan kadar IL-10 dan luaran klinis stroke yang lebih baik.

Kata Kunci : IL-10, ligasi CCA, luaran, *Secretome*, Stroke Iskemik

THE EFFECT OF SECRETOME ON INTERLEUKIN-10 AND OUTCOME OF ISCHEMIC STROKE IN RATS

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ABSTRACT

Background: Stroke is the second leading cause of disability in the world and therapy must be given in the acute phase as a therapeutic strategy. Post-stroke neurorestoration includes neurogenesis, angiogenesis, and neuroplasticity. Secretome is one of the neurorestorations that plays a role in increasing neurogenesis, angiogenesis, and immunomodulators as well as reducing apoptosis, leading to improvement in ischemic stroke patients. Therefore, this study aimed to determine the effect of secretome on brain histopathology and clinical outcomes of ischemic stroke in rats.
Methods: An experimental method was used with a randomized pre and post-tests control group design. The ischemic stroke model was made by ligation of a. carotid comunis (CCA). The rats were divided into the Control group (K) with 9 normal rats, Treatment 1 (P1) comprising 9 ischemic stroke model rats given 300 μL secretome 6 hours after CCA ligation intravenously, and Treatment 2 (P2) including 9 ischemic stroke model rats given normal saline. Stroke outcomes were analyzed using a cylinder test before CCA ligation, on days 3, 7, and 21 post-treatment. Subsequently, an examination of interleukin-10 (IL-10) levels was carried out on days 3 and 21.
Results: The results showed that there was a better stroke outcome on days 3, 7, and 21 after administration of secretome in group P1 compared to P2. IL-10 levels in P1 on days 3 and 21 were higher than in groups K and P2.
Conclusion: Administration of secretome to acute phase ischemic stroke model rats showed an increase in IL-10 levels with better clinical stroke outcomes.

Keywords: IL-10, CCA ligation, Outcome, Secretome, Ischemic Stroke