SPATIAL QRS-T ANGLE PREDICTS MORTALITY IN CHRONIC DIALYSIS PATIENTS

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Tuesday, March 16, 2010, 9:30 a.m.-10:30 a.m.

Session Title: ECG - Risk Stratification for Clinical Events
Abstract Category: ECG/Ambulatory Monitoring Signal Averaging
Presentation Number: 1244-132

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Background: Cardiovascular disease largely contributes to mortality in dialysis patients. Assessing the predictive value of CV parameters is therefore highly relevant, but has proven to be difficult. In several non-dialysis patient groups, the spatial QRS-T angle has shown to have predictive value for CV and all-cause mortality. The aim of this study was to assess the predictive value of an abnormal spatial QRS-T angle in dialysis patients.

Methods: In our university hospital all patients who initiated dialysis therapy between 2002 and 2009 were identified. Those patients who were at least 90 days on dialysis and who had a routine ECG available were included. The VCG was approximated from the 12-lead ECG using a computer algorithm and the spatial QRS-T angle was calculated. Finally its predictive value for all-cause mortality was assessed. An abnormal QRS-T angle was defined as > 130 in men and > 116 in women.

Results: A total of 75 patients (52 male, avg. age 61 ± 16) were included. During an avg. follow-up of 680 ± 490 days 29 (39%) patients died (7 due to CV causes). Survival was significantly higher in patients with a normal spatial QRS-T angle compared to an abnormal angle (fig 1). In Cox proportional hazards model adjusted for age and gender, an abnormal QRS-T angle was associated with a significantly higher risk of death from all causes (HR 2.63, 95% CI 1.25 - 5.55, p=0.011)

Conclusions: In a population of chronic dialysis patients the spatial QRS-T angle is a significant and independent predictor of all-cause mortality.