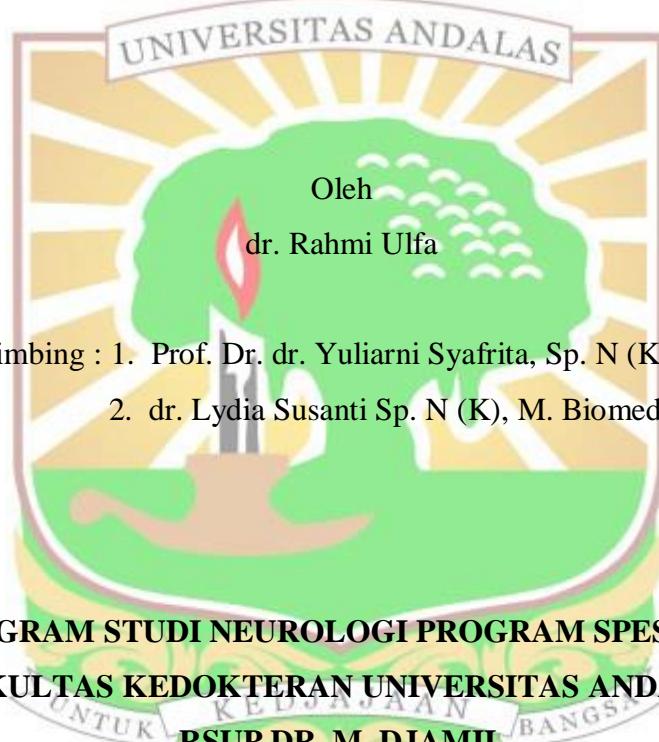


**HUBUNGAN KADAR SERUM PROTEIN HIGH
MOBILITY GROUP BOX 1 DENGAN FUNGSI KOGNITIF
PADA PASIEN EPILEPSI**



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HUBUNGAN KADAR SERUM PROTEIN HIGH MOBILITY GROUP BOX 1 DENGAN FUNGSI KOGNITIF PADA PASIEN EPILEPSI

ABSTRAK

Latar Belakang: Epilepsi merupakan penyakit neurologis kronis dengan jumlah penderita global sebesar 60 juta orang dengan bangkitan berulang di seluruh dunia. Bangkitan berulang berkotribusi terhadap perburukan fungsi kognitif pasien epilepsi. Mekanisme epilepsi sangat kompleks dan respon neuroinflamasi berkaitan erat dengan epilepsi. Protein HMGB1 sebagai marker inflamasi dikaitkan dengan proses epileptogenesis. Ditemukan peningkatan kadar HMGB1 serum pada pasien epilepsi, terutama epilepsi yang tidak terkontrol.

Metode: Penelitian ini merupakan penelitian observasional dengan desain studi *cross-sectional* yang dilakukan di Poliklinik Neurologi RSUP Dr. M. Djamil Padang dari bulan Januari 2024 hingga bulan Mei 2024. Fungsi kognitif dinilai menggunakan Instrumen MoCa -Ina. Kadar HMGB1 diukur dengan metode ELISA yang dilakukan di Laboratorium FK Universitas Andalas. Analisis statistik dilakukan menggunakan SPSS versi 25, bermakna bila nilai $p \leq 0,05$

Hasil: Subjek memiliki rerata usia 28,5 tahun, perempuan lebih banyak dibanding laki-laki yaitu 53,3%. Ditemukan gangguan kognitif sebanyak 68,9 % dimana 86,67 % penderita epilepsi belum terkontrol. Rerata kadar serum HMGB 1 pada pasien epilepsi adalah 22,6 ng/ml. Hubungan antara kadar HMGB1 dengan berbagai tingkat fungsi kognitif didapatkan P value 0,188. Hubungan antara faktor-faktor yang mempengaruhi fungsi kognitif dengan kadar HMGB1 antara lain usia (p value 0,144), jenis kelamin (p value 0,524), pendidikan (p value 0,132), lama menyandang epilepsi (p value 0,435), jumlah terapi (p value 0,306), dan Epilepsi terkontrol atau tidak (p value 0,909).

Kesimpulan: Tidak terdapat hubungan antara kadar serum protein HMGB1 dengan fungsi kognitif pada pasien epilepsi.

Kata kunci: HMGB1, fungsi kognitif, epilepsi

THE RELATIONSHIP BETWEEN SERUM LEVELS OF HIGH MOBILITY GROUP BOX 1 PROTEIN AND COGNITIVE FUNCTION IN EPILEPSY PATIENTS

ABSTRACT

Background: Epilepsy is a chronic neurological disease with a global incidence of 60 million people with recurrent seizures worldwide. Recurrent seizures contribute to worsening cognitive function in patients with epilepsy. The mechanism of epilepsy is very complex and the neuroinflammatory response is closely related to epilepsy. HMGB1 protein as an inflammatory marker is associated with the process of epileptogenesis. Increased serum HMGB1 levels were found in epilepsy patients, especially those with uncontrolled epilepsy.

Methods: This study is an observational study with a cross-sectional study design conducted at the Neurology outpatient of Dr. M. Djamil Hospital Padang from January 2024 to May 2024. Cognitive function was assessed using the MoCa-Ina Instrument. HMGB1 levels were measured using the ELISA method conducted at the Faculty of Medicine Laboratory, Andalas University. Statistical analysis was performed using SPSS version 25, meaningful if the p-value ≤ 0.05 .

Results: Subjects had an average age of 28.5 years, more women than men, 53.3%. Cognitive impairment was found as much as 68.9% where 86.67% of epilepsy patients were not controlled. The mean serum HMGB1 level in epilepsy patients was 22.6 ng/ml—the relationship between HMGB1 levels with various levels of cognitive function obtained a p-value of 0.188. The relationship between factors that affect cognitive function with HMGB1 levels includes age (p-value 0.144), gender (p-value 0.524), education (p-value 0.132), and length of time in epilepsy.

Conclusion: There is no relationship between serum HMGB1 protein levels and cognitive function in epilepsy patients.

Key words: HMGB1, cognitive function, epilepsy