

KORELASI RASIO VOLUME HIPOKAMPUS TERHADAP TOTAL INTRACRANIAL VOLUME DENGAN DERAJAT ATROFI KORTIKAL GLOBAL BERDASARKAN *MAGNETIC RESONANCE IMAGING* PADA PASIEN DEMENSIA ALZHEIMER

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INTISARI

Latar Belakang: Atrofi hipokampus dan korteks serebral merupakan ciri utama dalam penyakit Alzheimer. Rasio volume hipokampus terhadap total volume intrakranial (HV/TIV) dan derajat atrofi kortikal global (GCA) dapat dievaluasi melalui MRI dan memberikan informasi kuantitatif serta semi-kuantitatif mengenai derajat kerusakan otak.

Tujuan: nilai hubungan antara rasio HV/TIV dengan derajat GCA berdasarkan pencitraan MRI pada pasien demensia Alzheimer.

Metode: Penelitian ini menggunakan desain potong lintang retrospektif terhadap 41 pasien dengan diagnosis klinis demensia Alzheimer. Rasio HV/TIV dihitung dari hasil MRI volumetrik, sedangkan derajat GCA dinilai dengan skala visual Pasquier. Analisis korelasi Spearman digunakan untuk mengevaluasi hubungan antara kedua variabel.

Hasil: Diperoleh nilai korelasi negatif bermakna antara rasio HV/TIV dengan derajat GCA ($r = -0,432$; $p = 0,005$), menunjukkan bahwa penurunan rasio HV/TIV berhubungan dengan peningkatan derajat atrofi kortikal global.

Kesimpulan: Terdapat korelasi negatif yang signifikan antara rasio HV/TIV dan derajat GCA. Rasio HV/TIV dapat digunakan sebagai indikator tambahan dalam menilai derajat keparahan atrofi otak pada pasien demensia Alzheimer.

Kata kunci: alzheimer, volume hipokampus, HV/TIV, atrofi kortikal global, MRI kepala

Correlation Between Hippocampal Volume to Total Intracranial Volume Ratio and Global Cortical Atrophy on Brain MRI in Patients with Alzheimer's Dementia

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ABSTRACT

Background: Hippocampal and cortical atrophy are key features in Alzheimer's disease. The hippocampal volume to total intracranial volume ratio (HV/TIV) and the global cortical atrophy (GCA) score can be assessed using MRI to provide both quantitative and semi-quantitative measures of brain degeneration.

Objective: To evaluate the correlation between HV/TIV ratio and GCA score based on MRI findings in patients with Alzheimer's dementia.

Methods: This was a retrospective cross-sectional study involving 41 patients with clinically diagnosed Alzheimer's dementia. The HV/TIV ratio was calculated from volumetric MRI data, and the GCA score was assessed using the Pasquier visual scale. Spearman correlation analysis was used to examine the relationship between the two variables.

Results: A significant negative correlation was found between HV/TIV ratio and GCA score ($r = -0.432$; $p = 0.005$), indicating that a lower HV/TIV ratio is associated with a higher degree of global cortical atrophy.

Conclusion: There is a significant negative correlation between the HV/TIV ratio and GCA score. The HV/TIV ratio may serve as an additional indicator in evaluating the severity of brain atrophy in patients with Alzheimer's dementia.

Keywords: alzheimer's disease, hippocampal volume, HV/TIV, global cortical atrophy, brain MRI