Misconception in patients with cardiovascular implantable electronic device as a factor of anxiety and depression – how to design optimal educational approach?

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Purpose: The aim of this study is to assess the level of knowledge of safety and awareness about daily living in patients with cardiac implantable electronic devices (CIED) and potential impact upon anxiety and depression.

Methods: Data were collected in consecutive patients visiting pacemaker clinic for regular CIED follow-up. Demographic, clinical and psychological data were collected: Hospital Anxiety and Depression Scale-Modified (HADS-M) and a custom self-reported questionnaire was used (CIED-SRQ, 18 questions regarding daily activities, medical procedures and the safe use of electronic devices) to assess the knowledge regarding CIED. Dedicated questions referred to the preferences for CIED education channels in various age groups.

Results: We studied 186 patients (36.6% women, mean age 66.7±10.8) with CIED (63.5% pacemaker, 17.7% cardioverter defibrillator, 18.8% cardiac resynchronization therapy) in their first year following the implantation. In the CIED-SRQ the mean score of correct answers related to knowledge of CIED 13.25±2.86 (with 18 as the maximum possible score). The knowledge of CIED was correlated with the patients’ level of education (p<0.001) and inversely correlated with age (rho=−0.443; p<0.001). In the anxiety subscale of HADS-M, normal scores were noted in 75.8% patients, 13.5% cases were borderline, and abnormalities were observed in 10.7% patients. In the depression subscale, 70.4% were recognized as normal, 21.5% as borderline, and 8.1% as abnormal. As the knowledge of patients about CIED increased, there was a significant decrease in their depression level (rho=−0.149; p=0.042) and in the anxiety level (rho=−0.193; p=0.008). Anxiety level was higher in patients with CIED experiencing complications from the implantation (15.6% of patients in total experienced complications), both the mild (hematoma, bruising) and the severe (tamponade, lead dislocation, pneumothorax), when compared to the group without complications (p<0.001). Conversely, no statistically significant difference between these groups was found as to their level of depression (p=0.051). The younger patients (<64 years) were more often in favour of remote education on CIED (p=0.025), while the elder (≥65 years) most often preferred to be personally informed by the attending physician.

Conclusions: Lack of information and misinformation in patients with CIED may result in self-imposed restrictions, which could in turn result in higher levels of anxiety and depression. Patients experiencing CIED complications should be offered increased psychological care as well as more intense education about CIED, due to higher anxiety levels. Age influences the preferences for CIED education channels, thus educational approach must be individualized and age-appropriate. These findings may help health care professionals to provide holistic care to help patients manage to live with CIED and optimize postprocedural quality of life.