Assessment of Coronary Artery Calcification on Non-Gated Conventional CT Scans
Using Artificial Intelligence Integration

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Background

- **Coronary Artery Calcification** (CAC) is a widely used method for evaluating the extent of coronary artery disease.
- Recent advancements in **Artificial Intelligence** (AI) technology have led to the development of an automatic CAC scoring software applied on standart chest CT scans.
- **The objective** of this study was to assess **the impact of AI-based CAC measurements**.

Methods

- We used the **Nanox AI HealthCCSng** (FDA cleared) software to estimate CCS category from non-gated, non-contrast chest CT scans. Qualitative assessment was performed by two radiologists **who reviewed each case** and adjudicated any **categorization provided by the software**.
- Patients were categorized by HealthCCSng into three groups: **Low** (CAC 0-99), **Moderate** (CAC 100-399) and **Severe** (CAC > 400). Patients with prior myocardial infarction, coronary intervention, coronary artery bypass graft, and metal artifacts were excluded.

Results

- 436 consecutive patients undergoing chest CT between January and July 2023 were enrolled in the study. 110 patients were excluded (78 without access to medical history and 32 who had died), while **101 out of 326 patients (31%) had a Severe CAC**, 88 patients (27%) had a Moderate CAC, and 137 patients (42%) had a Low CAC (Figure).
- Patients with **High CAC** category were referred to **specialized preventive cardiology clinics** for further evaluation and treatment, while patients with **Low and Moderate CAC** category were referred to **Primary Care Physician** for further evaluation and optimization of medical therapy.

Conclusions

- This ongoing study indicates that CAC quantification using the **Nanox AI HealthCCSng** software on routinely performed chest CT scans **can identify patients who may benefit from preventive cardiology services.**
- Through the use of the **Nanox.AI** software we were able identify **101 (31%) new patients with Severe Coronary Artery Calcium** who were previously unknown to the health system and were scheduled to visit the preventive cardiology clinic.

436 Patients **met inclusion criteria** (Non-ECG gated and non-contrast chest CT)

110 Patients **were excluded**
*78 Patients without access to medical history.
*32 Patients had died.

326 **100%** Patients **were included**

137 **42%** Patients with **LOW** CAC result (Calcium Score 0-99)

88 **27%** Patients with **MODERATE** CAC result (Calcium Score 100-399)

101 **31%** Patients with **SEVERE** CAC result (Calcium Score >400)

Primary Care Physician

Outpatient Preventive Cardiology Clinic