

**TEN YEAR PROGRESSION OF CORONARY ARTERY, CAROTID ARTERY AND AORTIC CALCIFICATION IN PATIENTS WITH RHEUMATOID ARTHRITIS**

*K.H. Yiu<sup>1</sup>, J.H. Liu<sup>1</sup>, M.Y. Ng<sup>1</sup>, T. Cheung<sup>1</sup>, H.Y. Chung<sup>1</sup>, Y. Chen<sup>1</sup>, Z. Zhen<sup>1</sup>, Y. Zou<sup>1</sup>, K.F. Mak<sup>1</sup>, P.L. Khong<sup>1</sup>, C.S. Lau<sup>1</sup>, H.F. Tse<sup>1</sup>*

<sup>1</sup>Queen Mary Hospital, Department of Medicine - Hong Kong - Hong Kong SAR People's Republic of China,

**BACKGROUND:** Rheumatoid arthritis (RA) is associated with increased vascular calcification, although the rate of progress of calcification is uncertain.

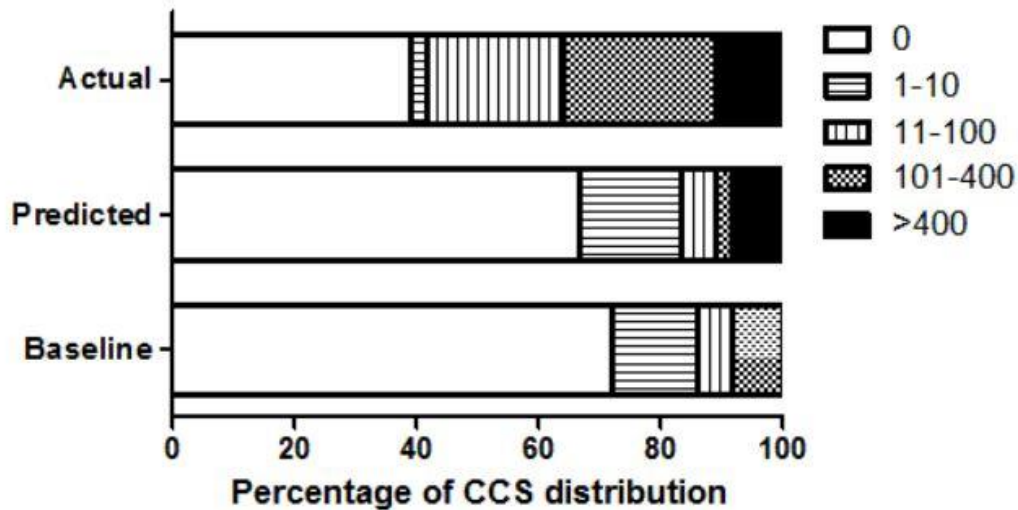
**PURPOSE:** The aim of the study was to evaluate the progression of and the predictors for calcification in the coronary and carotid arteries and aorta over 10 years. The 10-year actual coronary calcium score (CS) and 10-year predicted coronary CS, based on the pattern of the general population, was compared.

**METHODS:** Calcification of the coronary and carotid artery and the aorta was assessed by multi-detector computed tomography. Significant CS progression was calculated by the “SQRT method”. The 10-year predicted coronary CS was based on the mathematical formula derived by the Heinz Nixdorf Recall Study.

**RESULTS:** A total of 49 patients (54±11 years, 90% female) had a follow-up scan after 10.0±0.2 years. The CS in all vascular beds was significantly increased and 55%, 29% and 80% of patients had significant progression of CS in the coronary and carotid artery and aorta, respectively. Age and systolic blood pressure (SBP) were independently associated with calcification progression in all vascular beds. Importantly, the absolute increase in 10-year actual coronary CS was significantly higher than that predicted.

**CONCLUSION:** In patients with RA, calcification in all vascular beds significantly increased over 10 years and was independently associated with age and SBP. Importantly, the absolute increase in 10-year actual coronary CS progression was significantly higher than that predicted.

**Figure 1: Percentage of coronary calcium score (CS) distribution at baseline, 10-year predicted and 10-year actual.**



Abbreviations: CAC = coronary artery calcification