

Letters to the Editor

Does CHA₂DS₂-VASc Score Select Patients Who Will Benefit Most From Anticoagulation?



¿La clasificación CHA₂DS₂-VASc selecciona a los pacientes que más van a beneficiarse de la anticoagulación?

To the Editor,

We have read the article by Barrios et al¹ on the use of anticoagulation therapy in patients with atrial fibrillation in an unselected population in primary care. We consider it a very important study because it highlights the great room for improvement in daily practice and that, regardless of the embolic risk scale chosen, about 45% of patients without an indication receive anticoagulation therapy (CHADS₂ and CHA₂DS₂-VASc score = 0), whereas more than 40% of patients with a clear indication do not.

However, the reason for this letter concerns our disagreement with the authors' statement that the CHA₂DS₂-VASc scale "...enables better identification of those patients with AF who will most benefit from anticoagulation therapy than the CHADS₂ score". Although it is true that when minor criteria (female sex, age 65-74 years, or vascular disease) are taken into account the predictive power of embolic events increases, we believe that basing the indication for anticoagulation therapy on these alone, in the absence of any major criterion, leads to many patients with a very low risk of embolism receiving anticoagulation therapy regardless of the net clinical benefit we wish to obtain (reducing thromboembolic risk while reducing severe bleeding risk). This idea is supported by information from a Danish registry on atrial fibrillation,² which investigated reductions in the risk of stroke and intracranial bleeding. There was an evident lack of net clinical benefit in patients with a CHA₂DS₂-VASc score = 1 and a very slight net clinical benefit in those with a CHADS₂ score = 1. This difference between the 2 scales can only be explained by the zero net clinical benefit of anticoagulation

therapy in patients with a single minor criterion. In addition, when all the criteria are present anticoagulation therapy has an overall net clinical benefit in patients with a CHA₂DS₂-VASc score between 2 and 9. Nevertheless, it remains unclear whether this would be maintained with a score of 2 or even 3 points if minor criteria alone were taken into account.

Therefore, it seems that the simplest solution based on scientific knowledge would be to maintain the indication for anticoagulation therapy according to CHADS₂ criteria. This is in line with current evidence, while taking into account the words of caution expressed in the editorial comment in *Revista Española de Cardiología*³ concerning the guidelines for atrial fibrillation published by the European Society of Cardiology, as well as those published independently by its North American and Canadian counterparts, which did not take the CHA₂DS₂-VASc scale into account. However, the information provided by the new classification should be borne in mind in cases of doubtful net clinical benefit (some patients with CHADS₂ scores = 1). In this line, the recent study by Coppens et al⁴ showed that a significant percentage of patients (26%) with a CHADS₂ score = 1 (except age) have a very low risk of embolism (about 1% per year) unless they have any of the minor criteria included in the CHA₂DS₂-VASc scale. This raises doubts regarding the appropriateness of anticoagulation therapy in this subgroup. Thus, we propose the algorithm shown in the Figure: CHADS₂ = 0, no anticoagulation; CHADS₂ ≥ 2, anticoagulation (except in the case of absolute contraindication); CHADS₂ = 1, anticoagulation when the criterion is age or there are minor criteria.

Finally, it should be borne in mind that the 4 studies on nonvalvular atrial fibrillation using the new oral anticoagulants based their indication for anticoagulation therapy on the CHADS₂ classification. Therefore, it would not be justified to extrapolate their results and start anticoagulation with one of these drugs when the patient does not have any of the CHADS₂ major criteria.

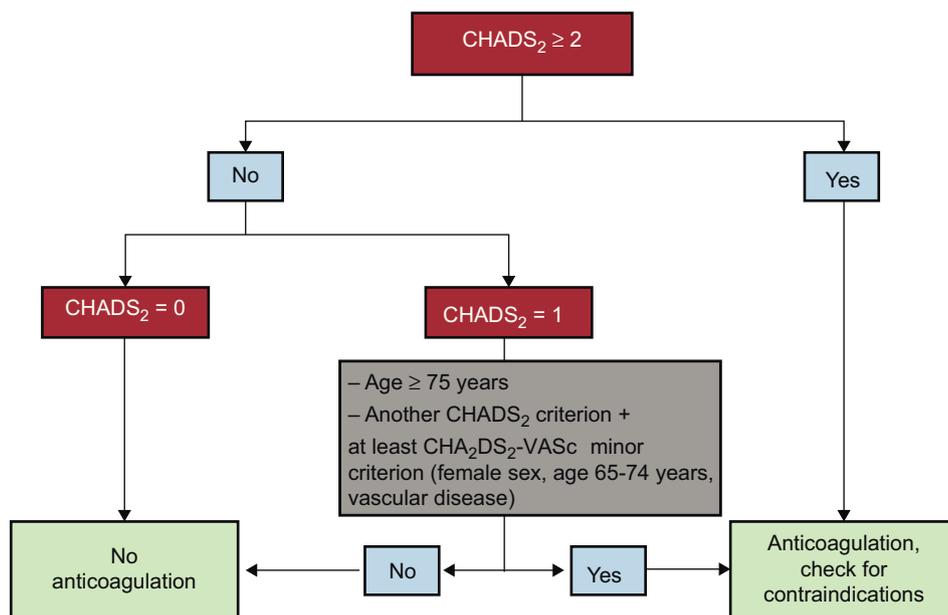


Figure. Proposed algorithm for anticoagulation therapy in patients with nonvalvular atrial fibrillation.

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Does CHA₂DS₂-VASC Score Select Patients Who Will Benefit Most From Anticoagulation? Response



¿La clasificación CHA₂DS₂-VASC selecciona a los pacientes que más van a beneficiarse de la anticoagulación? Respuesta

To the Editor,

We would like to thank Pueo et al for their interest in our article published in *Revista Española de Cardiología*. We agree with the authors that one of the main conclusions of the study is that antithrombotic therapy is not applied correctly in Spain.¹ The simplification of the algorithm for anticoagulation therapy in patients with nonvalvular atrial fibrillation appears to be sound in principle, as it will improve the application of antithrombotic therapy.

However, we think the risk scales and treatment algorithms require comment. First, we should more clearly establish when the risk of stroke in a patient is sufficiently high to warrant anticoagulation therapy. For example, the annual risk of stroke in patients with CHADS₂ and CHA₂DS₂-VASC scores = 1 is 2.8% and 1.3%, respectively. When both scores are 2, the risk is between 4.0% and 2.2%.^{2,3} That is, the risk of stroke in a patient with a CHADS₂ score = 1 is greater than that in a patient with a CHA₂DS₂-VASC score = 2.^{4,5}

Second, although most of the variables in both scales are continuous, they are presented as dichotomous variables, which, although easy to apply, greatly decreases their predictive value. For example, although the score obtained is the same, it is reasonable to assume that the risk of stroke differs between a 75-year-old patient and a 65-year-old patient. In fact, according to the scheme proposed by the authors, in the absence of any other associated thrombotic risk factors, a patient of 74 years and 11 months will not have an indication for anticoagulation therapy, but 1 month later most definitely will. Similarly, a patient with a persistent systolic blood pressure of 141 mmHg should be considered hypertensive, but not a patient with 139 mmHg, and yet the risk of stroke should be very similar. Again, a patient who has had diabetes for 15 years and is being treated with insulin therapy does not have the same risk of stroke as a patient newly diagnosed with diabetes being treated with 1 drug alone, although in both patients the scores will be the same. The same could be said of the remaining variables.

Finally, it seems too simplistic to only take into account contraindications to anticoagulation. It would be better to take into account the factors that increase the risk of bleeding, quantify this risk, and compare it with the risk of stroke.⁶

Thus, bearing in mind the technological age in which we live, it would be far better to again analyze the databases to which the scales were applied, although this should be done using the actual value of the variable, then assess the risk of stroke and bleeding, and finally use a software application to accurately calculate the risk of stroke and bleeding. This assessment would probably be as fast as using an oversimplified scale, but would certainly be far more accurate, realistic, and useful.

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