Heartbeat: Highlights from this issue

Catherine M Otto

A major challenge in improving population outcomes for cardiovascular disease is ensuring that appropriate medical therapy is both initiated and then maintained long term after the presenting clinical event. In this issue of ***Heart***, Dr. Grey and colleagues (***see page 770***) assessed continuation of statin therapy over 3 years for all patients with an acute coronary syndrome in New Zealand in 2007. Based on pharmaceutical dispensing data, they found that about 1/3 of patients were not on appropriate statin therapy over this time interval (see table 1).

Table 1 Proportion of people with a Medication Possession Ratio (MPR) ≥0.8 during follow-up

Time period	Number included in analysis*	Total cohort % with MPR ≥0.8†	Patients still alive at the end of follow-up (n=9490) % with MPR ≥0.8†
Year 1	11 348	69	71
Year 2	10 645	67	68
Year 3	9988	66	66
Years 1–3	11 348	66	68

*To account for deaths during follow-up, this analysis also excluded patients who did not spend any days out of hospital during that year.
†During the time period stated in the left-hand column of the table.

In an accompanying editorial, Dr. Roth (***see page 752***) comments on the value of approaches that allow researchers to "link large datasets in order to yield important insights into health and healthcare" and summarizes other studies showing low levels of adherence to statin therapy. As these data emphasize, guidelines for effective therapy of cardiovascular disease are not enough; we also need effective approaches to ensure patient compliance.

In an interesting study on the relationship between right ventricular (RV) pacing and left ventricular (LV) systolic function, Dr. Gierula and colleagues (***see page 765***) found that a protocol to reduce RV pacing by a mean of 49% was associated with a mean absolute improvement in LV ejection fraction of 6%, with no adverse effect on patient symptoms. The commentary by Dr. Poole (***see page 747***) points out that although substantial data suggests that RV pacing is detrimental in patients with heart failure, the effect of RV pacing in patients with normal or mildly reduced LV systolic function is less clear. Specifically, we do not know how many patients with initially normal LV function who require an RV pacer will develop heart failure over the long term. However, she agrees with the conclusions of Dr. Gierula and colleagues and suggest: "At the time of pacemaker pulse generator replacement, efforts should be made to reduce RV pacing as much as clinically reasonable. These changes should be balanced with other haemodynamic considerations, such as symptomatic chronotropic incompetence requiring rate-responsive pacing and appropriate basal pacing heart rate."

Patients with congenital heart disease are increasingly surviving to adulthood so that cardiologists now need to understand the anatomy, surgical repairs, and long term outcomes in this patient population. Survival after initial palliation for hypoplastic left heart syndrome (HLHS) requires either heart transplantation of the three-stage Norwood procedure. As summarized by Dr. Schranz (***see page 750***), the first step of the surgical approach is to separate the systemic and pulmonary arterial flow using either a Blalock–Taussig shunt or a right ventricular to pulmonary artery conduit. Next, systemic venous return is directed to the pulmonary artery, first from the superior vena cava (with takedown of the shunt) followed by a complete Fontan procedure. Newer hybrid approaches use both surgical and transcatheter approaches to achieve this repair. In a series of 138 HLHS patients, Dr. Lloyd and colleagues (***see page 775***) compared outcomes with the standard surgical approach to a hybrid approach for the first stage of this procedure, using a combination of surgical pulmonary artery banding and intraoperative stenting of the arterial duct to avoid the risk of cardiopulmonary bypass. At one year, there was no statistically significant difference in survival with these approaches, even though the patients undergoing the hybrid

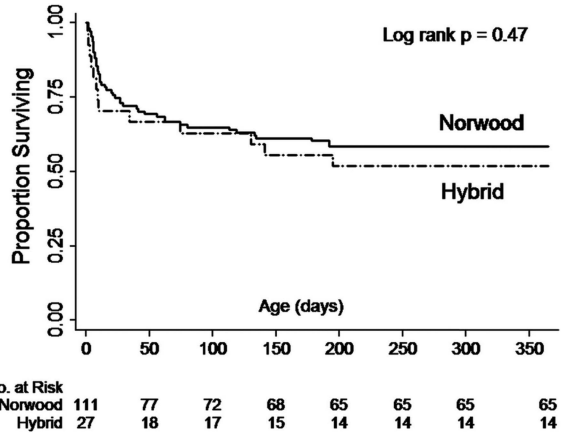

Figure 1 Kaplan–Meier diagram showing the survival until 1 year. All patients who survived until 1 year had received conversion to a partial cavopulmonary anastomosis.

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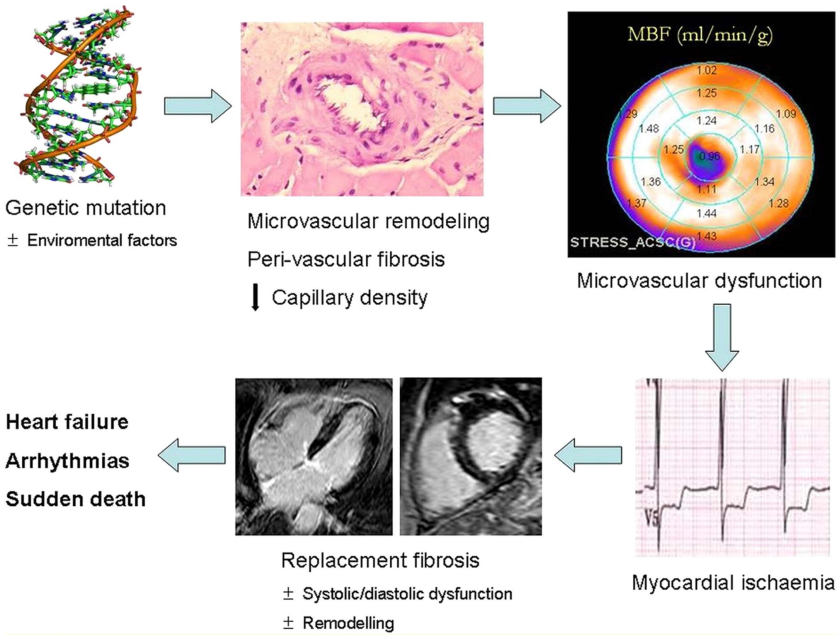

Figure 2 Proposed chain of pathophysiologic events linking microvascular remodelling and dysfunction to myocardial ischaemia and left ventricular remodelling and their consequences on patient outcome. Positron emission tomography image provided by nuclear medicine division of San Raffaele Hospital, Milan. Cardiac magnetic resonance image provided by radiology division of San Raffaele Hospital, Milan. MBF, myocardial blood flow.

procedure had a higher predicted risk score (see figure 1).

The Education in Heart article (***see page 806***) in this issue discusses coronary microvascular dysfunction in primary cardiomyopathies. In addition to excellent tables and illustrations, in the article itself, the online data supplement includes additional tables and references (see figure 2).

Finally, be sure to look at the Image Challenge with an interesting Doppler flow pattern in the femoral vein in a patient with valvular heart disease.

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