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Korelasi HbA1c dan durasi sakit terhadap ketebalan jaringan Adiposa epikardium, massa ventrikel kiri, dan ketebalan tunika intima media arteri karotis pasien diabetes melitus tipe 1 = Correlation of HbA1c and duration of illness to the thickness of Epicardial Adipose Tissue, Left Ventricular Mass, and the Thickness of the Tunica Intima Media of the Carotid Artery of Type 1 Diabetes Mellitus

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Abstrak

Latar Belakang: Penyakit kardiovaskular (PK) merupakan penyebab utama kematian dan merupakan beban kesehatan di seluruh dunia. Faktor risiko kardiovaskular salah satunya adalah diabetes melitus (DM) tipe 1. Faktor risiko ini berhubungan dengan durasi sakit dan kontrol gula darah yang diwakili dengan HbA1c. Tanda awal dari gangguan kardiovaskular dapat diperiksa dengan pemeriksaan biomarker seperti ketebalan jaringan adiposa epikardium (epicardial adipose tissue [EAT]), tunika intima media arteri karotis (carotid intima media thickness [CIMT]), dan massa ventrikel kiri (left ventricular [LV] mass).
Tujuan: Mengetahui korelasi durasi sakit dan HbA1c terhadap EAT, CIMT dan LV mass pada pasien DM tipe 1.
Metode: Penelitian ini adalah studi analitik potong lintang pada pasien DM tipe 1 yang terdapat di registri pasien DM tipe 1 di Departemen Ilmu Kesehatan Anak Rumah Sakit Cipto Mangunkusumo. Pengukuran CIMT, LV mass dan ketebalan EAT menggunakan alat berdasarkan ultrasonografi. Dilakukan analisis regresi linear untuk melihat korelasi durasi sakit dan HbA1c terhadap CIMT, EAT, dan LV mass.
Hasil: Median CIMT pada pasien DM tipe 1 adalah 530 (357–700) mikrometer, median EAT 0,4 (0,2-0,7) cm. Terdapat korelasi positif yang moderat durasi sakit terhadap EAT; dengan persamaan EAT (cm) = 0,350 + 0,001 durasi sakit (bulan), r=0,385 p<0,05, R2 14,8%. Terdapat korelasi positif yang moderat durasi sakit terhadap CIMT; dengan persamaan CIMT (mikrometer) = 498,481 + 0,313 durasi sakit (bulan), r=0,372 p<0,05, R2 13,8%. Tidak terdapat korelasi durasi sakit dengan LV mass. Tidak terdapat korelasi HbA1c terhadap CIMT, EAT dan LV mass.
Simpulan: Durasi sakit mempunyai korelasi positif terhadap CIMT dan EAT
.....Background: Cardiovascular disease is the leading cause of death and is a health burden in the world. One of the cardiovascular risk factors is type 1 diabetes mellitus (DM). This risk factor is related to the disease duration and control of blood sugar represented by HbA1c. Early signs of cardiovascular disorders can be examined by examination of biomarkers such as epicardial adipose tissue (EAT) thickness, carotid intima media thickness (CIMT), and left ventricular (LV) mass.
Objective: To determine the correlation of disease duration and HbA1c to EAT, CIMT and LV mass in patients with type 1 DM.
Methods: This study was a cross-sectional analytic study of type 1 DM patients found in the registry of type 1 DM patients in the Department of Pediatrics at Cipto Mangunkusumo Hospital. CIMT measurements, LV mass measurements and EAT thickness by ultrasound examination. Linear regression analysis was performed to see the correlation of disease duration and HbA1c on CIMT, EAT, and LV mass.
Results: The median CIMT in type 1 DM patients was 530 (357–700) micrometers, the median EAT was 0.4

(0.2-0.7) cm. There was a moderate positive correlation of the disease duration with EAT; by equation EAT (cm) = 0.350 + 0.001 disease duration (month), r=0.385 $p<0.05$, R2 14.8%. There was a moderate positive correlation of the disease duration with CIMT; by equation CIMT (micrometer) = 498.481 + 0.313 disease duration (month), r=0.372 $p<0.05$, R2 13.8%. There was no correlation of disease duration with LV mass. There was no correlation of HbA1c to CIMT, EAT and LV mass.
Conclusion: Disease duration has a positive correlation with CIMT and EAT.