QRS DURATION, CARDIAC REMODELING AND RISK OF INCIDENT HEART FAILURE IN AN ELDERLY COHORT: THE CARDIOVASCULAR HEALTH STUDY

Poster Contributions
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Background: QRS duration (QRSd) is associated with incident heart failure (HF) and cardiac structure and function in young and middle-aged cohorts. Data exploring these relationships are sparse in the elderly.

Methods: We analyzed baseline ECGs in the CHS cohort for QRSd after exclusions including prevalent HF. We analyzed associations between QRSd, defined as <100, 100-119, ≥120 msec and continuously, and incident HF after adjusting for demographics, clinical covariates, and echo parameters of structure and function. Cox regression was used to describe the association between QRSd and incident HF. Kaplan-Meier plots were created using categories of QRSd and QRSd dichotomously (≤100 msec vs. >100 msec).

Results: Among 3276 eligible participants (mean age 72.3±5.3 years), 963 developed HF (median follow-up 12.9 years). Increased QRSd was associated with greater LV mass by echo, LV diastolic dimension, male sex, greater prevalence of diabetes, and anti-hypertensive medications. QRSd was associated with incident HF, especially with QRSd>120 msec, even after adjustment for clinical covariates and echo measures of cardiac structure and function. No significant race-sex interaction was found.

Conclusion: A QRS duration ≥120 msec is strongly associated with incident HF in CHS, while an intermediate QRS duration (QRS 101-119 msec) is not. QRSd may be an electrical marker of LV mass, chamber size, and EF, which may predispose to HF risk.