

CHADS₂ Score: Its Predictive Capacity in Clinical Practice

Yaniel Castro Torres and Anamary Fleites Pérez

Universidad de Ciencias Médicas "Dr. Serafín Ruiz de Zárate Ruiz", Villa Clara - Cuba

Dear Editor,

We have read the recently published article entitled "CHADS₂ score in predicting cerebrovascular events—a meta-analysis" by Santos et al.¹. They show the results derived from a meta-analysis on the usefulness of CHADS₂ score to predict cerebrovascular events. Many strategies have been developed to predict the risk of stroke in patients with atrial fibrillation (AF)². The majority of these have shown modest prediction capacity, with poor results in clinical practice.

Only CHADS₂ score was tested in at least 10 cohort studies before its definitive validation³. Currently, the association between a high CHADS₂ score and stroke in patients with AF is well-established. However, the capacity of this score, as demonstrated in this research, to predict cardiovascular events in patients without AF is particularly relevant. The outcomes of this meta-analysis show that in patients with AF the risk of cardiovascular events was significantly higher for CHADS₂ score >2 points (OR=2.93; CI: 2.81–3.06; p < 0.00001). In patients without AF, the results were similar (OR=2.94; CI: 2.87–3.01; p < 0.00001).

Moreover, this study showed that patients with AF and CHADS₂ score >2 points have 3-fold greater risk of stroke and/or death. During years CHADS₂ score has been

used to indicate anticoagulation therapy in patients with AF. It is currently recommended by several international anticoagulation committees due to its proven efficacy to predict stroke in patients with AF and because it is easy for clinicians to recall and use³. This study increases the usefulness of CHADS₂ score in clinical settings representing a novel tool to design preventive actions in a great number of patients, but further investigation is necessary.

CHADS₂ score is not the only strategy used in clinical practice. It has been replaced in some places by CHA₂DS₂-VASc score⁴. CHA₂DS₂-VASc score has been evaluated in at least five studies since its description and with one exception, all investigations demonstrated similar predictive capacity when compared with CHADS₂³. As CHA₂DS₂-VASc has been used to attain the same goals as CHADS₂ in patients with AF, it would be interesting to know whether CHA₂DS₂-VASc has the same predictive capacity in clinical practice than CHADS₂, as shown by Santos et al¹.

Undoubtedly, the possibility of having a single score that may be able to determine the use of anticoagulation therapy in patients with AF and predict stroke both in patients with and without AF would be very useful for the medical community.

Keywords

Atrial Fibrillation; Stroke; Vascular Diseases; Thromboembolism; Organ Dysfunction Scores; Risk Grade.

Mailing Address: Yaniel Castro Torres •

Luz Caballero #161 entre Hospital y Alejandro Oms, Parroquia, Santa Clara. Postal Code: 50100, Villa Clara - Cuba

E-mail: yanielct@edu.vcl.sld.cu

Manuscript received March 8, 2013; revised manuscript April 15, 2013; accepted April 15, 2013.

DOI: 10.5935/abc.20130154

References

1. Santos C, Pereira T, Conde J. O escore de CHADS₂ na predição de eventos cerebrovasculares: uma metanálise. *Arq Bras Cardiol.* 2013;100(3):294-301.
2. Hart RG, Pearce LA, Halperin JL, Hylek EM, Albers GW, Anderson DC, et al; Stroke Risk in Atrial Fibrillation Working Group. Comparison of 12 risk stratification schemes to predict stroke in patients with nonvalvular atrial fibrillation. *Stroke.* 2008;39(6):1901-10.
3. You JJ, Singer DE, Howard PA, Lane DA, Eckman MH, Fang MC, et al; American College of Chest Physicians. Antithrombotic therapy for atrial fibrillation: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *Chest.* 2012;141(2 Suppl):e531S-75S.
4. Camm AJ, Lip GY, De Caterina R, Savelieva I, Atar D, Hohnloser SH, et al. Actualización de las guías de la Sociedad Europea de Cardiología (ESC) para el manejo de la fibrilación auricular de 2010 Elaborada en colaboración con la Asociación Europea del Ritmo Cardíaco. *Rev Esp Cardiol.* 2013;66(1):54.e1-54.e24.

Reply

We would like to thank you for reading our article and especially for the recognition of the scientific value of our research. This is actually a topic that has aroused great interest in the international literature in recent years. The role of the CHADS₂ score for risk stratification in patients with atrial fibrillation (AF) is well documented today, showing great relevance in therapeutic decisions, particularly regarding the use of anticoagulation. One aspect of great importance in our results is demonstrating the usefulness of this score in individuals with sinus rhythm, indicating that it may benefit a wider range of clinical situations. This result should thus provide encouragement for further cohort studies, aiming to consubstantiate the importance of this score in other clinical contexts beyond AF.

We equally agree with what was stated about the CHDA₂S₂-VASc score, which has also received significant empirical support, with evidence of a predictive role similar to the one seen for the CHADS₂ score. A current challenge for the scientific community lies indeed in the development of a unified score, which would combine the virtues of the existing scoring systems, necessarily adapted to different clinical scenarios at which they will be aimed.

In this sense, we feel that our results, in addition to supporting the usefulness of the CHADS₂ score to predict cerebrovascular events in patients with AF and in patients with sinus rhythm, have the advantage of indicating new areas of future research that may lead to the optimization of risk stratification strategies and therapeutic prescription.

Sincerely,
Telmo Pereira