

Authors' reply

Sir,

We thank the authors for their interest in our article^[1] and for highlighting the issue of anticoagulation for atrial fibrillation (AF) in children with valvular heart disease (VHD). There is little doubt that AF independently increases the risk of stroke across all age groups, however, the AF-related stroke incidence varies.^[2] The presence of concomitant VHD, regardless of the disease type and severity, further amplifies the risk of stroke and thromboembolic events in AF.^[2,3]

There are no published studies in pediatric patients, specifically addressing the risk of AF in VHD or the issue of anticoagulation in atrial arrhythmias. An important explanation for the lack of data is that AF is quite rare in the pediatric population, unlike in adults. Therefore, management experience from the adult literature is used as a surrogate and is extrapolated to the pediatric age group.

There has been considerable heterogeneity in the definition of valvular and nonvalvular AF, and the definitions have changed with successive editions of major guidelines. A consensus^[4] published in 2014 defined nonvalvular AF as AF in the absence of prosthetic mechanical heart valves or hemodynamically significant valve disease, while the term “nonvalvular AF” was no longer used in the recent update.^[5] AF evidently leads to an increased risk for thromboembolism in patients with mitral stenosis, but there are limited data for other valvular diseases. There are currently no specific recommendations for thromboembolic prophylaxis in patients with AF and mitral or aortic regurgitation.

Recent guidelines reiterate the assessment of stroke risk using the CHA₂DS₂-VASc score for patients with nonvalvular AF.^[5] Although the data on the use of CHA₂DS₂-VASc score for anticoagulation in AF in children

are sparse, the risk of stroke with AF in children is very low as per the scoring system. It needs to be highlighted that the CHADS₂ risk score was developed for patients with nonvalvular AF, and hence, some studies suggested excluding patients with valve disease, particularly rheumatic mitral valve disease, for risk assessment using the CHADS₂ score.^[2,6] Darby *et al.*^[3] recommended the use of systemic anticoagulation in all patients with rheumatic valvular disease with AF, unless there is a contraindication. Nonetheless, the recent guidelines recommend the use of CHA₂DS₂-VASc score for deciding anticoagulation therapy in patients with AF and mitral or aortic regurgitation based on *post hoc* subgroup analyses of large randomized controlled trials.^[7]

The 2017 European guidelines for the management of VHDs are silent about the use of scoring system when deciding anticoagulation in this population, highlighting the heterogeneity in the recommendations on the issue. The authors mention that novel oral anticoagulants (NOACs) should be considered as an alternative to Vitamin K antagonists (VKAs) in patients with aortic stenosis, aortic regurgitation, and mitral regurgitation presenting with AF (Class IIa, level of evidence B).^[8] However, there is a lack of data on the safety and efficacy of NOACs in children.

As explained above, the statement in the current guidelines^[1] is based on the conflicting evidence available from the studies in the adult population. The use of VKAs is reasonable in children with AF and mitral or aortic regurgitation. However, we agree that the “decision to anticoagulate” should be individualized in children and prospective randomized controlled trials are needed to formulate risk stratification system to guide the use of anticoagulation in this pediatric subset.

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Conflicts of interest

There are no conflicts of interest.

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REFERENCES

- Saxena A, Relan J, Agarwal R, Awasthy N, Azad S, Chakrabarty M, *et al.* Indian guidelines for indications and timing of intervention for common congenital heart diseases: Revised and updated consensus statement of the Working group on management of congenital heart diseases. *Ann Pediatr Card* 2019;12:254-86
- Di Biase L. Use of direct oral anticoagulants in patients with atrial fibrillation and valvular heart lesions. *J Am Heart Assoc* 2016;5:e002776.
- Darby AE, Dimarco JP. Management of atrial fibrillation in patients with structural heart disease. *Circulation* 2012;125:945-57.
- Lip GY, Windecker S, Huber K, Kirchhof P, Marin F, Ten Berg JM, *et al.* Management of antithrombotic therapy in atrial fibrillation patients presenting with acute coronary syndrome and/or undergoing percutaneous coronary or valve interventions: A joint consensus document of the European society of cardiology working group on thrombosis, European Heart Rhythm Association (EHRA), European Association of Percutaneous Cardiovascular Interventions (EAPCI) and European Association of Acute Cardiac Care (ACCA) endorsed by the Heart Rhythm Society (HRS) and Asia-Pacific Heart Rhythm Society (APHRs). *Eur Heart J* 2014;35:3155-79.
- January CT, Wann LS, Calkins H, Chen LY, Cigarroa JE, Cleveland JC, *et al.* 2019 AHA/ACC/HRS focused update of the 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: A report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol* 2019;74:104-32.
- January CT, Wann LS, Alpert JS, Calkins H, Cigarroa JE, Cleveland JC, *et al.* 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol* 2014;64:e1-76.
- Nishimura RA, Otto CM, Bonow RO, Carabello BA, Erwin JP, Fleisher LA, *et al.* 2017 AHA/ACC focused update of the 2014 AHA/ACC guideline for the management of patients with valvular heart disease: A report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol* 2017;70:252-89.
- Baumgartner H, Falk V, Bax JJ, De Bonis M, Hamm C, Holm PJ, *et al.* 2017 ESC/EACTS Guidelines for the management of valvular heart disease. *Eur Heart J* 2017;38:2739-91.

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