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Abstract 2

Anxiety and Type D Personality in ICD Patients: Impact of Shocks

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Quality of life in patients with implantable cardioverter-defibrillators (ICDs) may be impacted by the occurrence of ICD shocks. Although shocks may be life-saving, approximately one-third of patients with ICDs may experience inappropriate shocks. In an observational study of ICD patients, we are testing levels of anxiety and performing a randomized trial of cognitive behavior therapy in patients with moderate-high anxiety. We report here results of an interim analysis of anxiety levels in the first subjects enrolled in this study, testing the hypothesis that anxiety is higher in subjects with non-life-saving ICD shocks.

Methods: Consenting patients presenting to an outpatient ICD clinic completed Beck Anxiety Inventory (BAI) and Type D personality scale (DS14) questionnaires. Type D personality was defined as scoring ⩾ 10 on both negative affectivity (NA) and social inhibition (SI) components of the DS14 scale. Clinical data were collected, including arrhythmia, ICD, and shock data. Data were analyzed using standard parametric and nonparametric statistics.

Results: Among 263 subjects (mean age 62.0 ± 15.1 yrs, 73% male, LVEF 31.9 ± 14.0%), 10% had ICDs implanted for secondary and 89% for primary prevention indications, and 52.7% had CAD. With average time since first ICD implant averaging 4.4 ± 7.6 years, 24.5% perceived having experienced ICD therapies that were life-saving and 16.7% ICD shocks that were non-life-saving (4.5% had shocks for sinus tachycardia and 9.4% for atrial fibrillation). The average total number of shocks experienced was 2.6 ± 7.6 (range 0–71); appropriate shocks averaged 1.4 ± 6.0 (range 0–70), and inappropriate shocks 0.97 ± 4.2 (range 0–50). Recent shocks (within the 4 weeks prior to enrollment) had been experienced in 3.7%. Malfunctioning of the ICD system had been experienced by 3.3%. History of anxiety was reported in 18.8% (10.6% reported current anxiety), and 19.6% had a family history of anxiety. ICD indication was not associated with significant differences in BAI or DS14 scores. Patients who had experienced life-saving ICD shocks were less socially inhibited (SI scores 5.40 ± 5.62 vs 7.80 ± 6.10, $P = 0.015$) but showed no significant difference in NA or BAI scores. Non-life-saving shocks were associated with a trend toward higher BAI scores (8.94 ± 8.48 vs 6.51 ± 7.05, $P = 0.082$). The number of inappropriate shocks correlated with BAI, NA, and SI scores (Pearson correlation coefficients 0.148, 0.179, and 0.214, and P values 0.022, 0.006, and 0.001, respectively). History of ICD malfunction was associated with a trend toward higher BAI scores (14.00 ± 7.26 vs 6.96 ± 7.32, $P = 0.086$). A shock within the past 4 weeks was associated with significantly higher SI (14.00 ± 6.54 vs 6.93 ± 5.96, $P = 0.005$) and BAI (13.17 ± 9.02 vs 6.66 ± 7.12, $P = 0.03$) scores.

Conclusions: ICD function significantly impacts anxiety and Type D personality (negative affectivity and social inhibition) scores. Recent or inappropriate shocks, as well as ICD malfunction, may affect quality of life in ICD patients due to anxiety. In contrast, life-saving shocks are associated with less social inhibition. These observations may guide clinicians in better screening for and treatment of comorbid anxiety in ICD patients.

* BHBI = Bakken Heart-Brain Institute