

KESESUAIAN ANTARA KETEBALAN FORNIKS DAN VOLUME MAMMILLARY BODY DENGAN VOLUME HIPOKAMPUS PADA PASIEN EPILEPSI LOBUS TEMPORAL MESIAL

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Latar Belakang

Epilepsi lobus temporal mesial (ELTM) adalah epilepsi yang paling umum dan mengenai kurang lebih lima juta orang diseluruh dunia. Fokus epileptogenik seringkali terjadi padalobus temporal struktur hipokampus dan terdapat asosiasi erat dengan sirkuit Papez yang melibatkan *mammillary body* (MB) dan forniks.

Tujuan

Penelitian bertujuan menilai kesesuaian serta nilai batas abnormalitas dari volume hipokampus, ketebalan forniks dan volume MB pada pasien ELTM di RSUP dr Kariadi, Jawa Tengah, Indonesia.

Metode

Penelitian menggunakan metode potong lintang dengan pendekatan retrospektif terhadap 33 subyek penelitian yang diperiksa pada bulan Januari hingga Desember 2022. Seluruh subyek terdiagnosa klinis ELTM yang mendapat layanan pemeriksaan *magnetic resonance imaging* (MRI) dihitung volume hipokampus, ketebalan forniks, dan volume MB kemudian dianalisa korelasinya. Sebagai tambahan, diambil pula data 28 subyek normal.

Hasil

Uji korelasi Pearson positif antara ketebalan forniks dengan volume hipokampus kanan ($p < 0,001$; $r = 0,623$) dan kiri ($p = 0,001$ $r = 0,533$). Uji korelasi Pearson positif antara volume MB dengan volume hipokampus kanan ($p = 0,003$; $r = 0,503$) dan kiri ($p = 0,001$; $r = 0,56$). Nilai batas volume hipokampus dengan uji *Chi-Square* = $3,072 \text{ cm}^3$. Uji Mann-Whitney pada ketebalan forniks kanan serta uji t tidak berpasangan pada ketebalan forniks kiri dan volume MB pada subyek epilepsi dan normal, tidak didapatkan perbedaan signifikan.

Simpulan

Penelitian ini membuktikan adanya kesesuaian dengan korelasi kuat antara ketebalan forniks dan volume MB dengan volume hipokampus pada pasien ELTM.

Kata Kunci : Ketebalan Forniks, Volume Mamillary Body, Volume Hipokampus, Epilepsi, MRI

COMPATIBILITY BETWEEN FORNIX THICKNESS AND MAMMILLARY BODY VOLUME WITH HIPPOCAMPUS VOLUME IN MESIAL TEMPORAL LOBE EPILEPSY

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Background

Mesial temporal lobe epilepsy (MTLE) is the most common form of epilepsy and affects approximately five million people worldwide. Epileptogenic foci often occur in the hippocampal structure of temporal lobe and there is a close association with the Papez circuit that involves the mammillary body (MB) and fornix.

Objective

The aim of this study was to assess compatibility and abnormality threshold of hippocampal volume, fornix thickness and MB volume in MTLE patients at Dr. Kariadi General Hospital, Central Java, Indonesia.

Method

This study used a cross-sectional method with a retrospective approach to 33 research subjects who were examined from January to December 2022. All subjects were clinically diagnosed with MTLE who received magnetic resonance imaging (MRI) examination calculated hippocampal volume, fornix thickness, and MB volume and then analyzed the correlation. In addition, data were also taken from 28 normal subjects.

Results

Pearson correlation test was positive between fornix thickness and hippocampal volume of the right side (p value < 0.001; r = 0.623) and left side (p value = 0.001; r = 0.533). Pearson correlation test was positive between MB volume and hippocampal volume of the right side (p value = 0.003; r = 0.503) and left side (p value = 0.001; r = 0.56). Hippocampal volume cut off by *Chi-Square* test is 3,072 cm³. The Mann-Whitney test for right fornix thickness, unpaired t test for left fornix thickness and mamillary body volume in epileptic and normal subjects, found no significant differences.

Conclusion

This study proves the compatibility with a strong correlation between fornix thickness and MB volume with hippocampal volume in MTLE patients.

Keywords: Fornix Thickness, Mamillary Body Volume, Hippocampal Volume, Epilepsy, MRI