



IMAGING AND DIAGNOSTIC TESTING

EPICARDIAL FAT VOLUME NORMAL LIMITS USING NON-CONTRAST ENHANCED CARDIAC COMPUTED TOMOGRAPHY IN A HEALTHY POPULATION

ACC Poster Contributions

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Background: Epicardial fat volume (EFV) quantified on non contrast cardiac computed tomography is associated with risk of cardiovascular events, although normal limits have not been defined.

Methods: We retrospectively analyzed 120 asymptomatic, non diabetic patients (32 men, mean age 57.6 ± 7.2 years) without cardiac disease with coronary calcium score of 0. Patients had low density lipoprotein < 160 mg/dL, triglycerides < 500 mg/dL, and a 10 year cardiovascular event risk of $\leq 6\%$ by Framingham risk score (FRS). EFV was quantified by a blind reader using validated software (Fig 1a) and indexed to body surface area (BSA). EFV distribution was found to be non-Gaussian, and the nonparametric Wilcoxon rank sum and Kruskal-Wallis tests were used to compare EFV between groups.

Results: Mean BSA was 1.9 ± 0.2 m². EFV was correlated to BSA ($r=0.36$, $p<0.0001$). Median indexed EFV was 34.3 cm³/m² (95% CI 31.8-38.3 cm³/m²). Minimum, 25th and 75th percentiles, and maximum values were 12.3, 25.6, 47.6 and 96.6 cm³/m², respectively. The 95th percentile was 68.3 cm³/m². No statistically significant differences in EFV were found between genders and quartiles of age and FRS ($p=0.37$, 0.11 and 0.44, respectively, Fig 1b).

Conclusions: In a low risk population without coronary calcification, indexed EFV ranged from 12.3 to 96.6 cm³/m² with a median value of 34.3 cm³/m². EFV was not related to gender, age and standard cardiovascular risk factors but was related to BSA. We suggest considering 68.3 cm³/m² as the upper normal limit for EFV.

Fig 1a



Fig 1b

