Korelasi antara Coronary Artery Calcium Score pada CT Jantung dan Duke Treadmill Score pada Pasien
Angina Pektoris Stabil
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KORELASI ANTARA *CORONARY ARTERY CALCIUM SCORE* PADA CT JANTUNG DAN DUKE *TREADMILL* SCORE PADA PASIEN ANGINA PEKTORIS STABIL

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ABSTRAK

Latar Belakang: Angina pektoris stabil merupakan manifestasi penyakit arteri koroner akibat ketidakseimbangan suplai dan kebutuhan oksigen miokard. *Coronary Artery Calcium* (CAC) *Score* pada CT jantung mencerminkan beban aterosklerosis koroner, sedangkan *Duke Treadmill Score* (DTS) menggambarkan risiko berdasarkan respons fungsional selama uji latih. Hubungan antara kedua parameter tersebut penting untuk memahami kesesuaian penilaian anatomi dan fungsional pada pasien angina pektoris stabil.

Metode: Penelitian analitik observasional korelatif dengan desain potong lintang menggunakan data sekunder retrospektif pasien angina pektoris stabil yang menjalani CT jantung non-kontras untuk penilaian CACS dan *stress test treadmill* dengan DTS di RSUP Dr. Sardjito Yogyakarta periode Januari-Desember 2025. Sampel diambil secara *consecutive sampling*. Korelasi CACS dan kategori risiko DTS dianalisis menggunakan uji Spearman, dilanjutkan korelasi parsial untuk menilai pengaruh usia, jenis kelamin, status gizi, diabetes, hipertensi, dislipidemia, dan merokok.

Hasil: Sebanyak 44 subjek memiliki rerata usia 59,9±7,7 tahun dan didominasi laki-laki (77,3%). Seluruh subjek mengalami hipertensi, 81,8% dislipidemia, 52,3% merokok, dan 27,3% diabetes. CACS menunjukkan korelasi positif lemah dengan kategori risiko DTS, tetapi belum signifikan secara statistik (r = 0,285; p = 0,061). Setelah kontrol usia, status gizi, diabetes, dislipidemia, dan merokok, korelasi meningkat dan menjadi signifikan (r = 0,319–0,376; p = 0,013–0,037). Setelah kontrol jenis kelamin, korelasi tetap lemah dan tidak signifikan (r = 0,227; p = 0,143), sedangkan hipertensi tidak dapat dianalisis karena tidak memiliki variasi.

Kesimpulan: Terdapat korelasi yang signifikan dengan arah positif berkekuatan lemah antara *Coronary Artery Calcium Score* (CACS) pada CT jantung dan *Duke Treadmill Score* (DTS) pada pasien angina pektoris stabil. Faktor usia, jenis kelamin, status gizi, diabetes, dislipidemia, dan merokok didapatkan secara signifikan memengaruhi korelasi antara CAC dan DTS.

Kata kunci: *Angina, Stable*; *Coronary Artery Disease*; *Exercise Test*; *Tomography, X-Ray Computed*; *Vascular Calcification*.

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CORRELATION BETWEEN CORONARY ARTERY CALCIUM SCORE ON CARDIAC CT AND DUKE TREADMILL SCORE IN PATIENTS WITH STABLE ANGINA PECTORIS

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ABSTRACT

***Background**: Stable angina pectoris is a manifestation of coronary artery disease resulting from an imbalance between myocardial oxygen supply and demand. The Coronary Artery Calcium Score (CACS) derived from cardiac CT reflects the burden of coronary atherosclerosis, whereas the Duke Treadmill Score (DTS) characterizes risk based on functional response during exercise testing. Understanding the relationship between these two parameters is crucial for assessing the concordance between anatomical and functional evaluations in patients with stable angina pectoris.*

***Methods**: This was a correlational observational study with a cross-sectional design, utilizing retrospective secondary data from patients with stable angina pectoris who underwent non-contrast cardiac CT for* CACS *assessment and treadmill stress testing with DTS at Dr. Sardjito General Hospital, Yogyakarta, between January and December 2025. Subjects were selected via consecutive sampling. The correlation between* CACS *and DTS risk categories was analyzed using the Spearman test, followed by partial correlation analysis to evaluate the influence of age, sex, nutritional status, diabetes, hypertension, dyslipidemia, and smoking.*

***Results**: The study included 44 subjects with a mean age of 59.9 ± 7.7 years, predominantly male (77.3%). All subjects had hypertension; 81.8% had dyslipidemia, 52.3% were smokers, and 27.3% had diabetes.* CACS *showed a weak positive correlation with DTS risk categories, though this did not reach statistical significance (r = 0.285; p = 0.061). After controlling for age, nutritional status, diabetes, dyslipidemia, and smoking, the correlation strengthened and became statistically significant (r = 0.319–0.376; p = 0.013–0.037). After controlling for sex, the correlation remained weak and non-significant (r = 0.227; p = 0.143), whereas the effect of hypertension could not be analyzed due to a lack of variation in the data.*

***Conclusion**:* CACS *shows a trend toward a weak positive correlation with DTS risk categories in patients with stable angina pectoris, but the correlation is not statistically significant. Several clinical factors influence the strength of this relationship, therefore, the interpretation of* CACS *and DTS requires a comprehensive assessment of the patient's risk profile.*

***Keywords**: Stable angina; Coronary artery disease; Exercise test; X-ray computed tomography; Vascular calcification.*