# Heartbeat: Highlights from the issue

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The Editor's Choice article in this issue of *Heart* is "Validity of Charlson comorbidity index (CCI) in patients hospitalised with acute coronary syndrome: Insights from the nationwide AMIS Plus Registry 2002–2012" by Dr Radovanoic and colleagues. In this large prospective multicenter observation study of acute coronary syndrome patients, comorbid conditions affected not only the initial presentation but also the therapeutic approach and clinical outcomes. The greatest effect on mortality was seen in those with heart failure, diabetes, renal failure or a metastatic tumour (*see page 288*).

In the accompanying editorial, Dr Maeder emphasises that whereas most randomised studies of intervention for acute coronary syndrome enrolled relatively low risk patients, in actual practice about 50% of patients have significant comorbidities (*see page 268*). His schematic presentation of the effect of an intervention in a low risk versus high risk patient illustrates this point. In the patient with a low CCI (see figure 1), coronary risk (shown in grey) reduction with intervention combined with an unchanged small non-coronary risk (shown in black) results in a significant decrease in overall risk. In contrast, with a higher CCI, the effect of successful intervention is to reduce coronary risk but leave non coronary risk unchanged if there are no complications (A) or even increase total risk if intervention is complicated by a procedure related infarction or noncoronary complication (B). In the worst case scenario (C), intervention is not possible or unsuccessful, so coronary risk is unchanged, but overall risk increased due to a noncoronary complication such as stroke or renal failure.

Clinical trials are needed that address the role of coronary intervention in patients with acute coronary syndrome at higher risk, specifically those with comorbidities such as renal failure, heart failure or previous stroke.

A systematic review and meta-analysis by Dr Providenica and colleagues examined the safely and efficacy of dabigatran versus warfarin in patients undergoing catheter ablation for atrial fibrillation. Using a standardised search strategy, 14 studies with a total of 4782 patients undergoing catheter ablation for atrial fibrillation were identified, with patients treated either with dabigatran (n=1823) or warfarin (n=2959) (*see page 324*). The pooled data analysis showed no difference in thromboembolic events or major bleeding between treatment groups; there were no deaths reported. Total event rates were quite low with only 15 patients (0.31%) with stroke or thromboembolism and 67 patients (1.4%) with major bleeding. Minor bleeding occurred in 4.6% overall with relative risk reduction of 35% in favour of dabigatran (95% CI 7 to 55%, p=0.02).

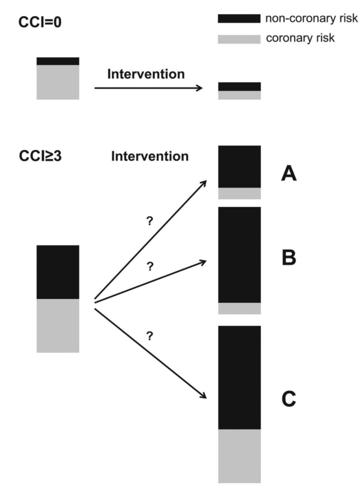


**Figure 1** Schematic presentation of the effect of an intervention (eg, percutaneous coronary intervention) on outcomes in a patient without comorbidities (Charlson Comorbidity Index (CCI) =0) and a patient with a significant burden of comorbidities (CCI≥3). CCI=0: comorbidities weighted with zero points according to CCI. CCI≥3: comorbidities weighted with three or more points according to CCI.

The authors conclude that rates of thromboembolic events and major bleeding are similar for patients treated with dabigatran or warfarin in the setting of catheter ablation for atrial fibrillation.

The Education in Heart review by Dr Leong and colleagues provides a concise and clear summary of the role of multimodality imaging in valvular heart disease (*see page 336*). Increasingly, clinical practice relies on additional imaging with cardiac magnetic resonance or computed tomographic imaging, in addition to echocardiography, in adults with valvular heart disease. Flow charts are also provided, (see figure 2) outlining the clinical approach to evaluation of aortic stenosis.

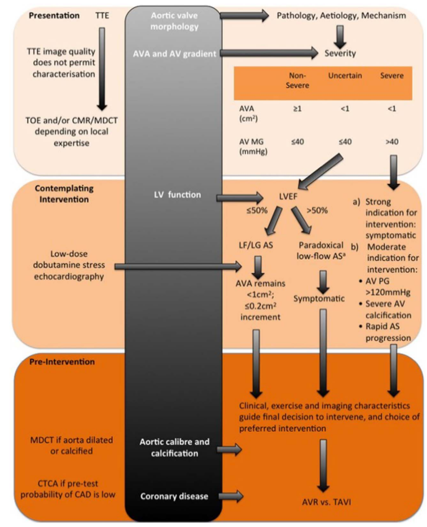


**Figure 2** Flow diagram illustrating a clinical approach to the evaluation of aortic stenosis (AS). The grey box contains the parameters assessed. To its left are the imaging modalities used to assess these parameters, and to its right are the clinical implications of the imaging's findings. AV, aortic valve; AVA, aortic valve area; AVR, aortic valve replacement; CAD, coronary artery disease; CMR, cardiovascular magnetic resonance; CTA, CT angiography; CTCA, CT coronary angiogram; DSE, dobutamine stress echocardiogram; LF/LG, low flow/low gradient; LV, left ventricular; LVEF, left ventricular ejection fraction; MDCT, multidetector row CT; MG, mean gradient; PG, peak gradient; TAVI, transcatheter aortic valve implantation; TOE, transoesophageal echocardiography; TTE, transthoracic echocardiography. aParadoxical low flow AS is an emerging diagnosis that must be made, taking other potential causes of symptoms into consideration.

Clinicians caring for valve disease patients will find this review a quick way to update their knowledge in this area.

Be sure to try the Image Challenge by Dr Ferreira and colleagues which illustrates how multimodality imaging allows accurate diagnosis of the causes of myocardial disease.

**Competing interests** None.

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