ACC.15
TCT@ACC-i2 | innovation in intervention

A1157
JACC March 17, 2015
Volume 65, Issue 10S

Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

CLINICAL RELEVANT EXTRACARDIAC FINDINGS ON NON-CONTRAST ENHANCED CARDIAC COMPUTED TOMOGRAPHY IN THE GENERAL POPULATION: THE HEINZ NIXDORF RECALL STUDY

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 3:45 p.m.-4:30 p.m.

Session Title: Non Invasive Imaging: CT/Multimodality, Angiography, and Non-CT Angiography
Abstract Category: 16. Non Invasive Imaging: CT/Multimodality, Angiography, and Non-CT Angiography
Presentation Number: 1136-022

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Background: The prevalence of clinical relevant extracardiac findings (ECF) on cardiac computed tomography (CT) scans in the general population is still not described.

Methods: Participants aged 45-75yrs from the prospective population-based Heinz Nixdorf Recall Study were studied by non-contrast enhanced cardiac electron-beam CT for quantification of coronary artery calcification. Experienced radiologists, blinded for subject characteristics, evaluated all CT scans concerning the presence of ECF. Those which met previously defined criteria of "clinical relevant" were included for subsequent analysis.

Results: Within 4609 subjects (mean age 59.7±7.8yrs, 49.5% male), 207 (4.5%) subjects had a total of 352 ECF (Table 1). Prevalence of ECF increased with age group (45-54yrs: 39/1417 findings [2.8%], 55-64yrs: 74/1815 (4.1%), ≥65yrs: 93/1377 (6.8%), p<0.0001 for trend). No sex-specific difference for the prevalence of ECF was found (men 2.5% vs. women 2.0%, p=0.114). Multiple ECF appeared as followed: 2 ECF in 38 (0.8%), 3 ECF in 8 (0.2%) and ≥4 ECF in 19 (0.4%) subjects. Overall, 162 tumor-suspected lesions were found in 81 participants (1.8%) whereas 85.7% of the pulmonary and 38.0% of the extrapulmonary lesions were rated as definitively or potentially malignant.

Conclusion: Clinical relevant ECF on cardiac CT are common in the general population. Beyond cardiac examination, cardiologists may acquire skills of ECF, which is an interdisciplinary challenge in corporation with radiologists.

Table 1: Amount and distribution of the most frequent clinical relevant extracardiac findings (ECF) on non-contrast enhanced cardiac electron-beam CT in participants of the Heinz Nixdorf Recall Study (n=4609, 49.5% men)

	Frequency of subjects: absolute (relative)
Subjects with ECF	207 (4.5%)
Single ECF	142 (4.3%)
Multiple ECF	65 (1.4%)
Distribution of ECF	
Tumor-suspected lesions	81 (1.8%)
Single tumor-suspected lesion	53 (1.2%)
Multiple tumor-suspected lesions	28 (0.6%)
Distribution of tumor-suspected lesions	
Lung	54 (1.2%)
Liver	16 (0.3%)
Lymph nodes	11 (0.2%)
Breast	5 (0.1%)
Mediastinum	3 (0.1%)
Kidney	2 (0.04%)
Enlargement of the thoracic aorta	64 (1.4%)
Ectasia of thoracic aorta (3.8cm ≤ diameter <4.5cm)	25 (0.5%)
Aneurysm of thoracic aorta (diameter ≥4.5cm)	39 (0.9%)
Structural pulmonary diseases	44 (1.0%)
Large hiatal hernia	12 (0.3%)
Esophageal disorders	5 (0.1%)
Pleural effusion	4 (0.1%)