Heartbeat: diagnosis and management of pericardial disease

Pericardial disease is a common clinical problem yet treatment remains empiric with few clinical trials evaluating medical therapy. Klein and colleagues hypothesised that rilonacept, an inhibitor of both interleukin-1 alpha (IL-1α) and IL-1β, would reduce pain and signs of inflammation, while improving health-related quality of life in patients with recurrent pericarditis. Of the 25 patients enrolled in this phase II clinical trial, pericarditis pain was reduced from 4.5 to 0.7 on an 11-point pain scale and C reactive protein levels decreased from a mean of 4.62 mg/dL at baseline to 0.38 mg/dL at a median time of 9 days after treatment, with most being able to discontinue corticosteroid therapy (figure 1).

As Imazio concludes in an editorial, ‘anti-IL-1 agents appear to be the major advance in medical therapy of recurrent pericarditis in the last 5 years (figure 2). If efficacy and safety will be confirmed, these drugs may represent a paradigm shift in the treatment of recurrent pericarditis, allowing a more targeted and personalised therapy for patients showing an inflammatory phenotype (eg, fever and/or C-reactive elevation at each recurrence’.

Cardiac compression due to pericardial effusion (tamponade physiology) or pericardial scarring and fibrosis (pericardial constriction) are the ends of a spectrum of pericardial compressive syndromes. Effusive-constrictive pericarditis is less common but occurs when there is ‘concurrency of a tense pericardial effusion and constriction of the heart by the visceral pericardium’ as reviewed by Janus and Hoit in this issue of Heart. Effusive-constrictive pericarditis may be related to malignancy, irradiation therapy, prior cardiac surgery or other causes. Diagnosis and management are challenging so readers will find this comprehensive article helpful in diagnosis and management of patients with fluid overload or low cardiac output that might be due to pericardial disease (figure 3).

Inequities in clinical care for cardiovascular disease (CVD) contribute to higher rates of adverse outcomes. In this issue of Heart, Pinho-Gomes and colleagues investigated sex differences in the prevalence, treatment and control of major CVD risk factors in the UK based on data from the Health Survey for England (figure 4).

Overall, men had a higher number of CVD risk factors (smoking, hypertension, overweight and dyslipidaemia) than women. Between 2012 and 2017, there was an increase in the number of individuals with none of these risk factors, from 32% to 36% in women and from 28% to 29% in men. Over time, greater numbers of patients of both sexes received treatment and achieved control of hypertension and diabetes, although control still remained suboptimal for both risk factors (hypertension 51%, diabetes 20%). Dyslipidaemia treatment rates were poor in both sexes but were lower in women compared with men (21% vs 28%). The authors conclude

Correspondence to Professor Catherine M Otto, Division of Cardiology, University of Washington, Seattle, WA 98195, USA; cotto@uw.edu

Figure 1 NRS scores (pain) and CRP levels in symptomatic patients with elevated CRP. CRP, C reactive protein; NRS, Numeric Rating Scale; RP, recurrent pericarditis.

Figure 2 Pathophysiology of pericardial inflammation and targets for pharmacological intervention: inflamed pericardial cells release IL-1-alpha that further triggers release of IL-1-beta from inflammatory cells. Colchicine inhibits inflammatory cells and the inflammasome, while anti-IL-1 agents block IL-1-alpha and/or beta. IL, interleukin.
that ‘A combination of public health policy and individually tailored interventions is required to further reduce the burden of cardiovascular disease in England.’

Also in this issue of Heart is a short summary of the key changes in the European Society of Cardiology 2020 Guidelines for management of acute coronary syndromes without ST-elevation. A few of the major points are use of 0 and 1 hours rapid rule-out protocols, a preference for prasugrel over ticagrelor in patients undergoing invasive intervention, delayed angiography after resuscitated out-of-hospital cardiac arrest in haemodynamically stable patients and consideration of complete revascularisation in patients with multivessel disease who are not in cardiogenic shock.

The unfolding story of the interaction between the COVID-19 pandemic and...
cardiovascular mortality is addressed in a systematic review and meta-analysis showing that despite reduced rates of admission for ST-elevation myocardial infarction (STEMI) during the COVID-19 pandemic, hospital mortality was unchanged.6 Danchin and Marijon7 COVID-19 pandemic, hospital mortality admission for ST-elevating myocardial infarction (STEMI) during the COVID-19 pandemic, hospital mortality was unchanged.6 Danchin and Marijon7 showing that despite reduced rates of cardiovascular mortality is addressed in a systematic review and meta-analysis showing that despite reduced rates of admission for ST-elevation myocardial infarction (STEMI) during the COVID-19 pandemic, hospital mortality was unchanged.6 Danchin and Marijon7 cardiovascular mortality is addressed in a systematic review and meta-analysis showing that despite reduced rates of admission for ST-elevation myocardial infarction (STEMI) during the COVID-19 pandemic, hospital mortality was unchanged.6 Danchin and Marijon7 Figure 5 Patient-centred imaging and common indications for each modality. CMR, cardiovascular magnetic resonance; CTA, CT angiography; FDG, fluorodeoxyglucose. The Education in Heart article10 in this issue defines multimodality imaging as ‘using a patient-centred approach to select the best available imaging test when evaluating patients with known or suspected cardiovascular disease’ (figure 5). The article then focuses on multimodality imaging for ischaemic heart disease; discussing the strengths and limitation of exercise treadmill testing, coronary CT angiography, exercise or pharmacological single-photon emission (SPECT) or positron emission tomographic (PET) myocardial perfusion imaging, stress cardiovascular magnetic resonance or stress echocardiography. The authors point out that ‘Effective delivery of multimodality imaging requires collaboration between imagers and referring physicians, as well as training of dedicated future multimodality imaging experts.’ Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors. Competing interests None declared.

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ORCID iD Catherine M Otto http://orcid.org/0000-0002-0527-9392

REFERENCES

1 Klein AL, Lin D, Cremer PC. Efficacy and safety of rilonacept for recurrent pericarditis: results from a phase II clinical trial. Heart 2021;107:488–496.


9 Singh T, Nevby DE. Is the fear of disease worse than the disease itself? Heart 2021;107:91–2.

10 Madamanchi C, Di Carli MF, Blankstein R. What is multimodality cardiovascular imaging and how can it be delivered? Heart 2021;107:503–8.