

EDITORIAL



Focus on valvular heart disease

This issue of *Acta Cardiologica* is devoted to valvular heart disease. More than 10 million Europeans live with valvular heart disease, where decision-making involves accurate diagnosis, timing of intervention, risk assessment and, based on this, selection of the most appropriate type of intervention [1].

Infective endocarditis (IE) is still burdened by high morbidity and mortality despite improvements in diagnostic and therapeutic strategies [2,3]. The diagnosis of IE remains challenging and includes identification of the infective pathogen and detection of cardiac lesions and noncardiac localisation of the disease. In daily practice, the diagnosis of IE relies on the modified Duke criteria that use typical clinical signs and symptoms and positive blood cultures to reach a definitive diagnosis when the valve can be shown to be affected on echocardiography. However, echocardiography is relatively insensitive in the early stage of the disease (morphological criteria) or may be difficult to interpret in cases of cardiac device-related IE. For improving the accuracy of the Duke criteria, other imaging modalities such as multidetector computed tomography (CT), ¹⁸F-fluorodeoxyglucose (FDG) positron emission tomography (PET), and single-photon emission computed tomography (SPECT) have recently gained importance [4]. In their study, Rogiers et al. confirmed the prognostic performance of ¹⁸F-FDG PET/CT in 76 patients treated for definite native valve or prosthetic valve IE [5]. Right-sided IE accounts for 5% to 10% of all IE cases, and compared to left-sided IE, it is more often associated with intravenous drug use, intracardiac devices, and central venous catheters, all of which have become more prevalent over the last decade [2]. Zhiya Chong et al. reported a series of cases of severe tricuspid valve IE related to intravenous drug abuse, associated despite, a fulminant initial presentation, with a relatively good longer-term prognosis under treatment [6].

While rheumatic mitral stenosis is frequently encountered in young individuals in developing countries, degenerative mitral stenosis is seen in the elderly in developed countries and its prevalence is increasing. Degenerative mitral stenosis is usually a late presentation of mitral annular calcification (MAC). Treatment for mitral stenosis involves medical therapy, percutaneous mitral valvuloplasty, and surgical therapy. Percutaneous mitral balloon valvotomy, has become the procedure of choice for patients with symptomatic severe mitral stenosis who have suitable mitral valve morphology on

echocardiography [7]. In this issue, Liu et al. reported the results of the systematic review of the existing literature on the effects of percutaneous balloon mitral valvuloplasty (PBMV) in patients with mitral stenosis and atrial fibrillation (AF) versus sinus rhythm (SR). Fifteen studies were included involving 6351 patients. Current data seem to suggest that PBMV may be less effective in patients with AF than in those with SR. However, early treatment and appropriate management of AF patients undergoing PBMV can benefit both immediate and long-term outcomes [8].

In extremely rare cases, lithium used to treat bipolar disorder can cause complete atrioventricular block which could lead to diastolic mitral regurgitation and cardiogenic shock [9].

Calcific aortic valve stenosis (CAVS) is the most common valvular heart disease in industrialised countries with increasing prevalence in ageing populations and is becoming a growing economic and societal burden. CAVS has long been considered degenerative in nature, while recent evidence suggests that specific inflammatory, osteogenic molecular pathways fuelled by genetic mutations, sex, hemodynamic forces and certain cardiovascular risk factors (hypertension, dyslipidemia) appear involved in the disease process [10]. Cheng et al. showed that age is a key independent predictor of CAVS in patients with coronary artery calcification. History of cerebrovascular disease was also an independent predictor of CAVS, but only in men and in patients aged 60–69 years. Furthermore, their results indicate that a history of cerebral infarction may be used as a risk factor when identifying CAVS in patients with coronary artery calcification [11]. Lipoprotein(a) has also emerged as a strong risk factor for CAVS development and progression. In their study, Wang et al. showed that Lp(a) was independently associated with the prevalence of CAVS in patients with new-onset acute myocardial infarction [12]. Transcatheter aortic valve implantation (TAVI) is an established treatment option for patients with symptomatic severe CAVS who are at intermediate to high/prohibitive surgical risk. COVID-19 has had an unprecedented impact on the management of patients with symptomatic severe CAVS since non-urgent cardiovascular diagnostics and interventions were deferred. However, the COVID-19 pandemic has acted as a catalyst for change in healthcare systems worldwide. To examine the impact of an adapted hospitalisation pathways, Angellotti et al. reported the

outcome of 315 patients who received TAVI at a tertiary level hospital during the COVID-19 pandemic. They showed that COVID-19 pandemic did not affect the safety and effectiveness of TAVI. Despite the increased time from diagnosis to procedure and a more complex clinical profile of patients at baseline, the revised inpatient pathway allowed for inpatient procedures to be resumed without affecting patient and healthcare worker safety [13]. The prognosis of patients undergoing TAVI largely depends on underlying risk factors, operative risk, operator expertise, and technical conditions. Avci et al. showed that C-reactive to albumin ratio may represent an independent predictor of long-term mortality in patients undergoing TAVI [14]. Although it has been proven in numerous trials and registries to be a safe and effective treatment, many patients undergoing TAVI are at the extremes of age and disease and are therefore prone to a higher rate of complications [15]. Bezzeccheri et al. reported the trends and outcomes of TAVI performed in their centre in Belgium. The study consisted of 361 consecutive patients. Favourable trends were observed from 2008 to 2020, with an improvement in periprocedural outcomes and cardiovascular mortality at 1-year. These improvements could depend on increased expertise because mortality reduction was noted only after reaching a significant procedure volume [16]. Stroke remains a major concern after TAVI. The added value of cerebral protection devices is still uncertain. In their study, von Kemp et al. show that routine use of the Sentinel cerebral protection system® in CT-screened (for feasibility of Sentinel implantation) TAVI patients is feasible with high procedural success, without significant adverse events and without counteracting the evolution towards minimally invasive TAVI [17].

Tricuspid regurgitation is a prevalent disease associated with high morbidity and mortality, with few treatment options. Transcatheter edge-to-edge repair has been shown to be feasible with promising results. In this issue, a wonderful case of transcatheter edge-to-edge repair of torrential tricuspid regurgitation was discussed [18].

Para-aortic adipose tissue (PAT) is the local adipose tissue that externally surrounds the aorta. It may contribute to aortic atherosclerosis and enlargement. In their study, Adar et al. reported the possible relationship between PAT measured on transthoracic echocardiography with ascending aortic dimensions [19].

Finally, Claeys et al. reported a summary of 2020 ESC guidelines on non-STE acute coronary syndrome, adult congenital heart disease, sports cardiology and atrial fibrillation [20].

Disclosure statement

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

ORCID

Patrizio Lancellotti  <http://orcid.org/0000-0002-0804-8194>

References

- [1] Lancellotti P, Rosenhek R, Pibarot P, et al. ESC working group on valvular heart disease position paper—heart valve clinics: organization, structure, and experiences. *Eur Heart J.* 2013; 34(21):1597–1606.
- [2] Habib G, Lancellotti P, Antunes AJ, ESC Scientific Document Group, et al. ESC guidelines for the management of infective endocarditis. *Eur Heart J.* 2015;36(44):3075–3128.
- [3] Vandoren V, Dujardin K, Timmermans PJ. Acute coronary syndrome related to prosthetic valve endocarditis. *Acta Cardiologica.* 2022;77:978–979.
- [4] Oliveira I, Bragança B, Neto A, et al. Infective endocarditis nightmare: a bold solution for a devastating scenario. *Acta Cardiologica.* 2022;77:970–971.
- [5] Rogiers M, Jentjens S, Guler I, et al. Value of 18F-FDG pet/CT for prognostic assessment in patients with infective endocarditis. *Acta Cardiologica.* 2022;77:900–909.
- [6] Zhiya Chong C, Cherian R, Ng P, et al. Clinical outcomes of severe tricuspid valve infective endocarditis related to intravenous drug abuse – a case series. *Acta Cardiologica.* 2021; 77:884–889.
- [7] Unger P, David-Cojocariu A, de Hemptinne Q, et al. Percutaneous mitral commissurotomy, mitral stenosis and atrial fibrillation: the good, the bad and the ugly. *Acta Cardiologica.* 2021;77:982–983.
- [8] Liu B, Wang Y, Liu Y, et al. Effects of percutaneous balloon mitral valvuloplasty in patients with mitral stenosis and atrial fibrillation: a systematic review and meta-analysis. *Acta Cardiologica.* 2021;77:890–899.
- [9] Kalpakos T, Vermeersch G, Hendriks B, et al. Complete atrio-ventricular block with diastolic mitral regurgitation due to severe lithium intoxication. A case report. *Acta Cardiologica.* 2022;77:873–878.
- [10] Mukhtar Kawoos G, Mohanan Nair KK, Sasidharan B, et al. Valvular and supra-avalvular aortic stenosis fifteen years after coronary artery bypass grafting in a patient with familial hypercholesterolaemia. *Acta Cardiologica.* 2022;77: 972–973.
- [11] Cheng SQ, Liu NF, Fang LJ, et al. Factors predicting the occurrence of aortic valve calcification in patients with coronary artery calcification in China. *Acta Cardiologica.* 2022;77: 910–917.
- [12] Wang Z, Li L, Liu N. The nonlinear correlation between lipoprotein (a) and the prevalence of aortic valve calcification in patients with new-onset acute myocardial infarction. *Acta Cardiologica.* 2022;77:950–959.
- [13] Angellotti D, Manzo R, Castiello DS, et al. Impact of COVID-19 pandemic on timing and early clinical outcomes of transcatheter aortic valve implantation. *Acta Cardiologica.* 2022; 77:937–942.
- [14] Avci Y, Demir AR, Duran M, et al. The prognostic value of C-reactive protein to albumin ratio in patients undergoing transcatheter aortic valve implantation. *Acta Cardiologica.* 2022;77:930–936.
- [15] Vandenbossche JL, Briki R, de Hemptinne Q, et al. Trends and outcomes in transcatheter aortic valve implantation: evolution of a revolution. *Acta Cardiologica.* 2022;77: 984–985.
- [16] Bezzeccheri A, Vermeersch P, Verhey S, et al. Trends and outcomes in transcatheter aortic valve implantation in Belgium: a 13-year single Centre experience. *Acta Cardiologica.* 2022;77:960–969.

- [17] von Kemp MJ, Floré V, Wah Lau C, et al. Impact of routine use of a cerebral protection device on the TAVR procedure and its short-term outcomes: a single-Centre experience. *Acta Cardiologica*. 2022;77:922–929.
- [18] Al Hage E, Scarfo S, Lochy S, et al. Transcatheter edge-to-edge repair of a torrential tricuspid regurgitation with a single 4th generation TriClip™ system. *Acta Cardiologica*. 2022; 77:974–975.
- [19] Adar A, Onalan O, Cakan F, et al. Evaluation of the relationship between Para-aortic adipose tissue and ascending aortic diameter using a new method. *Acta Cardiologica*. 2022;77:943–949.
- [20] Claeys MJ, Bondue A, Lancellotti P, et al. Summary of 2020 ESC guidelines on non-STE ACS, adult congenital heart disease, sports cardiology and atrial fibrillation. *Acta Cardiologica*. 2022;77:864–872.

Patrizio Lancellotti 

*Department of Cardiology, CHU SartTilman,
University of Liège Hospital,*

GIGA Cardiovascular Sciences, Liège, Belgium

*Gruppo Villa Maria Care and Research, Maria Cecilia
Hospital, Cotignola, and Anthea Hospital, Bari, Italy*

 plancellotti@chuliege.be,  plancellotti@chu.ulg.ac.be

Hélène Petitjean
*Department of Cardiology, CHU SartTilman, University of
Liège Hospital, GIGA Cardiovascular Sciences,
Liège, Belgium*

Adriana Postolache
*Department of Cardiology, CHU SartTilman, University of
Liège Hospital, GIGA Cardiovascular Sciences, Liège,
Belgium*

Bernard Cosyns
*Centrum Voor Harten Vaatziekten (CHVZ), Vrije Universiteit
Brussel (VUB), Universitair Ziekenhuis Brussel (UZ Brussel),
Brussels, Belgium*
*In vivo Cellular and Molecular Imaging (ICMI) Center, Vrije
Universiteit Brussel (VUB), Brussels, Belgium*

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