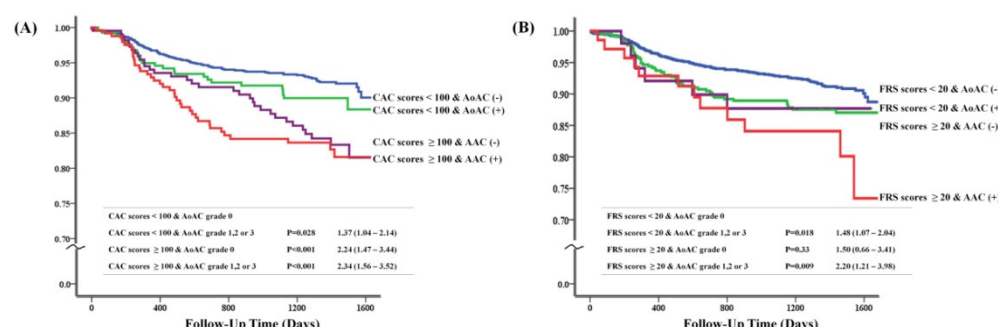


The predictive value of aortic arch calcification on chest X-ray for cardiovascular events

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Objective: This study investigated the predictive value of AoAC compared with CAC and the Framingham risk score (FRS) in coronary artery disease (CAD) and for the associated adverse events. **Background:** The coronary artery calcium (CAC) and aortic arch calcification (AoAC) are individually associated with cardiovascular disease and outcome. **Methods:** A total of 2,018 stable angina patients who underwent chest X-ray and cardiac multi-detector computed tomography were followed up for 4 years to assess adverse events, which were categorized as cardiac death, stroke, myocardial infarction, or repeated revascularization. The extent of AoAC on chest X-ray was graded on a scale from 0-3. **Results:** During the 4 years of follow-up, 620 patients were treated by coronary stenting and 153 (7%) adverse events occurred. A progressively higher grade of AoAC was associated with a higher CAC score or FRS. Cox regression showed that the FRS and CAC score, but not AoAC, were associated with adverse events. In patients with a FRS <20 or a CAC score <400, AoAC showed an additive predictive value for detecting significant CAD. A gradual increases in the risk of adverse events were noted if AoAC was present in patients with similar CAC score or FRS (Figure). **Conclusions:** Although the CAC score is a powerful predictor of adverse events, evaluation of AoAC could be valuable for predicting significant CAD in low- to intermediate-risk probability patients assessed by FRS



Venous Thromboembolism in the Modern Era: Predisposing Factors, Treatments and Clinical Outcomes

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Background: Venous thromboembolism (VTE) that includes deep vein thrombosis (DVT) and pulmonary embolism (PE) is a commonly encountered cardiovascular problem in patients with various medical or surgical comorbidities. Because of recent advances in diagnostic imaging for early detection of VTE and use of novel oral anticoagulants (NOACs), it is needed to explore current epidemiology, prescription patterns and clinical outcomes in patients with VTE. **Methods:** From January 2015 to December 2015, 380 consecutive patients (49.5% men, mean age 64.1±14.2), who were newly diagnosed with VTE by any diagnostic imaging modalities, were identified retrospectively in a single tertiary hospital. The baseline characteristics, predisposing factors, treatments and clinical outcomes were investigated. Clinical outcomes included admission rates, median hospital stay, in-hospital mortality and 1-year mortality. Result: About one third of overall VTE patients (262, 69.7%) had active cancer. 104 (27.4%) patients had other risk factors including marked immobilization, prior surgery and trauma. However, 40 (10.5%) patients presented unprovoked VTE. 332 (76.7%) patients presented with PE and 149 (39.2%) had DVT. Among patients with PE, minimal PE was more prevalent especially in cancer patients (201, 94.8%) than in non-cancer unprovoked (22/40, 55.0%) or in non-cancer provoked (56/104, 53.8%) PE. In terms of initial treatment strategies, 176 (46.3%) patients were treated with NOACs, while 86 (22.6%) patients with unfractionated heparin, 73 (19.2%) patients with low molecular weight heparin, 8 (2.1%) patients with warfarin and 27 (7.1%) patients were treated by an inferior vena cava placement. Patients with active cancer showed significantly poorer clinical outcomes than other groups (2.5% of unprovoked VTE vs. 6.7% of non-cancer provoked vs. 32.6% of cancer, $p<0.001$). **Conclusions:** With advances of diagnostic imaging techniques and developments of novel anticoagulants, the incidence of minimal PE is high, especially in cancer patients. A half of VTE patients were initially treated with NOACs. One-year clinical outcomes are favorable in non-cancer patients but not in cancer patients.