Mitral stenosis and atrial fibrillation

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Over the past decades, the incidence of mitral stenosis (MS) due to rheumatic fever has markedly decreased. Regardless, rheumatic fever remains associated with about 80% of all cases of MS, and so relatively the most relevant contributor to MS.[1] Aside from rare causes such as congenital MS, MS due to myxoma or MS following infiltrating diseases, another important cause of MS is indeed severe calcification of the mitral annulus and its leaflets. While this may become more frequent in the ageing population, it only rarely causes severe MS.[2] Due to the pathomechanism of MS, which includes left atrial enlargement due to constant pressure and volume overload, the prevalence of atrial fibrillation is high.[1] Oral anticoagulation is recommended not only in patients with atrial fibrillation, but also in those with sinus rhythm and dense spontaneous echocardiographic contrast and/or large left atrium.[3] Unfortunately, only few data are available on the complication rates of recommended medical treatments.

Importantly, treatment of MS, either by interventional or surgical approaches, is less supported by evidence-based studies compared with other valvular heart diseases, especially treatment of aortic stenosis.[3] In MS, the interventional therapy is percutaneous mitral balloon valvotomy and is reserved for symptomatic patients with mainly rheumatic disease, since calcification might make this approach less feasible. Mitral valve surgery is another option in patients not feasible for this interventional treatment or in younger patients with concomitant mitral regurgitation.[3] Overall, MS is often overlooked, especially in countries where rheumatic valve disease is less frequent. Therefore new data on the incidence, outcome and complication are of importance.

In their *Heart* paper, Kim *et al*[4] provide intriguing data on the incidence of MS with and without valvular atrial fibrillation in South Korea. They describe its association with relevant endpoints. Based on the *Health Insurance Review and Assessment Service* database, which covers 98% of the overall South Korean population, Kim *et al*[4] describe a cohort of 42 075 patients diagnosed with MS between 2007 and 2016. In their study, the authors observed a decreasing incidence of MS during the study period, from 10.3 to 3.6 cases per 100 000 inhabitants. While this data source does not allow indepth analysis of patient data, it is important due to the large population it covers and is also used in other fields.[5] Kim *et al* show that the prevalence of atrial fibrillation in patients with MS was constant over the study period and exceeded 60%.[4] The use of anticoagulant therapies in patients with MS increased steadily during the study period, which reflects the increasing awareness regarding the need for such treatments in patients with MS with and without atrial fibrillation. Importantly, the increasing use of anticoagulants was not accompanied by a decrease, but by a plateauing incidence of stroke/systemic embolism in affected patients. Furthermore, there was also an increase in the incidence of intracranial haemorrhage in patients with MS and atrial fibrillation, highlighting the need for refined therapies in this high-risk population.

This paper is of great value as it refocuses attention to valvular atrial fibrillation, MS and their associated risks. Additionally, it indicates that the incidence of MS is higher outside of Europe, with a recent Swedish register study reporting an incidence rate of about 2 per 100 000 persons between 2003 and 2010.[6] Kim *et al* now raise the interesting question of whether anticoagulant treatment in patients with MS should be revised, for example, introducing novel oral anticoagulants (NOACs) as primary anticoagulants over vitamin K antagonists.[4] This statement is based on the finding of the plateauing risk of stroke and thrombotic events, as well as the increasing incidence of intracerebral bleeding. Ultimately, the available evidence does not provide an answer to this question, as patients with MS were excluded from the respective NOAC trials. However, the observed high associated risk in this population and the higher incidence in non-Western countries underline the need for randomised controlled trials of anticoagulant therapy in patients with MS.

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