Highlights from the issue

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Original research in this issue of *Heart* covers a range of topics including adult congenital heart disease, the role of imaging myocardial scar burden in adults being evaluated for an implantable cardiac defibrillator, socioeconomic inequalities in presentation and management of acute myocardial infarction, and a systematic review on the impact of smoking on the effects of clopidogrel. Some articles of particular interest to me are summarised here; readers should consult the complete articles for further details and should check the table of contents for the full content of this issue as only a few articles are highlighted here.

There currently is little data on long term outcomes in adults with congenital heart disease. Valente and colleagues ***(see page 247)*** studied outcome data in 873 adults with repaired tetralogy of Fallot from four large congenital heart disease centres in the USA, Canada and Europe. They evaluated the association between clinical outcomes and cardiac MRI measures of right and left ventricular anatomy and function, as well as clinical factors (see figure 1). Interestingly, they identified right ventricular hypertrophy, atrial tachyarrhythmias and both right and left ventricular systolic dysfunction as predictors of death and sustained VT.

In the accompanying editorial, Orwat and Diller ***(see page 185)*** suggest that this new data should prompt re-evaluation of the recommendations for intervention in asymptomatic tetralogy of Fallot patients who present with right ventricular outflow obstruction. Current guidelines focus more on the effects of right ventricular volume overload due to pulmonic regurgitation whereas this new data suggests that a lower threshold for intervention for increased right ventricular pressure also might be considered.

Heart failure during pregnancy is an important cause of maternal and fetal morbidity and mortality. Ruys and colleagues ***(see page 231)*** utilised an international observation registry to study the prevalence, risk factors and outcomes associated in heart failure in pregnant women with underlying structural heart disease (see figure 2). Heart failure occurred in 173 of 1321 patients (13.1%) with heart failure being more likely is women with previous heart failure, cardiomyopathy or pulmonary hypertension. The incidence of heart failure during pregnancy peaked at 26–34 weeks of gestation but was even more likely in the first month after delivery. Compared to women without heart failure, women with heart failure had higher maternal mortality (4.8% vs 0.5%) and higher rates of fetal death and prematurity. Heart failure also was strongly associated with preeclampsia.

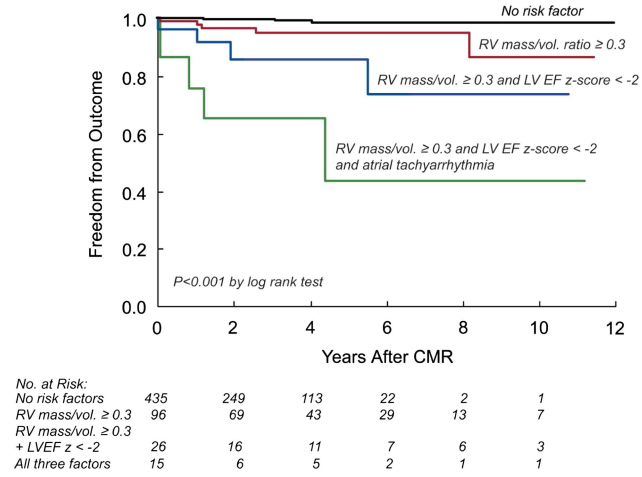

Figure 1 Kaplan–Meier curves for the outcome (death and sustained VT) according to risk factors.

The editorial by Krieger and Stout ***(see page 188)*** puts this new data in context as summarised in the table 1 below and point out that this data provides further support for estimating the risk of pregnancy in women with heart disease using risk scores such as the WHO categories or the Cardiac Disease in Pregnancy (CARPEG) score.

Recently there has been interest in the use of angiotensin receptor blocking agents for treatment of patients with Marfan syndrome. In a retrospective study of 215 paediatric Marfan patients, Mueller and colleagues ***(see page 214)*** observed a lower rate of aortic dilation in those treated with an angiotensin receptor blocking agent, compared to no treatment, with a similar

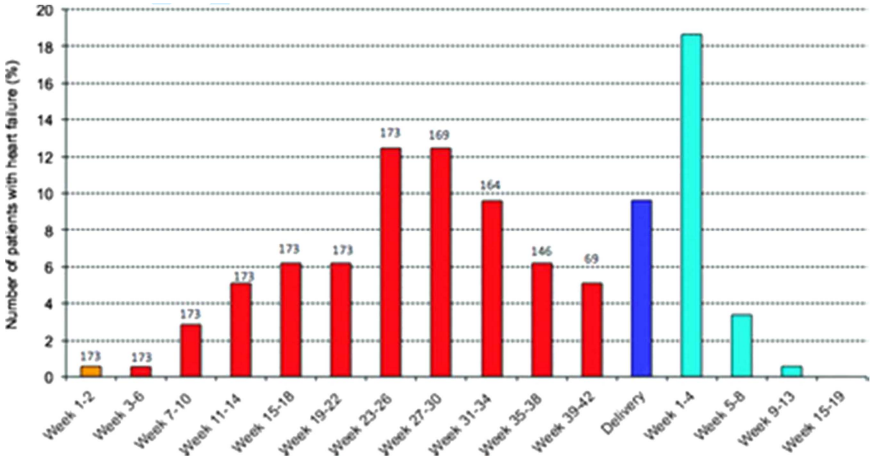

Figure 2 Occurrence of heart failure in patients with structural heart or ischaemic heart disease during and after pregnancy. Y-axis: Percentage of patients of total number of patients with heart failure. X-axis: In red, weeks of gestation; in dark blue, heart failure at the first day after delivery; and in light blue, heart failure in the weeks postpartum. Above the bars, the number of patients still pregnant at the beginning of the period is displayed.

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Table 1 Demographics and rates of heart failure in previous large studies of women with structural heart disease

First author	Year	N	Percentage of patients with congenital heart disease (CHD)	Baseline NYHA Class	History of heart failure prior to pregnancy	Heart failure episode during pregnancy	Maternal death	Diuretic use prior to pregnancy
Siu[3]	2001	599	74	I–II: 96%	2.6%	7%	0.5%	1%
CARPREG				III: 4%				
Khairy[2] Pregnancy outcomes in	2006	53	100	I—87.8% — 12.2%	7.8%	16.7%	0	7.8%
Women with CHD								
Drenthen[1]	2010	1302	100	NR	NR	1.6%	NR*	NR
ZAHARA								
Roos-Hesselink[5]	2012	1321	66	I—70% IV— 0.3%	11%	13.1%	1%	NR
ROPAC								

*Not reported as the data were derived only from a survivor cohort.
CARPREG, cardiac disease in pregnancy; NR, not reported; ROPAC, registry on pregnancy and cardiac disease.

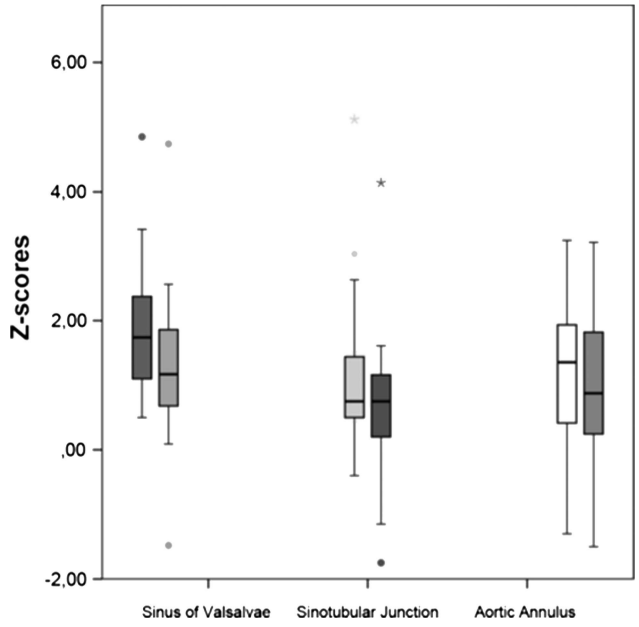

Figure 3 The rate of change of normalised aortic root diameter in patients treated with angiotensin II receptor blocker. z scores of sinus of Valsalva decreased significantly, whereas z scores of sinotubular junction and aortic annulus did not change.

magnitude of effect for treatment with a beta blocking agent (see figure 3). Although subject to the limitation of a retrospective observation study, these data lend further support to the concept that angiotensin receptor blockers, possibly in addition to beta blockers, may be beneficial in young patients with Marfan syndrome and progressive aortic dilation. Further studies are needed, ideally prospective randomised controlled clinical trials in both paediatric and adult populations.

The Education in Heart article in this issue by O'Mahony and Elliott ***(see page 254)*** provides a clear summary of the risk factors for sudden death in patients with hypertrophic cardiomyopathy. Major risk factors include non-sustained ventricular tachycardia, a family history of sudden cardiac death, an abnormal blood pressure response to exercise, unexplained syncope and a maximal left ventricular wall thickness of 30 mm or greater. The approach to clinical diagnosis and management and current guidelines for implantation of a cardiac defibrillator are discussed.

Be sure to try the Image Challenge—see is you can identify the echocardiographic abnormality on the still frame image or the online video in this patient with fevers and a history of coronary artery disease.

Competing interests None.

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