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The Impact Of PREPARE-Based Programming Of cardiac defibrillators On the Therapy Delivery Burden

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Background: The PREPARE trial showed that a pre-specified strategic profile of VT/VF detection and therapy settings reduced the number of appropriate and inappropriate therapies in primary prevention patients with ICD's of a single manufacturer. We sought to verify their findings in patients with ICD's of four different manufacturers.

Methods: Over the last two years, we applied PREPARE-based settings ("translated" to parameters of the various manufacturers) in most primary prevention patients. Records of all patients implanted for primary prevention since 1/2005 were reviewed and the incidence of both appropriate and inappropriate therapies were compared.

Results: 206 patients [115 PREPARE programming (p), 91 non PREPARE programming (non-P)] were included. There were no differences between groups in mean age, ejection fraction, type of device (VVI/DDD/CRTD), gender, NYHA class, and history of supraventricular arrhythmias other then atrial fibrillation. Patients with P programming were implanted more frequently due to the MADIT II indication (83.3% Vs. 60.5%, P< 0.001)and were more likely to have permanent a-fib (16.5% Vs. 6.1%, P=0.016). Follow up period was longer for patients with non-P programming- 785+436 vs. 210+170 days (P<0.0001). Over the entire follow up period there were no episodes of appropriate or inappropriate therapies in P patients (figure). Overall, 40 combined episodes occurred in the non-P (18 inappropriate, 22 appropriate, of them 10 inappropriate and 12 appropriate shocks). 21 of these events (53%) occurred within the first year. Five patients died, all in the non-P group.

Conclusions: In patients implanted with ICD's of all major manufacturers programmed according to P settings, the combined rate of inappropriate and appropriate therapies was zero over a mean follow up of 210.7 days. Despite different follow up duration, there was a clear advantage to the P programming with dramatic therapy reduction without an increase in mortality.