QRS DURATION ON ELECTROCARDIOGRAPHY AND CARDIOVASCULAR MORTALITY: INSIGHTS FROM NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY-III

Moderated Poster Contributions
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Session Title: Arrhythmias: Utilility of ECG for Patients at Risk of SCD
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Background: The relationship of QRS duration, specifically of RBBB, to cardiovascular (CV) mortality in the general population is unclear. We assessed the prognostic significance of increased QRS duration and its role in predicting CV mortality in general population.

Methods: Our study sample consisted of adults >40 yo with EKG available, enrolled into NHANES III, a self-weighting sample representative of a US population of 74,062,796 individuals with a follow-up period of 106,244.6 person-years. Exclusions were missing mortality or QRS duration data. All ECGs were classified by the Minnesota coding. CV mortality was based on ICD-10, linked to the National Death Index.

Results: A total of 1,433 CV deaths occurred during the study period. After adjusting for multiple risk factors, both LBBB and RBBB were significantly associated with increased CV mortality (HR 2.44, 95% CI 1.26-4.73, p=0.009) and (HR 1.90, 95% CI 1.19-3.02, p=0.008), respectively (Figure 1). Similar results were obtained after excluding patients with CAD and its equivalent (p<0.01). Each 10 ms increment in QRS duration was associated with higher CV mortality (HR 1.10, 95% CI 1.04-1.16, p=0.001). The addition of the QRS duration to the Framingham Risk Score model led to 4.4% overall net reclassification improvement (p< 0.001).

Conclusions: Increased QRS duration was found to be an independent predictor of CV mortality in this cross-sectional study. Addition of QRS duration to traditional risk factors resulted in improved CV risk prediction.