

## Focus issue on diagnostic work-up and prognostic assessment in cardiac disease

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## Focus issue on diagnostic work-up and prognostic assessment in cardiac disease

This issue of *Acta Cardiologica* is devoted to the diagnostic work-up of cardiomyopathies and ischaemic heart disease. Both review and original articles are dealing with the evaluation and management of cardiac disorders related to amyloidosis, sarcoidosis, obstructive sleep apnoea, and COVID-19 infection.

Sarcoidosis is an inflammatory condition that can affect multiple organs. Up to a quarter of patients with systemic sarcoidosis may show signs of cardiac involvement, usually involving the myocardium and rarely the pericardium. Cardiac involvement can be difficult to detect and diagnose due to the focal nature of the disease, which however can be responsible for cardiac mechanical asynchrony. Kemal Cabuk et al. evaluated 44 patients with systemic sarcoidosis who did not have any overt heart disease or known cardiac sarcoidosis and who underwent echocardiography [1]. They showed that when compared with age- and sex-matched controls, patients with sarcoidosis had increased systolic dyssynchrony index measured by three-dimensional (3D) echocardiography, and that this index could be used as a marker to identify patients with cardiac involvement of sarcoidosis in the early phase. Unger et al. reported the case of a patient presenting with pericarditis as the first manifestation of sarcoidosis [2]. The review of the literature associated with the description of this clinical case underlined the importance of thinking that sarcoidosis should be considered in the differential diagnosis of patients with pericardial disease.

Cardiac amyloidosis is a progressive infiltrative disease that should be considered in patients with increased wall thickness in the presence of cardiac or extracardiac red flags (e.g. proteinuria (even mild), macroglossia, skin bruises, and carpal tunnel syndrome) and/or in specific clinical situations [3]. There are three main types of amyloidosis associated with cardiac involvement: light chain (AL), familial or senile (ATTR) and secondary amyloidosis (AA). A diagnostic algorithm based initially on the use of bone scintigraphy coupled to assessment for monoclonal proteins allows appropriate diagnosis in patients with suggestive signs/symptoms. de Marneffe et al. summarised very well in a literature review the diagnostic and therapeutic management of cardiac amyloidosis [3].

Obstructive sleep apnoea syndrome (OSAS) is associated with cardiovascular mortality and morbidity. Several studies have reported that it may affect the left ventricle (LV). 3D speckle-tracking echocardiography (STE) is an advanced imaging technique designed for left ventricular

myocardial deformation analysis based on 3D data sets. The study of Wang et al. aimed at assessing the association between OSAS and LV structure and function in patients with diabetes mellitus. The authors concluded that 3D-STE plus conventional echocardiography could detect the subclinical LV alterations in diabetes mellitus patients with or without OSAS [4].

Patients with COVID-19 have been shown to be at increased risk of a broad range of cardiovascular disorders including cerebrovascular disorders, dysrhythmias, ischaemic and non-ischaemic heart disease, pericarditis, myocarditis, heart failure, and thromboembolic disease. Microvascular disease is considered as one of the main drivers of morbidity and mortality in severe COVID-19. Thrombolysis in Myocardial Infarction Frame Count (TFC) is an index that provides a quantitative evaluation of coronary microvascular dysfunction. In their single-center retrospective study concerning 210 patients including 48 with a history of COVID-19, Bilge et al. showed that TFC may be elevated due to coronary microvascular dysfunction in patients with a history of COVID-19 [5]. Aktürk et al. reported the management and clinical outcomes of 239 patients with acute coronary syndrome (ACS) before and during pandemic [6]. Although the overall characteristics were worse in ACS patients during the pandemic, the mortality rate of ACS was similar in both pre-pandemic and pandemic era. Fractional flow reserve (FFR) has been established as the gold standard in the physiological assessment of coronary obstructions severity. Quantitative flow ratio (QFR) is a wire-free method for detection of significant ischaemia based on 3D reconstruction of angiographic images and TIMI frame count. Recently, Kasinadhuni et al. shown in 56 interrogated coronary vessels that QFR had a good diagnostic performance in comparison to the gold standard FFR for physiological assessment of intermediate lesions [7]. The editorial commentary that accompanies it testifies to the differences and advantages between the 2 techniques [8]. Neutrophil-to-lymphocyte ratio (NLR), one of the composite biomarker of systemic inflammatory status, has proved promising in predicting clinical outcomes in various cardiovascular disease. In their study, Li et al. showed that NLR value was positively related to the severity of coronary artery lesion and independently predicted cardiovascular mortality in patients with unstable angina [9].

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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