

KORELASI DERAJAT LEUKOARAIOSIS DENGAN VOLUME CORTICAL GREY MATTER PADA MRI KEPALA PASIEN DEMENSIA

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INTISARI

Tujuan : Penelitian untuk mengetahui adanya korelasi antara derajat leukoaraiosis dengan volume *cortical grey matter* pada MRI kepala pasien demensia.

Metode : Penelitian ini merupakan penelitian *cross-sectional* dengan pengambilan data secara retrospektif dari data sekunder pasien klinis demensia yang dilakukan MRI kepala pada Januari 2020 - Juni 2022. Pengambilan sampel secara *consecutive non-random sampling*. Subjek terpilih sesuai kriteria inklusi dan eksklusi. Dilakukan penilaian derajat leukoaraiosis dan hasilnya dikorelasikan dengan volume *cortical grey matter*.

Hasil : Jumlah sampel 40 subyek. Sebagian besar berjenis kelamin laki-laki sebanyak 24 subjek (60%). Sebaran usia didominasi kelompok 60-70 tahun (47,5%). Sebagian besar subyek memiliki tekanan darah kategori hipertensi (72,5%) dengan IMT kategori normal (75%). Jumlah subyek terbanyak pada demensia vaskular (52%) diikuti demensia Alzheimer (24%). Didapatkan korelasi antara PVWM dengan volume *cortical grey matter* di area frontal ($p=0,012$; $r=-0,355$) dan temporal ($p=0,036$; $r=-0,287$) dan DWM dengan volume *cortical grey matter* di area temporal ($p=0,048$; $r=-0,26$)

Kesimpulan : Didapatkan korelasi yang bermakna secara statistik dengan arah negatif antara derajat leukoaraiosis dengan volume *cortical grey matter*. Namun, keeratan hubungan dalam kategori lemah.

Kata kunci : demensia, Fazekas, *cortical grey matter*, leukoaraiosis, volumetrik MRI

CORRELATION OF LEUKOARAIOSIS DEGREE WITH CORTICAL GREY MATTER VOLUME ON HEAD MRI OF DEMENTIA PATIENTS

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ABSTRACT

Objective: This study is to determine the correlation between the degree of leukoaraiosis and the volume of cortical grey matter on head MRI of dementia patients.

Methods: This study is a cross-sectional study with retrospective data collection from secondary data of clinical dementia patients who underwent head MRI in January 2020 - June 2022. Consecutive non- random sampling was taken. Subjects were selected according to the inclusion and exclusion criteria. The degree of leukoaraiosis was assessed and the results were correlated with cortical grey matter volume.

Results: The number of samples is 40 subjects. Most of them were male as many as 24 subjects (60%). The age distribution was dominated by the 60-70 year old group (47.5%). Most of the subjects had blood pressure in the hypertension category (72.5%) with normal BMI (75%). The highest number of subjects had vascular dementia (52%) followed by Alzheimer's dementia (24%). A correlation was found between PVWM with cortical grey matter volume in the frontal area ($p=0.012$; $r=-0.355$) and temporal ($p=0.036$; $r=-0.287$) and DWM with cortical grey matter volume in the temporal area ($p=0.048$; $r=-0.26$)

Conclusion: There was a statistically significant correlation in a negative direction between the degree of leukoaraiosis and the volume of cortical grey matter. However, the closeness of the relationship is in the weak category

Keywords : dementia, Fazekas, cortical grey matter, leukoaraiosis, volumetric MRI