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Editorial

Screening for obstructive sleep apnoea in patients with atrial fibrillation: Much more than a screening tool alone

Atrial Fibrillation (AF) is considered the most prevalent cardiac arrhythmia in the general population. Current practice guidelines recommend a comprehensive treatment approach that goes beyond the management of the arrhythmia and the prevention of the associated increased risk of stroke, and it has been demonstrated that numerous risk factors contribute to the predisposition of AF, and identification and consequent management of such risk factors is therefore paramount [1].

Obstructive sleep apnoea (OSA) is an important risk factor in patients with AF. However, whilst highly prevalent (up to 81%) in the AF population and associated with poor outcomes in arrhythmia patients if untreated [2], OSA is not always adequately addressed in clinical practice. This may be partially due to fragmentation of care resulting in an incomplete diagnostic assessment, but also due to a variety of screening instruments available and consisting ambiguity about their predicting value in the AF population and the best choice of tool. The most commonly used tools include: (i) the Epworth sleepiness scale which measures the propensity to fall asleep in certain situations includes 8 items to assesses the presence and severity of sleepiness, expressed on a 4 point Linkert scale; (ii) The Berlin questionnaire assesses the presence and frequency of snoring behaviour, wake time sleepiness or fatigue, and a history of obesity and /or hypertension; (iii) the STOP-BANG questionnaire aims to identify sleep disordered breathing by evaluating the following factors: snoring, tiredness, observed apneas, elevated blood pressure, Body Mass Index (BMI), neck circumference, and gender to calculate a score to identify if sleep disordered breathing is present; and finally the NoSAS also aims to assess the level of sleep apnea investigating five variables including Neck circumference, Obesity, Snoring, Age (>55 years) and male gender.

May et al have performed a case-control study and evaluated characteristics of common OSA screening tools in individuals with paroxysmal AF to confirm the hypothesis that OSA screening tools perform worse in individuals with AF compared to those without, and that adding echocardiographic measures may improve the screening performance of such tools [3]. The authors identified that all tools did not perform well in the paroxysmal AF cohort, and that the performance was significantly less vigorous compared to what has been reported in the literature before. An interesting and important finding indeed. Presumably this inspired the authors to develop a new, short and simplified screening tool which would demonstrate improved performance in the AF population. The NABS model (Neck circumference, Age, BMI, and Snoring) was developed and this tool indeed demonstrated improved performance compared to tools mentioned before. However, the NABS model demonstrated optimal discriminative ability for an Apnea-Hypopnea Index (AHI) $\geq$ 15 with a sensitivity of 45% and specificity of 97%) [3].

Although the authors should be congratulated with this interesting piece of work, the question raises weather adding another screening tool to the spectrum of choices in clinical practice, is the desired solution. Identification of OSA requires specific knowledge to evaluate and assess clinical characteristics in individuals. Besides the fact that this takes time, which that is often an issue during e.g. busy consulting hours, patients with AF tend not to report and experience the typical OSA related clinical features such as daytime sleepiness [4]. Also, there is a whole range of new technologies to choose from, ranging from a single overnight polysomnography to simple and more widely available device-based screening tools to advanced continuous and combined AF and sleep disorder breathing assessment [5]. Given the low accuracy of available screening tools, scores of such tools alone should not preclude individuals for assessing objective measures by validated and accurate testing to guide the identification of OSA.

Guidelines for the management of AF state that screening for OSA should be considered in cardiovascular risk factor assessment, as part of a comprehensive AF treatment [1]. Unfortunately, like in a previous version, the guidelines [6] do not provide a practical guide on how to implement this in practice. Clinical pathways may be of potential benefit to tackle this issue and systematically identify, characterize and treat OSA in AF patients. Integrated care has been identified as a suitable approach to manage patients with complex and chronic conditions such as AF. Therefore, an integrated AF service providing comprehensive care by a multidisciplinary team and involving the patient in the decision making, has been demonstrated to be beneficial in terms of improved clinical outcomes [7]. In line with such integrated clinics it is conceivable to further explore integrated OSA-AF pathways, in which there is a close collaboration between the AF team and the specialised sleep team to provide dedicated and comprehensive treatment [8]. Moreover, to prevent fragmentation in OSA care such interdisciplinary pathway could facilitate (i) clinical and physical assessment, (ii) testing by means of polysomnography or simpler cardio(respiratory) polygraphy monitoring, (iii) initiate appropriate treatment with continuous positive airway pressure (CPAP); (iv) and provide a structured patient follow-up to focus on patient education, adherence, side effects, amongst other aspects [9].

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Finally, although practice guidelines are the cornerstone of standardised treatment, tailored to the individual needs and preferences of patients, society is in great need of a practical guide on how to implement guideline recommendations in clinical practice. This would also raise awareness for the important contribution of OSA to the increasing prevalence of cardiovascular disease, and in line with this paper, the prevalence of AF. In short, OSA is a complex phenomenon which identification requires more than simply applying a screening tool. It requires clear identification (or exclusion) by validated and accurate OSA testing followed by comprehensive management provided by a multidisciplinary team, which are considered the fundamentals of holistic healthcare.

Declaration of Competing Interest

The authors report no relationships that could be construed as a conflict of interest.

References

[1] G. Hindricks, T. Potpara, N. Dagres, et al, 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association of Cardio-Thoracic Surgery (EACTS), Eur. Heart J. (2020).
[2] P.R. Genta, L.F. Drager, F.G. Lorenzi, Screening for obstructive sleep apnea in patients with atrial fibrillation, Sleep Med. Clin. 12 (1) (2017) 99–105.
[3] A.M. May, L. Wang, D.H. Kwon, et al, Sleep apnea screening instrument evaluation and novel model development and validation in the paroxysmal atrial fibrillation population, Int. J. Cardiol. Heart Vasc. 31 (2020) 100624, https://doi.org/10.1016/j.ijcha.2020.100624.
[4] K. Kadhim, M.E. Middeldorp, A.D. Elliott, et al, Self-reported daytime sleepiness and sleep-disordered breathing in patients with atrial fibrillation: SNOozE-AF, Can. J. Cardiol. 35 (11) (2019) 1457–1464.
[5] D. Linz, M. Baumert, L. Desteghe, et al, Nightly sleep apnea severity in patients with atrial fibrillation: Potential applications of long-term sleep apnea monitoring, Int. J. Cardiol. Heart Vasc. 24 (2019) 100424.
[6] P. Kirchhof, S. Benussi, D. Kotecha, et al, 2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS, Eur. Heart J. 37 (38) (2016) 2893–2962.
[7] J.M. Hendriks, R. de Wit, H.J. Crijns, et al, Nurse-led care vs. usual care for patients with atrial fibrillation: results of a randomized trial of integrated chronic care vs. routine clinical care in ambulatory patients with atrial fibrillation, Eur. Heart J. 33 (21) (2012) 2692–2699.
[8] L. Desteghe, J.M.L. Hendriks, R.D. McEvoy, et al, The why, when and how to test for obstructive sleep apnea in patients with atrial fibrillation, Clin. Res. Cardiol. (2018).
[9] L. Desteghe, D. Linz, J.M. Hendriks, Sleep apnea testing and management in patients with atrial fibrillation: why is it so difficult?, J. Cardiovasc. Nurs. 35 (4) (2020) 324–326.

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