Heartbeat: healthy lifestyles require community support, not just personal willpower

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Cardiovascular risk factors typically are assessed at only one point in time with little data on whether the *duration* of a favourable cardiovascular risk profile in middle age affects cardiovascular outcomes later in life. In a study of 8020 participants (median age 50 years, 48% men) followed from a median of 15 years, ideal cardiovascular health (iCVH) was defined by body mass index, blood pressure, fasting glucose, total cholesterol, cigarette smoking, alcohol drinking and physical activity.[1] Compared with those with iCVH for <5 years, there was a lower risk of cardiovascular disease in those with iCVH for 5–10 years (HR 0.83, 955 CI 0.54 to 1.27), with an even lower risk in those with iCVH for 10 years or longer (HR 0.22, 95% CI 0.08 to 0.60). A similar stepwise lower risk for chronic kidney disease also was observed (figure 1).

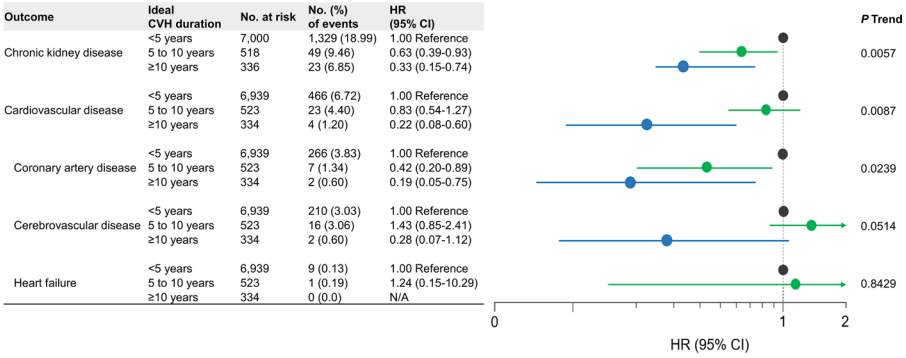

Figure 1 Association of ideal cardiovascular health (CVH) duration and risk of chronic kidney disease and cardiovascular disease.

Lamprea-Montealegre notes in an editorial[2] that although the prevalence of iCVH was low in this (and other) studies, the benefits of maintaining iCHV for more than 10 years are substantial with a relative risk reduction of 70% in the incidence of chronic kidney disease and 80% in the incidence of cardiovascular disease compared with those with iCVH for <5 years. However, he argues that our current approach of the healthcare provider recommending each patient change their unhealthy behaviours 'is fundamentally flawed by the false assumption that choices made by individuals are made freely, without regard to the larger social context that enables their adoption.' Thus, rather than depending on individual willpower, 'our health systems must invest in creating conditions across the communities they serve that support healthy lifestyles for all.'

Everyone agrees that 'shared decision-making' is important when intervention is being considered for a patient with severe valvular heart disease. Yet, there is little data on exactly what we mean by shared decision-making (SDM) and whether this approach is widely implemented in clinical practice. These issues were explored in a semistructured interview study of cardiothoracic surgeons, interventional cardiologists, nurse practitioners and physician assistants involved in decision-making for patients with severe aortic stenosis.[3] Key patterns identified by this process were discrepancies between patients' wishes and treatment options, lack of information about patient preferences, and institutional and patient factors that complicated SDM (figure 2). Interestingly, patient participation in SCM was not considered essential by all providers and patients were not included in this study.

In the accompanying editorial, Schoon[4] provides a rigorous definition of SDM outlines the essential elements and discusses current barriers to effective SDM in management of adults with valvular heart disease. She recommends: 'To realise patient-centred care in complex patients, we need (1) to change our organisation by planning interdisciplinary meetings with

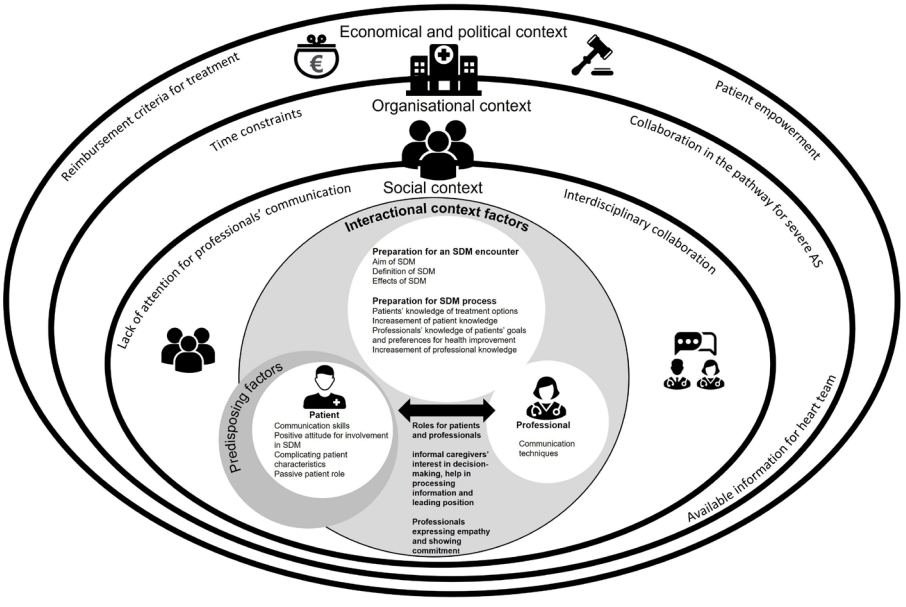

Figure 2 Identified themes structured in taxonomy. Adapted from the adapted taxonomy for barriers of and facilitators to shared decision-making.[9] AS, aortic stenosis; SDM, shared decision-making.

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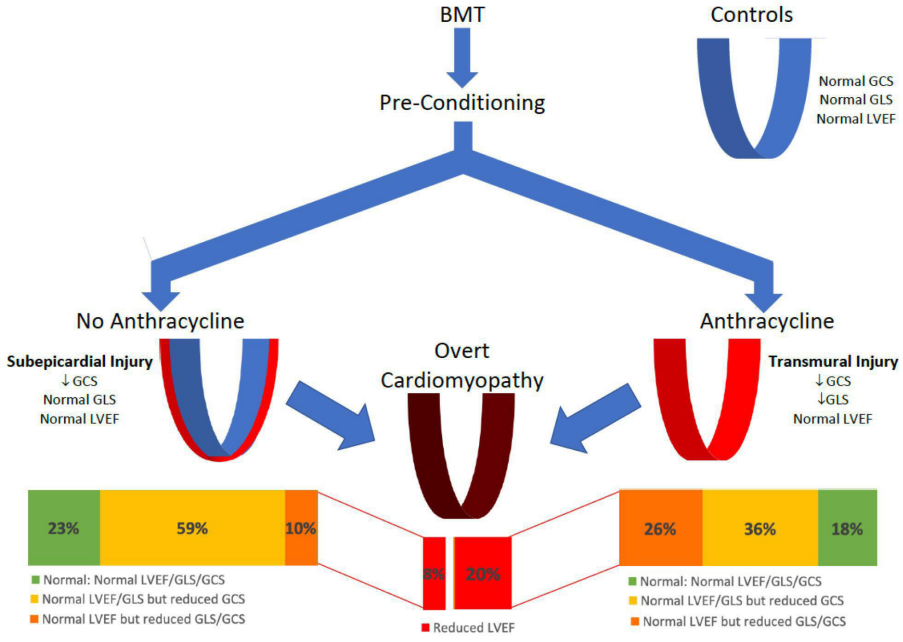

Figure 3 Utility of GCS in diagnosing subclinical LV dysfunction. BMT, bone marrow transplantation; GCS, global circumferential strain; GLS, global longitudinal strain; LVEF, left ventricular ejection fraction.

referring specialists and general practitioners and more patient involvement, (2) to train our physicians in SDM and annually evaluate their SDM skills and (3) to incorporate SDM outcomes in quality of care standards.'

Two interesting articles in this issue of *Heart* evaluate the value of echocardiographic left ventricular (LV) strain measurements in clinical practice. Massera and colleagues[5] report a significantly greater risk of incident coronary heart disease, even after adjustment for potential confounders, in older adults (mean age 73 years) with abnormal LV longitudinal strain (HR=1.25 per SD decrement, 95% CI 1.09 to 1.43) or LV early diastolic strain rate (HR=1.31 per SD decrement, 95% CI 1.14 to 1.50) in data from over 3000 participants in the community-based Cardiovascular Health Study followed for a median of 10 years. The authors suggest that early detection of LV myocardial dysfunction, as measured by LV strain, offers an opportunity for prevention and early treatment of coronary heart disease.

Deshmukh and colleagues[6] evaluated the use of LV strain measurements for monitoring 120 consecutive patients after bone marrow transplantation. Overall, about 75% of patients with an LV ejection fraction >53% had an abnormal LV strain, consistent with subclinical LV dysfunction which was seen both in patients who did or did not receive anthracycline therapy suggesting possible cardiotoxic effects of other agents used in pretransplant conditioning regimes (figure 3).

The *Education in Heart* article in this issue details the clinical approach (figure 4) to diagnosis and management of premature ventricular contractions (PVCs).[7] The key messages are:

- Isolated monomorphic PVCs without structural heart disease are generally benign.
- Frequent PVCs can cause reversible cardiomyopathy or aggravate an existing cardiomyopathy.
- Short coupled PVCs can trigger sustained ventricular fibrillation. These are often from the Purkinje tissue or rarely the outflow tract.
- Beta blockers are considered first-line therapy but have low efficacy. Catheter ablation and AADs are reasonable to suppress PVCs in appropriate patients.
- Ablation is often curative and success depends on location and accessibility of PVCs.
- Implantable defibrillators are reasonable in patients at higher risk of sudden cardiac death.

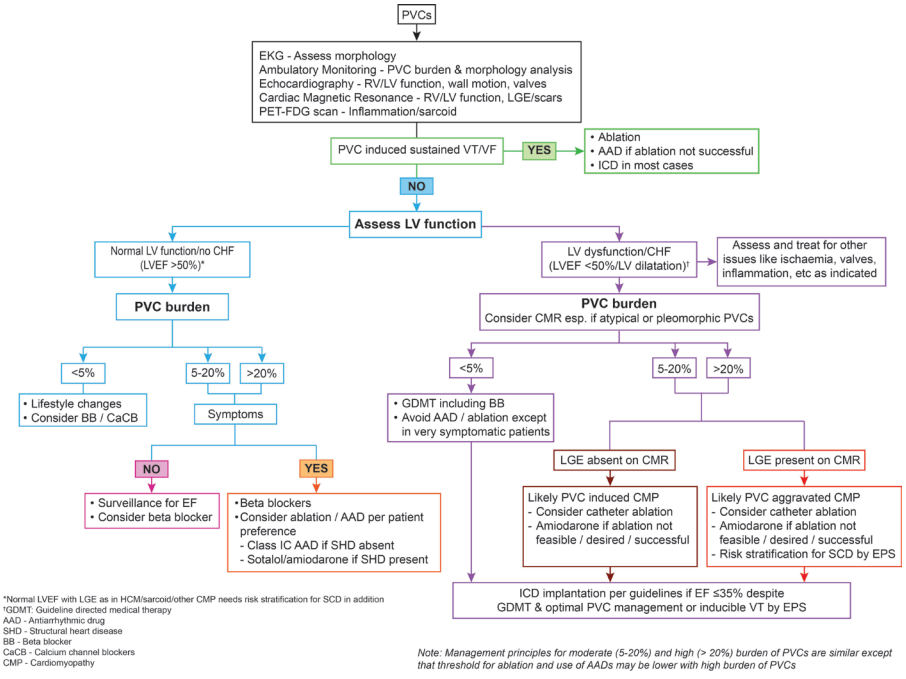

Figure 4 Flowchart showing a comprehensive algorithm to help in management of a patient with PVCs. BB, beta blocker; CaCB, calcium channel blocker; CHF, congestive heart failure; CMR, cardiac magnetic resonance; EF, ejection fraction; EKG, electrocardiography; EPS, electrophysiological study; FDG, fluorodeoxyglucose; HCM, hypertrophic cardiomyopathy; ICD, implantable cardioverter defibrillator; LGE, late gadolinium enhancement; LV, left ventricle; LVEF, left ventricular ejection fraction; PET, positron emission tomography; PVC, premature ventricular complex; RV, right ventricular; SCD, sudden cardiac death; VF, ventricular fibrillation; VT, ventricular tachycardia.

The *Cardiology in Focus* article in this issue[8] addresses the issue of cardiac transplantation in people living with HIV (PLWH). They note that 'Unfortunately, the global burden of advanced heart disease and HIV infection is greatest in countries with the least capacity to perform heart transplantation'. They argue that 'Given the increasing burden of advanced heart disease among PLWH, now is the time to improve access to cardiac transplantation for eligible PLWH worldwide, from high-income countries where disparities persist to low-income countries where solid organ transplantation programmes are few or only nascent. As the field of advanced heart therapies advance with innovations such as xenotransplantation, it is increasingly important to invest in equitable development of cardiac transplantation programmes globally, to avoid further widening current inequalities.'

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