Risk assessment and therapy decision in patients at low risk for stroke: CHA₂DS₂-VASc vs. CHADS₂?

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This editorial refers to ‘The CHA₂DS₂-VASc score identifies those patients with atrial fibrillation and a CHADS₂ score of 1 who are unlikely to benefit from oral anticoagulant therapy’, by M. Coppens et al., on page 170

The risk of stroke in patients with atrial fibrillation (AF) is a continuum and depends on comprehensive assessment of certain clinical risk factors. However, many other unidentified risk factors may still exist, and a low risk patient can become a high risk patient over time. Therefore, trials investigating stroke risk profiles within a certain period of time must be interpreted with caution. Additionally, definitions of some risk factors are inconsistent and may vary from one trial to another. For example, the definition of heart failure is not necessarily the same in all trials and does not mean inclusion of only patients with systolic left ventricular dysfunction. The same is also true for the definition of vascular disease such as myocardial infarction and peripheral artery disease. Some trials included patients according to history only and not according to required objective parameters. Among the available stroke risk stratification schemes, the CHADS₂ [Congestive heart failure, Hypertension, Age ≥75, Diabetes, Stroke (doubled)] score is most widely used and adopted. However, one of the major limitations of the CHADS₂ score is that it does not include many common risk factors for stroke and neglects some others. For example, the presence of vascular disease and female sex, although not included in the CHADS₂ score, have already been identified as significant risk factors for stroke in AF. In addition, age 65 to <75 is also disregarded in the CHADS₂ score although its value for risk of stroke is unequivocal.

In AF. In addition, age 65 to 75 is also disregarded in the CHADS₂ score although its value for risk of stroke is unequivocal established by previous trials. Finally, the absence of risk factors for stroke according to CHADS₂ score does not directly classify a patient into a ‘truly low risk’ category because a substantial number of patients still have stroke rates of ~1.5%/year. This might be partially explained by the presence of wide confidence intervals that belong to various categories of the CHADS₂ score. Accordingly, the CHADS₂ score is deemed to be less strong and discriminative than the CHA₂DS₂-VASc score [Congestive heart failure/left ventricular dysfunction, Hypertension, Age ≥75 (doubled), Diabetes, Stroke (doubled)-Vascular disease, Age 65 to <75, and Sex category (female)] while the latter is more inclusive rather than exclusive by incorporating other common risk factors and has better ability to identify the true risk category of patients with AF.

Current practice supported by recent guidelines advocates therapy with a vitamin K antagonist (VKA) for a CHADS₂ score ≥2. However, what is unclear, and remains to be determined, is whether all patients with a CHADS₂ score of 1 would be considered as high risk enough and exclusively benefit from VKA therapy or not? An elegant study by Coppens et al. might be a partial solution to this complex dilemma. Briefly, the authors tried to determine the ability of the CHA₂DS₂-VASc score to discriminate stroke risk in AF patients with a CHADS₂ score of 1 and thereby identify those patients for whom VKA therapy may not be of benefit. After all patients with a CHADS₂ score of 1 were reclassified according to the CHA₂DS₂-VASc score, 26% and 74% of them were categorized as having a CHA₂DS₂-VASc score of 1 and ≥2, respectively. After 11,414 patient-years of follow-up, the annual incidence of ischaemic or unspecified stroke or systemic embolus (SSE) was 0.9% [95% confidence interval (CI) 0.6–1.3] and 2.1% (95% CI 1.8–2.5) for patients with a CHA₂DS₂-VASc score of 1 and ≥2, respectively. Among the new risk factors (vascular disease, female sex, age 65 to <75 years) defined in the CHA₂DS₂-VASc score, only age 65 to <75 years was detected to be the strongest. Finally, the authors concluded that the CHA₂DS₂-VASc score was able to reclassify 26% of patients with a CHADS₂ score of 1 to a low annual risk of SSE of 1%, which was low enough to consider withholding VKA therapy. Therefore, they may be treated with acetylsalicylic...
vascular disease as well as heart failure is not a risk factor in this
study. Similarly, heart failure is also regarded as being an import-
ance risk factor, especially age 65 to <75 years in this study is asso-
ciated with an increased risk of the composite outcome and is the
strongest among the other new risk factors. This finding is consist-
ent with other trials that highlight the increased risk of stroke
above the age of 65. Thus, age 65 to <75 years that is included
in the CHA2DS2-VASc score as a risk factor deserves special
emphasis and consideration for VKA therapy.

In conclusion, the study published by Coppens et al., re-confirms
the superiority of the CHA2DS2-VASc over the CHADS2 score for
discriminating truly low and high risk patients and emphasizes the im-
portance of new risk factors, especially age 65 to <75 years. Based
on the results of their study and current practice, I would recom-
mand that patients with a CHA2DS2-VASc score of 1 who are 65
to <75 years of age and with no other risk factors be considered
high risk enough and would mostly benefit from VKA or novel
oral anticoagulant therapy, whereas other low risk patients <65
years of age probably need only ASA therapy (Figure 1).

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Figure 1 Proposed algorithm regarding how to treat patients
with a CHA2DS2-VASc score ¼ 1 based on the results of
the study by Coppens et al. and current practice. The dotted line
denotes preferred use of a NOAC instead of a VKA based on
risk/benefit analysis and cost. NOAC, novel oral anticoagulant;
VKA, vitamin K antagonist; ASA, acetylsalicylic acid.