



Aalborg Universitet

AALBORG UNIVERSITY
DENMARK

Recommendations on stroke prevention for patients having a CHA2DS2-VASc score of 1 (males) or 2 (females) in 2019 atrial fibrillation guidelines

Chao, Tze-Fan; Chen, Shih-Ann; Lip, Gregory Y H

Published in:
Trends in Cardiovascular Medicine

DOI (link to publication from Publisher):
[10.1016/j.tcm.2019.02.008](https://doi.org/10.1016/j.tcm.2019.02.008)

Creative Commons License
CC BY-NC-ND 4.0

Publication date:
2019

Document Version
Accepted author manuscript, peer reviewed version

[Link to publication from Aalborg University](#)

Citation for published version (APA):
Chao, T-F., Chen, S-A., & Lip, G. Y. H. (2019). Recommendations on stroke prevention for patients having a CHA2DS2-VASc score of 1 (males) or 2 (females) in 2019 atrial fibrillation guidelines. *Trends in Cardiovascular Medicine*, 29(7), 427-428. <https://doi.org/10.1016/j.tcm.2019.02.008>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- ? Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- ? You may not further distribute the material or use it for any profit-making activity or commercial gain
- ? You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Accepted Manuscript

Recommendations on stroke prevention for patients having a CHA₂DS₂-VASc score of 1 (males) or 2 (females) in 2019 atrial fibrillation guidelines

Tze-Fan Chao M.D. , Shih-Ann Chen M.D. , Gregory Y.H. Lip M.D.

PII: S1050-1738(19)30026-X
DOI: <https://doi.org/10.1016/j.tcm.2019.02.008>
Reference: TCM 6640



To appear in: *Trends in Cardiovascular Medicine*

Please cite this article as: Tze-Fan Chao M.D. , Shih-Ann Chen M.D. , Gregory Y.H. Lip M.D. , Recommendations on stroke prevention for patients having a CHA₂DS₂-VASc score of 1 (males) or 2 (females) in 2019 atrial fibrillation guidelines , *Trends in Cardiovascular Medicine* (2019), doi: <https://doi.org/10.1016/j.tcm.2019.02.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Letter to the Editor

Recommendations on stroke prevention for patients having a CHA₂DS₂-VASc score of 1 (males) or 2 (females) in 2019 atrial fibrillation guidelines

Tze-Fan Chao, M.D.^{1,2}, Shih-Ann Chen, M.D.^{1,2}, Gregory Y. H. Lip, M.D.³

¹Division of Cardiology, Department of Medicine, Taipei Veterans General Hospital, Taipei, Taiwan. ²Institute of Clinical Medicine, and Cardiovascular Research Center, National Yang-Ming University, Taipei, Taiwan. ³Liverpool Centre for Cardiovascular Science, University of Liverpool & Liverpool Heart and Chest Hospital, Liverpool, United Kingdom; and Aalborg Thrombosis Research Unit, Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Funding Sources

This work was supported in part by grants from the Ministry of Science and Technology (MOST 107-2314-B-075-062-MY3), and Taipei Veterans General Hospital (V107B-001, V107B-022, V107C-200), Taipei, Taiwan.

Disclosures

Prof Lip has served as a consultant for Bayer, Merck, Sanofi, BMS/Pfizer, Daiichi-Sankyo, Biotronik, Medtronic, Portola and Boehringer Ingelheim and has been on the speakers bureau for Bayer, BMS/Pfizer, Boehringer Ingelheim, Daiichi-Sankyo, Medtronic.

Address for correspondence

Tze-Fan Chao, M.D.

Division of Cardiology, Taipei Veterans General Hospital

No. 201, Sec. 2, Shih-Pai Road, Taipei, Taiwan

Tel: 886-2-2875-7156; Fax: 886-2-2875-5656

Email: eyckeyck@gmail.com

Whether oral anticoagulants (OACs) should be prescribed for patients with atrial fibrillation (AF) having a CHA₂DS₂-VASc score of 1 for males or 2 for females has been debated for years. The 2019 AHA/ACC/HRS focused update of the 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation (AF) states that OACs may be reasonable for this AF population (class IIb recommendation).¹ This recommendation is less strong compared to that of the 2016 AF guidelines of European Society of Cardiology (class IIa recommendation) and the 2018 CHEST guidelines.^{2,3} These discrepancies of different important guidelines could make this difficult issue even more complicated.

Current recommendations of the international guidelines may perhaps be too simplified regarding this area, and a more delicate approach for these patients is required. After all, clinical factor-based stroke risk stratification schemes such as the CHA₂DS₂-VASc score are reductionist in design with the aim to aid clinical decision-making in a simple and practical manner; indeed, the CHA₂DS₂-VASc score does not include all possible risk factors associated with stroke in AF. Second, stroke risk is a dynamic process, and a patient's risk profile changes over time. Third, different risk factor components were not equal regarding the risk of ischemic stroke in AF patients with a CHA₂DS₂-VASc score of 1 for males or 2 for females. For example, age 65-74 years and diabetes mellitus were associated with a higher risk of ischemic stroke than other risk factors among AF patients with one single risk factor beyond sex.⁴ Besides, since "age" is an important driver of ischemic stroke, the age of patients also should be taken into consideration when making decisions about stroke prevention, but age is also a continuum of risk such that an AF patient who is age 65 is clearly at lower risk than someone at age 74. Indeed, when that patient turns age 75 and gains 2 points on the CHA₂DS₂-VASc score, it does not mean that their risk is doubled.

The introduction of the non-vitamin K antagonist OACs (NOACs) have changed the landscape of stroke prevention. In our recent publication, we proposed that age thresholds for the use of NOACs were different for AF patients having different single risk factors beyond sex despite the same CHA₂DS₂-VASc score point (1 for males and 2 for females); that is, 35 years for heart failure, 50 years for hypertension or diabetes, and 55 years for vascular diseases.⁵ We therefore suggest that “age” and “comorbidity” are two important factors which should be considered to be incorporated into the guideline recommendations for the use of OACs for patients with a CHA₂DS₂-VASc score of 1 for males or 2 for females (Figure 1), notwithstanding the fact that clinicians should recognize that risk stratification is designed with practicality in mind and that stroke risk is dynamic rather than static.

References

1. January CT, Wann LS, Calkins H, Chen LY, Cigarroa JE, Cleveland JC, Jr., et al. 2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation. *Circulation* 2019 Epub.
2. Kirchhof P, Benussi S, Kotecha D, Ahlsson A, Atar D, Casadei B, et al, Group ESCSD. 2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS. *Eur Heart J* 2016;37:2893-2962.
3. Lip GYH, Banerjee A, Boriani G, Chiang CE, Fargo R, Freedman B, et al. Antithrombotic Therapy for Atrial Fibrillation: CHEST Guideline and Expert Panel Report. *Chest* 2018;154:1121-1201.
4. Chao TF, Liu CJ, Wang KL, Lin YJ, Chang SL, Lo LW, et al. Should atrial fibrillation patients with 1 additional risk factor of the CHA2DS2-VASc score (beyond sex) receive oral anticoagulation? *J Am Coll Cardiol* 2015;65:635-642.
5. Chao TF, Lip GYH, Lin YJ, Chang SL, Lo LW, Hu YF, et al. Age threshold for the use of non-vitamin K antagonist oral anticoagulants for stroke prevention in patients with atrial fibrillation: insights into the optimal assessment of age and incident comorbidities. *Eur Heart J* 2019 Epub.

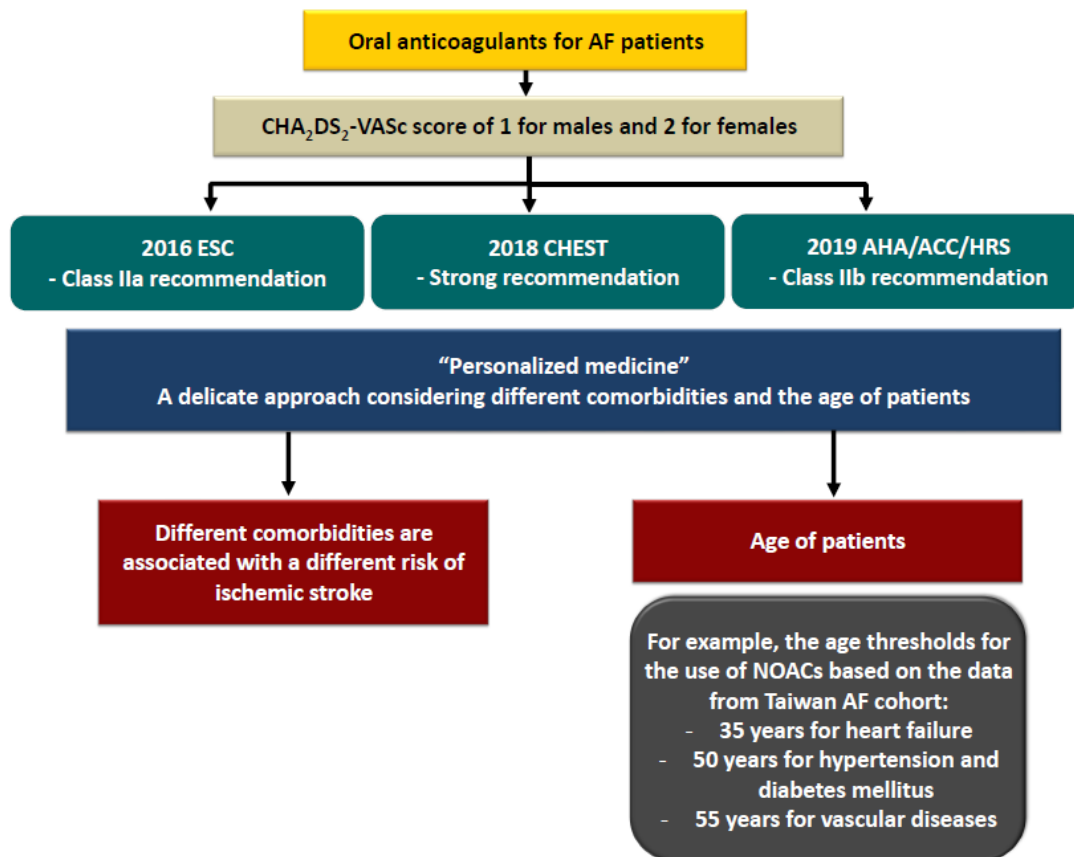
Figure legend:

Figure 1. Different recommendations in important guidelines and the delicate approach about stroke prevention for AF patients with a CHA₂DS₂-VASc score of 1 (males) or 2 (females).

ACC = American College of Cardiology; AF = atrial fibrillation; AHA = American Heart Association; ESC = European Society of Cardiology; NOACs = non-vitamin K antagonist oral anticoagulants