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## Risk of life-threatening ventricular tachyarrhythmia events in diabetes patients with higher ejection fraction in MADIT-CRT

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**Background:** Data on the risk of life-threatening ventricular tachyarrhythmia events in diabetes patients with mild heart failure (HF) and higher ejection fraction (LVEF) are not currently known.

**Objective:** We aimed to assess the risk of life-threatening ventricular tachyarrhythmia events in mild HF patients with diabetes in patients with baseline LVEF  $\leq 30\%$  or  $>30\%$ .

**Methods:** We evaluated the risk of life-threatening VT/VF treated with shock in mild HF patients with diabetes, by those with LVEF  $\leq 30\%$  or  $>30\%$ , enrolled in MADIT-CRT. Kaplan-Meier analysis and multivariate adjusted Cox regression models were utilized.

**Results:** Out of 542 mild HF patients with diabetes and VT/VF data, 206 (38%) had LVEF  $>30\%$  and 336 (62%) had LVEF  $\leq 30\%$ . The 5-year cumulative probability of VT/VF treated with shock was 15% in patients with diabetes LVEF  $>30\%$  as compared to the 15% probability in patients with

diabetes and LVEF  $\leq 30\%$  ( $p=0.342$  for the overall difference in event rates during follow-up) (Figure). In Cox models, the risk of VT/VF treated with shock was similar in diabetes patients with LVEF  $>30\%$  and LVEF  $\leq 30\%$  (HR=0.88, 95% CI= 0.51–1.53,  $p=0.647$ ) after adjustment for age, ischemic etiology, prior ventricular or atrial arrhythmia, and CRT-D-LBBB interaction. The risk of VT/VF treated with shock was similar regardless of LVEF in both CRT-D patients (HR=1.09,  $p=0.830$ ) and ICD only patients (HR=0.67,  $p=0.345$ ).

**Conclusion:** Diabetes patients with an LVEF  $>30\%$  are at similarly high risk of life-threatening ventricular tachyarrhythmias to patients with LVEF  $\leq 30\%$ . Our findings highlight the need for further investigation and treatment of this uniquely high-risk patient cohort with a higher ejection fraction.

