

PERBANDINGAN *RELATIVE WALL THICKNESS* VENTRIKEL KIRI MENGGUNAKAN *CORONARY COMPUTED TOMOGRAPHY* *ANGIOGRAPHY* DAN EKHOKARDIOGRAFI

Muhammad Azmi¹, Arif Faisal², Sri Retna Dwidanarti²

¹Mahasiswa dan ²Staf Departemen Radiologi
Fakultas Kedokteran, Keperawatan dan Kesehatan Masyarakat
Universitas Gadjah Mada
Yogyakarta-Indonesia

INTISARI

Latar Belakang : *Relative wall thickness* (RWT), merupakan ketebalan dinding relatif yang didefinisikan sebagai 2 kali ketebalan dinding posterior dibagi dengan diameter diastolik ventrikel kiri (LV), ini menggambarkan ukuran geometri LV. RWT merupakan ukuran ekokardiografi yang paling umum untuk memperkirakan risiko aritmia ventrikel. *Coronary Computed Tomography Angiography* (CCTA) juga dapat memberikan informasi volumetrik tiga dimensi pada ruang jantung, terutama menilai ruang ventrikel kiri (LV).

Tujuan : Mengetahui nilai uji diagnostik pengukuran *relative wall thickness* ventrikel kiri yang diukur menggunakan dua modalitas yaitu *coronary computed tomography angiography* dan ekhokardiografi.

Metode Penelitian : Penelitian ini merupakan penelitian *cross sectional*. Pengambilan sampel dilakukan secara retrospektif. Didapatkan data sejumlah 567 pasien yang menjalani pemeriksaan CCTA dan ekhokardiografi selama bulan Januari 2020 hingga Juni 2021. Kemudian data pasien ini ditelusuri kembali riwayat kelainan bawaan, riwayat *diabetes mellitus*, hipertensi dan operasi pada jantung. Akhirnya didapatkan sejumlah 32 pasien sebagai sampel.

Hasil : Rata-rata tebal septum interventrikel berdasarkan CCTA dan pada ekhokardiografi, *posterior wall thickness* dan RWT tidak menunjukkan perbedaan bermakna, atau nilai $p > 0,01$. Sedangkan LVID memiliki nilai $p = 0,001$ dan ini menjadi satu-satunya perbedaan yang bermakna. Nilai sensitivitas, spesifitas dan akurasi hanya sebesar 62,5% artinya kemampuan menilai RWT pada CCTA sesuai *gold standard* ekhokardiografi hanya sebesar 62,5%.

Kesimpulan : Membandingkan nilai *relative wall thickness* ventrikel kiri melalui pemeriksaan CCTA dan pemeriksaan ekhokardiografi tidak terdapat kesetaraan, nilai akurasi hanya 62,5%. Dari beberapa parameter yang diukur, hanya LVID yang memiliki nilai $p < 0,05$.

Kata Kunci : LV, CCTA, RWT, Ekhokardiografi

COMPARISON OF LEFT VENTRICULAR RELATIVE WALL THICKNESS USING CORONARY COMPUTED TOMOGRAPHY ANGIOGRAPHY AND ECHOCARDIOGRAPHY

Muhammad Azmi¹, Arif Faisal², Sri Retna Dwidanarti²

¹Resident and ²Staff Radiology Department
Faculty of Medicine, Public Health and Nursing
Gadjah Mada University
Yogyakarta-Indonesia

ABSTRACT

Background: Relative wall thickness defined as 2 times the posterior wall thickness divided by the left ventricular (LV) diastolic diameter, this describes the size of the LV geometry. RWT is the most common echocardiographic measure for estimating the risk of ventricular arrhythmias. Coronary Computed Tomography Angiography (CCTA) can also provide three-dimensional volumetric information on the cardiac chambers, especially assessing the left ventricular (LV) space

Objective: To determine the value of the diagnostic test for measuring the relative wall thickness of the left ventricle, which was measured using two modalities, namely coronary computed tomography angiography and echocardiography

Research Methods: This research is a cross sectional study. Sampling was carried out retrospectively. Data were obtained from 567 patients who underwent CCTA examination and echocardiography during January 2020 to June 2021. Then the patient data was traced back to a history of congenital abnormalities, a history of diabetes mellitus, hypertension and heart surgery. Finally, a number of 32 patients were obtained as samples.

Results: The mean interventricular septal thickness based on CCTA and on echocardiography, posterior wall thickness and RWT did not show a significant difference, or p value > 0.01 . Left ventricular inner diameter (LVID) has a p value = 0.001 and this is the only significant difference. The value of sensitivity, specificity and accuracy is only 62.5%, meaning that the ability to assess RWT on CCTA according to the gold standard echocardiography is only 62.5%

Conclusion: Comparing the value of the relative wall thickness of the left ventricle through CCTA examination and echocardiography examination, there is no equality, the accuracy value is only 62.5%. Of the several parameters measured, only LVID has a p value < 0.05

Keywords: LV, CCTA, RWT, Echocardiography