Korelasi Nilai Volumetrik *Magnetic Resonance Imaging Total Grey Matter* dengan Profil Lipid Pasien Demensia

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INTISARI

Tujuan: Penelitian ini untuk mengetahui korelasi nilai volumetrik *Magnetic Resonance Imaging* (MRI) *total grey matter* dengan profil lipid pasien demensia.
Metode: Penelitian ini merupakan observasional analitik korelatif, desain penelitian *cross-sectional*. Data retrospektif dari data sekunder pasien demensia yang dilakukan MRI volumetrik otak pada MRI 1,5Tesla (*Multiva 1,5T, Philips*) periode September 2020 - Agustus 2022, laboratorium total kolesterol, HDL, LDL, trigliserida. Pengambilan sampel *consecutive non-random sampling*. Subjek terpilih sesuai kriteria inklusi dan eksklusi. Dilakukan penilaian volumetrik *total grey matter*, hasilnya dikorelasikan dengan kadar total kolesterol, HDL, LDL, dan trigliserida.
Hasil: Jumlah sampel 35 subjek. Terbanyak jenis kelamin laki-laki yaitu 23 subjek (65,7%). Usia didominasi kelompok 66-75 tahun (51,4%). Sebagian besar memiliki riwayat stroke non hemoragik (60%), IMT normal (80,0%), tekanan darah hipertensi (94,3%). Jumlah subjek sama pada demensia Alzheimer (40%) dan demensia vaskular (40%), paling sedikit demensia campuran (20%). Sebagian besar subjek memilki total kolesterol normal (60,0%), HDL normal (71,4%), LDL tinggi (62,9%), dan trigliserida normal (62,9%). Dari analisis korelasi Spearman, tidak ditemukan hubungan bermakna volumetrik MRI *total grey matter* dan profil lipid seluruh tipe demensia. Analisis subkelompok menunjukkan korelasi positif kuat volumetrik *total grey matter* demensia Alzheimer dan demensia vaskular terhadap LDL (p = 0,027 dan 0,032).
Kesimpulan: Tidak ditemukan hubungan bermakna secara statistik antara volumetrik MRI *total grey matter* dan profil lipid demensia. Pada analisis subkelompok menunjukkan korelasi positif kuat volumetrik *total grey matter* demensia Alzheimer dan demensia vaskular terhadap LDL (p = 0,027 dan 0,032).

Kata Kunci: **demensia, HDL, LDL, total kolesterol, trigliserida, *total grey matter*, volumetrik MRI**

The Correlation Between Volumetric Magnetic Resonance Imaging Values of Total Grey Matter and Lipid Profiles of Dementia Patients

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ABSTRACT

Objectives: To determine the correlation between the volumetric Magnetic Resonance Imaging (MRI) value of total grey matter and the lipid profile of dementia patients.
Methods: This research is a correlative analytic observational, cross-sectional research design. Retrospective data from secondary data of dementia patients who underwent brain volumetric MRI at MRI 1.5Tesla (Multiva 1.5T, Philips) for the period September 2020 - August 2022, laboratory for total cholesterol, HDL, LDL, triglycerides. Consecutive non-random sampling. Subjects were selected according to the inclusion and exclusion criteria. Volumetric assessment of total gray matter was carried out, the results were correlated with levels of total cholesterol, HDL, LDL and triglycerides.
Results: The number of samples is 35 subjects. Most of the male gender is 23 subjects (65.7%). The age group was dominated by 66-75 years (51.4%). Most of them had a history of non-hemorrhagic stroke (60%), normal BMI (80.0%), hypertension blood pressure (94.3%). The number of subjects is similar in Alzheimer's dementia (40%) and vascular dementia (40%), least mixed dementia (20%). Most of the subjects had normal total cholesterol (60.0%), normal HDL (71.4%), high LDL (62.9%), and normal triglycerides (62.9%). From Spearman's correlation analysis, there was no significant volumetric relationship between total gray matter MRI and lipid profile of all types of dementia. Subgroup analysis showed a strong positive correlation of volumetric total gray matter in Alzheimer's dementia and vascular dementia with LDL ($p = 0.027$ and 0.032).
Conclusions: There was no statistically significant relationship was found between volumetric MRI total grey matter and lipid profiles in dementia. The subgroup analysis showed strong positive correlation between volumetric total grey matter in Alzheimer's dementia and vascular dementia with LDL ($p = 0.027$ and 0.032).

Keywords: dementia, HDL LDL total cholesterol, triglycerides, total grey matter, volumetric MRI