

Rerata nilai pulsatility index arteri serebri media pada penyandang diabetes mellitus tipe 2 dengan atau tanpa retinopati = The pulsatility index pi of middle cerebral artery in type 2 diabetes with and without retinopathy

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Abstrak

[ABSTRAK

Latar belakang? Mikroangiopati serebral merupakan salah satu komplikasi vaskular pada Diabetes Mellitus (DM). Salah satu parameter pada Transcranial Doppler (TCD) yang menilai adanya resistensi distal dari arteri yang diperiksa yang dapat merefleksikan adanya mikroangiopati di otak adalah Pulsatility Index (PI). Penelitian ini menghubungkan antara rerata PI arteri serebri media (Middle Cerebral Artery/MCA) dengan kejadian retinopati diabetik yang merupakan komplikasi yang paling spesifik dan tersering pada DM tipe 2. Tujuan? Untuk mengetahui perbedaan rerata nilai PI MCA pada penyandang DM tipe 2 di otak pada penyandang DM tipe 2 beserta titik potongnya pada kurva ROC dan faktor-faktor yang mempengaruhinya. Metode? Penelitian ini adalah penelitian potong lintang dengan 60 subyek DM tipe 2 tanpa komplikasi makrovaskular, terdiri dari 29 pasien retinopati dan 31 pasien tanpa retinopati dari poliklinik rawat jalan endokrin RS Cipto Mangunkusumo periode November 2013 ? April 2014. Dilakukan pemeriksaan TCD untuk menilai PI MCA. Usia, riwayat hipertensi, dislipidemia, lama menyandang DM tipe 2 dan HbA1c dianalisis sebagai faktor perancu.

Hasil? Pada penyandang DM tipe 2 dengan retinopati memiliki nilai rerata PI arteri serebri media yang lebih tinggi secara bermakna ($1,17 \pm 0,25$) dibandingkan dengan penyandang DM tipe 2 tanpa retinopati ($1,05 \pm 0,26$) dengan $p=0,001$. Usia, riwayat hipertensi, dislipidemia, lama menyandang DM tipe 2 dan HbA1c tidak berhubungan terhadap perubahan rerata PI MCA ($p=0,187$; $p=0,608$; $p=0,734$; $p=0,159$; $p=0,548$). Titik potong nilai PI MCA pada penyandang DM tipe 2 dengan retinopati adalah pada nilai PI 1,025 dengan sensitifitas 70% dan spesifisitas 54%.

Simpulan? Pada penelitian ini, didapatkan perbedaan rerata nilai PI MCA secara bermakna antara kelompok dengan dan tanpa retinopati dengan nilai titik potong nilai PI MCA pada penyandang DM tipe 2 dengan retinopati adalah pada nilai PI 1,025 dengan sensitifitas 70% dan spesifisitas 54%.

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ABSTRACT

Background? Cerebral microangiopathy is one of the most important complications in diabetes mellitus. Elevation in pulsatility index (PI) as measured by Transcranial Doppler (TCD) have been postulated to reflect increased vascular resistance distal of artery being examined. This study correlate PI mean of middle cerebral artery (MCA) with retinal mikroangiopathy which is the most common and specific in diabetic patients.

Objective? To determine differences in PI MCA group with and without retinopathy in type 2 diabetic patients and to find the cuttpoint value at ROC curve.

Methods? The study was carried out in sixty diabetic patients (with no other vascular abnormality), divided into 2 group, 29 type 2 diabetic patients with retinopathy and 31 diabetic patients without retinopathy. TCD

was performed to record pulsatility index of MCA then analyzed to find the cutpoint value. Ages, duration of diabetes, HbA1c levels, history of hypertension and dyslipidemia was analyzed as a confounding factor. Results? The PI of MCA are significantly higher in diabetic patients with retinopathy than without retinopathy ($P=0.001$) with cut point at $PI > 1,025$ with 70% sensitivity and 54% specificity. Age, HbA1c level, diabetes duration, history of hypertension and dyslipidemia does not have a meaningful relationship with change cerebral status ($p = 1.000$, $p = 0.657$, $p = 0.354$, $p = 0.538$).

Conclusions? There are significant differences between mean of pulsatility index in diabetic patients with and without retinopathy. The Cutpoint are at $PI > 1,025$ with 70% sensitivity and 54% specificity; Background—Cerebral microangiopathy is one of the most important complications in diabetes mellitus. Elevation in pulsatility index (PI) as measured by Transcranial Doppler (TCD) have been postulated to reflect increased vascular resistance distal of artery being examined. This study correlate PI mean of middle cerebral artery (MCA) with retinal mikroangiopathy which is the most common and specific in diabetic patients.

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