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Letter to the Editor

Whether Beta-Blockers Cause Depression and Anxiety Needs to be Investigated by Appropriately Designed Studies

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Letter to the Editor

We read with interest the article by Harrara *et al*. on a cross-sectional observational study of the association between beta-blocker use and the occurrence of depressive symptoms, as measured by the Patient Health Questionnaire (PHQ-9), in older patients (military personnel) with arterial hypertension. Of 149 elderly patients with an average age of 75, only 27.5% developed depression [1]. There was no correlation between beta-blocker use and the occurrence of depression, but depression was associated with frailty and individuals with technical or university education [1]. The study is interesting, but some points should be discussed.

The first point is that beta blockers in general are unlikely to cause depression. There are several arguments against the hypothesis that beta blockers could cause depression. First, there are millions of people who receive beta blockers, but there is no evidence that the prevalence of depression is increased in this population. Second, there are several publications that show no increased risk of beta blockers triggering depression [2]. Third, beta blockers have an anxiolytic effect [3], suggesting that at least patients with depression and anxiety may benefit from beta blockers.

The second point is that alternative causes of depression were not sufficiently ruled out in the patients included. More often than beta blockers, stressful life events, a susceptible personality, chronic illnesses and other comorbidities, hereditary depression, pregnancy, menopause, loneliness, the socioeconomic status, or alcohol or drug addiction may have caused depression.

The third point is that the study was conducted during the pandemic (May to July 2022) [1]. Therefore, it would have been essential to include the special living conditions and lifestyle changes during the pandemic and lockdowns in the analysis. In the first year of the pandemic in particular, the global prevalence of depression and anxiety increased by 25% [4]. There are also some studies that have even found an increase in the prevalence of suicidal thoughts or suicides [5].

The fourth point is that the PHG-9 is not the most appropriate test for detecting depressive symptoms. For example, the PHG-9 asks about non-specific disorders such as difficulty falling asleep, loss of appetite or overeating, or difficulty concentrating. Tests such as the Beck Depression Inventory (BDI), the Geriatric Depression Scale (GDS), the Edinburgh Postnatal Depression Scale (EPDS), or the Hamilton Depression Rating Scale (HDRS) are more suitable for detecting depression.

The fifth point is that the influence of beta-blocker use on depression may also depend on the type, duration of use, and dosage of the beta-blocker. The side effect profile of beta-blockers differs between the various brands.

Whether beta blockers are actually associated with the onset of depression or not needs to be further investigated in larger cohorts than those studied here, taking into account all covariates that influence mood.

Declarations

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