

**KORELASI RERATA KECEPATAN ALIRAN ARTERI
SEREBRI MEDIA DENGAN NILAI MOCA-INA PADA PASIEN
DEMENSIA DI RSUP DR. SARDJITO YOGYAKARTA**

Gina Puspita Fatimah*, Astuti**, Yudiyanta**

*Residen Neurologi Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan
Universitas Gadjah Mada

**Staff Departemen Neurologi Fakultas Kedokteran, Kesehatan Masyarakat, dan
Keperawatan Universitas Gadjah Mada/KSM Saraf RSUP Dr. Sardjito Yogyakarta

ABSTRAK

Latar belakang: Deteksi dini demensia semakin diperlukan demi menangani progresifitas penyakit yang menimbulkan tingkat ketergantungan dan biaya yang tinggi. Patomekanisme awal terjadinya demensia adalah penurunan aliran darah otak. Penggunaan *transcranial doppler* (TCD) dapat menunjukkan hubungan hemodinamik serebral dan lesi otak dikaitkan dengan gangguan kognitif. Penelitian ini akan melihat hubungan antara rerata kecepatan aliran arteri serebri media dengan penilaian fungsi kognitif yang dinilai dengan Montreal *Cognitive Assessment* versi Indonesia (MoCA-Ina) pada pasien Demensia.

Metode: Penelitian analitik observasional dengan pendekatan potong lintang berbasis rumah sakit. Dilakukan studi deskriptif serta korelasi antara rerata kecepatan aliran arteri serebri media dengan fungsi kognitif pasien demensia yang diukur dengan MoCA-Ina pada pasien di Poli Memori RSUP Dr. Sardjito Yogyakarta periode Januari 2021 – Maret 2023.

Hasil: Sebanyak 41 subjek penelitian memiliki rerata usia $65,28 \pm 8,85$ tahun dan memiliki rerata skor MoCA-Ina $14,68 \pm 6,50$. Demensia vaskular merupakan jenis demensia terbanyak 17 subjek (41,5%) dengan faktor resiko terbanyak memiliki riwayat stroke dan hipertensi masing-masing 29 subjek (70,7%). Hasil uji bivariat rerata kecepatan aliran arteri serebri media kanan dengan MoCA-Ina $p = 0,034$ dan $r = 0,287$; dan rerata kecepatan aliran arteri serebri media kiri dengan MoCA-Ina $p = 0,021$ dan $r = 0,319$. Hasil analisis multivariat dengan metode *backward* pada tahap akhir didapatkan adanya hubungan korelasi positif rerata kecepatan aliran arteri serebri media kiri dengan nilai MoCA-Ina ($p=0,003$) dengan koefisien regresi (B)=0,185 artinya setiap peningkatan 1 satuan rerata kecepatan aliran arteri serebri media kiri akan meningkatkan skor MoCA-Ina 0,185 satuan, sementara riwayat stroke dengan $p=0,031$ dan koefisien regresi (B)=-4,435 artinya pasien dengan stroke memiliki skor MoCA-Ina 4,435 satuan lebih rendah.

Kesimpulan: Hasil studi ini menunjukkan bahwa rerata kecepatan aliran arteri serebri media kanan dan kiri menunjukkan korelasi positif dengan nilai MoCA-Ina pada pasien demensia di Poli Memori RSUP Dr. Sardjito Yogyakarta.

Kata Kunci: demensia, rerata kecepatan aliran arteri serebri media, MoCA-Ina

Korespondensi: Gina Puspita Fatimah

Email: ginapuspita.md@gmail.com

CORRELATION BETWEEN MEAN FLOW VELOCITY OF MIDDLE CEREBRAL ARTERY WITH MOCA-INA SCORE IN DEMENTIA PATIENTS AT RSUP DR. SARDJITO YOGYAKARTA

Gina Puspita Fatimah*, Astuti**, Yudiyanta**

*Neurology Resident, Faculty Medicine, Public Health, and Nursing, Universitas Gadjah Mada Yogyakarta/ Sardjito General Hospital

**Staff of Neurology Department, Faculty Medicine, Public Health, and Nursing, Universitas Gadjah Mada Yogyakarta/ Sardjito General Hospital

ABSTRACT

Background: Early detection of dementia is increasingly necessary to manage the progressive nature of the disease that leads to high levels of dependency and cost. The initial pathomechanism of dementia is decreased cerebral blood flow. The use of *transcranial doppler* (TCD) can show the relationship between cerebral hemodynamics and brain lesions associated with cognitive impairment. This study will look at the correlation between mean flow velocity of the middle cerebral artery and the assessment of cognitive function assessed by the Montreal Cognitive Assessment Indonesian version (MoCA-Ina) in patients with dementia.

Methods: Observational analytic study with hospital-based cross-sectional approach. A descriptive study was conducted as well as a correlation between the mean flow velocity of the middle cerebral artery and the cognitive function of dementia patients measured by MoCA-Ina in patients at the Memory Clinic of Dr. Sardjito Hospital Yogyakarta from January 2021 to March 2023.

Results: A total of 41 research subjects had a mean age of 65.28 ± 8.85 years and had a mean MoCA-Ina score of 14.68 ± 6.50 . Vascular dementia is the most common type of dementia 17 subjects (41.5%) with the most risk factors having a history of stroke and hypertension each 29 subjects (70.7%). The results of the bivariate test mean right middle cerebral artery flow velocity with MoCA-Ina $p = 0.034$ and $r = 0.287$; and mean flow velocity of left middle cerebral artery with MoCA-Ina $p = 0.021$ and $r = 0.319$. The results of multivariate analysis with the backward method in the final stage showed a positive correlation between mean flow velocity of the left middle cerebral artery and MoCA-Ina score ($p=0.003$) with a regression coefficient (B)=0.185 meaning that every 1 unit increase in mean flow velocity of the left middle cerebral artery will increase the MoCA-Ina score by 0.185 units, while a history of stroke with $p=0.031$ and regression coefficient (B)=-4.435 means that patients with stroke have a lower MoCA-Ina score of 4.435 units.

Conclusion: The results of this study indicate that the mean flow velocity of the right and left middle cerebral arteries shows a positive correlation with the MoCA-Ina score in patients with dementia at the Memory Clinic of Dr. Sardjito Hospital Yogyakarta.

Keywords: *dementia, mean flow velocity of middle cerebral artery, MoCA-Ina*

Correspondence: Gina Puspita Fatimah

Email: ginapuspita.md@gmail.com