

## **Progression of Coronary Artery Calcification is Associated with Long Term Cardiovascular Events in Hypertensive Adults**

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### **Introduction:**

Coronary artery calcification (CAC) is an independent predictor of cardiovascular (CV) events in hypertensive adults.

The additive clinical value of serial CAC measurements for risk stratification is not clear.

### **Aim:**

We aimed to find whether CAC progression predicts long term CV events in hypertensive patients.

### **Methods:**

The study group included 210 patients (mean age  $64 \pm 5.6$  years, 54% male), a subgroup of 544 participants in the calcification side arm of the INSIGHT (International Nifedipine Study Intervention as Goal for Hypertension Therapy). All were free of symptoms or known CV disease, had at least two CT scans one year apart, and had available long-term follow-up. Progression of CAC was defined as the absolute change in CAC score between maximal score during follow-up and baseline score. The endpoint was the first CV event after the last CT scan. Three categories of CAC progression were defined. Zero progression – was defined as "non-progressors", and progression below and above the median of maximal progression were defined as "slow progressors" and "rapid progressors" respectively.

### **Results:**

During 15 years of follow up (mean  $11.4 \pm 4.4$ ) 83 patients experienced first CV event. The rate of events was higher in rapid 29/59, (49%), and slow 36/78 (46%) than in non progressors 18/73 (25%); ( $p=0.005$ ). Compared with non-progressors, the adjusted hazard ratio for CV events was 1.9 (95% CI; 1.05-3.47) in the slow, and 2.13 (95% C.I; 1.12-4.03) in the rapid progressors.

### **Conclusion:**

Progression of CAC is associated with long term CV events in hypertensive patients.