

Implantable cardioverter-defibrillator therapies are associated with increased incidence of depression and mortality

Dear Editor,

We read the article about an association between depression and all-cause mortality in patients with congestive heart failure and cardiac devices published by Pushkarev et al.^[1] with great interest. Patient groups with and without depression had similar baseline characteristics in the study and it was reported that depression was associated with all-cause mortality in patients with cardiac implantable electronic devices (CIED) implanted due to heart failure.

It has been shown in many studies that implantable cardioverter-defibrillator (ICD) therapies (anti-tachycardia pacing and shock) increase mortality rates in patients with CIED implanted for both primary and secondary prophylaxis. Bazoukis et al.^[2] reported that ICD therapies led to a significant increase in all-cause mortality rates in patients with heart failure. ICD shocks are a painful therapy, and as Seligman et al.^[3] demonstrated in dogs, unavoidable painful stimulus can lead to “learned helplessness” in patients. It can cause behavioral changes, which may then provoke anxiety disorders and depression. In addition, aside from the presence of ICD therapies, the frequency of these therapies has also been related with increased rates of anxiety disorders and depression in patients with CIED.^[4]

Authors reply

Dear Editor,

Indeed, according to the data of Bazoukis G. et al.,^[1] heart failure patients with reduced ejection fraction had a higher risk of death after implantable cardioverter-defibrillator (ICD) implantation. However, as we indicated in our article,^[2] the type of implantable device was included in the Cox proportional hazards regression model. According to Table 5, if only an ICD was implanted and the patient was not a candidate for cardiac resynchronization therapy (CRT), the hazard

To conclude, we think that as an important determinant of mortality and psychiatric disorders, it would be better if ICD therapies had been evaluated in the study population.

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ratio (HR) of death in this case was 0.28 (95% confidence interval: 0.09–0.83; $p=0.022$). Also, our data indicated no difference in the prevalence of depression in patients depending on the type of implantable device (Table 1; $p=0.610$).

An additional multivariate analysis of Cox regression showed that the HR for death in patients with CRT was 4 times higher than in patients who received an ICD only and 3.7 times higher in patients with combined devices (CRT+ICD). Actually, the highest mortality among patients was observed in CRT and CRT+ICD groups (21.1% and 21.0%, respectively), the lowest incidence of death was detected in the group of pa-