JTc PROLONGATION PROVIDES ADDITIONAL PROGNOSTIC INFORMATION FOR LIFE THREATENING ARRHYTHMIAS IN PATIENTS WITH QRS PROLONGATION

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BACKGROUND
Prolonged QRS interval reflecting conduction disease is a well-recognized marker of mortality and cardiac arrhythmias. Patients with repolarization abnormalities usually have been excluded in analyses of patients with prolonged QRS duration. We hypothesize that JTc prolongation can be used as a biomarker to identify patients with prolonged QRS at high risk for sudden cardiac death and mortality.

METHODS
Patients >18 years with an electrocardiogram and echocardiogram at initial encounter between 11/2011 and 12/2016 with follow-up of ≥1 year were included. Based on JTc interval and QRS duration, patients were divided into 6 groups and ventricular fibrillation (VF), cardiac arrest (CA) and mortality during follow-up were determined. Baseline characteristics were compared with Pearson's chi-squared test (Table 2). Multivariate logistic regression was used to identify independent predictors for VF, CA and mortality. Pts with underlying conduction system disease and paced rhythm were included in study.

RESULTS
In all, 29700 patients were divided into 6 groups. VF, CA and overall mortality for each group is shown in Figure 1. Median follow-up was 3.7 years. For each QRS group, JTc prolongation increased the risk for VF, CA and overall mortality. Multivariate logistic regression showed JTc ≥ 350 ms as the strongest predictor of VF/CA (Figure 2). Adding JTc to EF ≤ 35 % increased the area under the curve (AUC) for VF/cardiac arrest from 0.69 to 0.78. Combining JTc & QRS to EF ≤35 % further increased the AUC to 0.83 (Table 2).

CONCLUSIONS
In patients with QRS prolongation, a risk factor for increased mortality, JTc prolongation provides incremental prognostic information in identifying those at risk for VF/cardiac arrest and mortality and should be routinely reported in this population.