

## Interpretation of the Relationship Between CHA<sub>2</sub>DS<sub>2</sub>-VASc and Anxiety in Anticoagulated Patients

### Antikoagulan Tedavi Gören Hastalarda CHA<sub>2</sub>DS<sub>2</sub>-VASc ve Anksiyete Arasındaki İlişkinin Yorumlanması

To the Editor,

We read with great interest the study entitled "The Effects of Warfarin and Novel Oral Anticoagulants on Depression and Anxiety in Patients with Non-Valvular Atrial Fibrillation," published by Cansel et al.<sup>1</sup> in the December 2025 issue of the *Archives of the Turkish Society of Cardiology*. This study significantly advances our understanding of the impact of oral anticoagulant therapy on psychiatric symptoms in patients with atrial fibrillation (AF).<sup>1</sup>

One point that particularly drew our attention is the relationship between the CHA<sub>2</sub>DS<sub>2</sub>-VASc score<sup>2</sup> (Congestive heart failure, Hypertension, Age ≥ 75 years, Diabetes mellitus, prior Stroke/transient ischemic attack, Vascular disease, Age 65–74 years, Sex category) and anxiety levels reported in the study. In the discussion section, the authors suggest, based on correlation analysis, that higher CHA<sub>2</sub>DS<sub>2</sub>-VASc scores are associated with increased anxiety and depression. However, in the multivariate logistic regression analysis, the odds ratio for this variable was 0.691 (95% confidence interval: 0.538–0.883; P = 0.004), indicating an inverse relationship. We believe that the presence of a positive association in the correlation analysis but a negative association in the multivariate model warrants further clarification.

The study shows that patients in the warfarin group were older than those in the other treatment groups. As the Beck scales used in the study are based on somatic complaints, symptoms such as fatigue, insomnia, loss of appetite, and decreased energy in older people and individuals with multiple comorbidities may be a result of underlying illnesses and/or age-related frailty.<sup>3</sup> This may also result in scores being higher than they actually are.<sup>4</sup>

A higher CHA<sub>2</sub>DS<sub>2</sub>-VASc score usually indicates elderly patients with multiple comorbidities.<sup>5</sup> In the regression model, including variables that reflect the same clinical burden, such as the CHA<sub>2</sub>DS<sub>2</sub>-VASc score (which includes components such as age, heart failure, hypertension, diabetes mellitus, etc.), warfarin use, and depression score, may have created a suppressor effect among the variables. As these variables represent similar clinical information in different ways, the direction of the coefficients may be reversed. Thus, although the CHA<sub>2</sub>DS<sub>2</sub>-VASc score is positively associated with anxiety score, it may appear statistically "protective" when included in a model alongside other variables carrying the same information.

We believe that this difference should be considered as a possible model-related effect. Consequently, when constructing a statistical model, it should be borne in mind that the model's structure may lead to such directional changes. Careful consideration of this issue will improve the interpretation of the relationship between cardiovascular risk scores and psychiatric symptoms, as well as inform the design of future multivariate analyses. In this regard, the study by Cansel et al.<sup>1</sup> provides a valuable starting point for a more in-depth examination of the interaction between health-related risk and psychiatric symptoms.

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### LETTER TO THE EDITOR EDİTÖRE MEKTUP

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