Ischaemic heart disease
High incidence of undiagnosed diabetes mellitus in patients with AMI ▶ Of 181 consecutive non-diabetic patients with acute myocardial infarction (AMI), 35% (95% confidence interval [CI] 28% to 43%) and 40% (95% CI 32% to 48%) had impaired glucose tolerance at discharge and after three months, respectively, while 31% (95% CI 24% to 38%) and 25% (95% CI 18% to 32%) had previously undiagnosed diabetes mellitus. Independent predictors of abnormal glucose tolerance at three months were concentrations of HbA1c at admission (p = 0.024) and fasting blood glucose concentrations on day 4 (p = 0.044).

Prevention of NIDDM with acarbose ▶ Over 1400 patients with impaired glucose tolerance were randomly allocated to 100 mg acarbose or placebo three times daily. At a mean follow up of 3.3 years, 211 (31%) of 682 patients in the acarbose group and 130 (19%) of 686 on placebo had discontinued treatment. Non-insulin dependent diabetes mellitus (NIDDM) developed in 221 (32%) patients randomised to acarbose and 285 (42%) randomised to placebo (relative hazard 0.75, 95% CI 0.63 to 0.90; p = 0.0015). The most frequent side effects to acarbose treatment were flatulence and diarrhoea.

Troponins are still predictive in patients with ACS plus renal failure ▶ Troponin T is renally cleared and so may remain elevated for long periods in patients with renal impairment. In the GUSTO IV trial, death or myocardial infarction occurred in 581 of >7000 patients. Among patients with a creatinine clearance above the 25th centile value of 58.4 ml per minute, an abnormally elevated troponin T concentration (>0.1 ng/ml) was predictive of an increased risk of myocardial infarction or death (7% v 5%; adjusted odds ratio [OR] 1.7, 95% CI 1.3 to 2.2; p < 0.001). Among patients with a creatinine clearance in the lowest quartile, an elevated troponin T concentration was similarly predictive of increased risk (20% v 9%; OR 2.5, 95% CI 1.8 to 3.3; p < 0.001).

Syndrome X patients may have subendocardial ischaemia ▶ Previous work suggests that there may be abnormal pain sensation or abnormal microvasculature in syndrome X patients. Now cardiovascular magnetic resonance imaging has demonstrated subendocardial hypoperfusion during the intravenous administration of adenosine, which is associated with intense chest pain. These data support the notion that the chest pain may have an ischaemic cause.
**General cardiology**

**Biventricular pacing improves symptoms in heart failure**

In a randomised controlled trial of 450 patients, those with biventricular pacemakers were turned on had subjective (New York Heart Association class, quality of life) improvements in their condition as well as improvements in objective markers. There was an improvement in the distance walked in six minutes (39 m / 10 m, p = 0.005) time on the treadmill during exercise testing (81 s v 19 s, p = 0.001), and ejection fraction (+4.6% v -0.2%, p < 0.001). In addition, fewer patients in the group assigned to cardiac resynchronisation took control patients required hospitalisation (8% v 15%, p < 0.05). The trial was not powered to detect a mortality advantage for this treatment. There is a risk with the procedure and two patients died as a result of the implantation.

**Aronow BJ, Lorenz JN, Dorn II GW. Mitochondrial death protein NIX is induced in hypertrophy and triggers apoptotic cardiomyopathy.**

**Cardiac resynchronization in chronic heart failure.**


**Infective endocarditis still has an in-patient mortality of 16%**

A French registry of 390 cases of infective endocarditis in 1999 showed that, compared to 1991, mortality had reduced from 21.6% to 16.6%. In addition, patients without prior heart disease made up 4% of cases. The population incidence of infective endocarditis is 31 per million, except in New Caledonia, where it is 161 per million.

**Tennis prevents heart disease but baseball does not**

In 1000 medical students followed for 40 years, sporting activity was related to cardiovascular health. After adjustment for father’s occupation, parental incidence of cardiovascular disease, serum cholesterol concentration, cigarette smoking, body mass index, and hypertension during follow up, the relative hazard of developing cardiovascular disease was 0.56 (95% CI 0.35 to 0.89) in the high ability group, compared with the no-ability group. Strangely, other sports did not have this effect, perhaps as they could not be maintained as one ages.

**Basic science**

**How LVH turns to heart failure in long standing pressure overload**

Gq proteins couple membrane receptors for angiotensin II, endothelin-1 and adrenaline (epinephrine) to the cardiac hypertrophy response. Protein NIX is part of the apoptotic response that explains how pressure induced hypertrophy can turn to heart failure. It is strikingly induced in Gq-dependent and pressure overload hypertrophy and, when expressed in vitro, localises to mitochondria and causes rapid cell death with caspase-3 activation and apoptotic nuclear changes. Expressed in the in vivo mouse heart, NIX provoked a dilated cardiomyopathy that was invariably lethal because of massive cardiomyocyte apoptosis within days of detectable protein expression.

**Yussman MG, Toyokawa T, Odley A, Lynch RA, Wu G, Calbert MC, Aronow BJ, Lorenz JN, Dorn II GW. Mitochondrial death protein NIX is induced in hypertrophy and triggers apoptotic cardiomyopathy.**

**Journal scanned**


**WEB TOP 10**

[www.heartjnl.com](http://www.heartjnl.com)

These articles scored the most hits on Heart’s web site during June 2002.

1. **Antiplatelet treatment in unstable angina: aspirin, clopidogrel, glycoprotein IIb/IIIa antagonist, or all three?**
   SA Harding, NA Boon, AD Flapan
   July 2002; **88**: 11-14. (Viewpoint)

2. **Myocardial infarction: redefined or reinvented?**
   H Dargie
   July 2002; **88**: 1-3. (Editorial)

3. **Management of Marfan syndrome**
   JCS Dean
   July 2002; **88**: 97-103. (Education in Heart)

4. **Patients with acute coronary syndrome should start a statin while still in hospital**
   CG Isles
   July 2002; **88**: 5-6. (Editorial)

5. **Use of statins in the secondary prevention of coronary heart disease: is treatment equitable?**
   FDA Reid, DG Cook, PH Whincup
   July 2002; **88**: 15-19. (Cardiovascular medicine)

6. **Choice of heart valve prosthesis**
   P Bloomfield
   June 2002; **87**: 583-9. (Education in Heart)

7. **Meta-analysis of randomised controlled trials of the effectiveness of antiarrhythmic agents at promoting sinus rhythm in patients with atrial fibrillation**
   G Nichol, F McAlister, B Pharm, A Laupacis, B Shea, M Green, A Tang, G Wells
   June 2002; **87**: 535-43. (Cardiovascular medicine)

8. **Joint British recommendations on prevention of coronary heart disease in clinical practice**

9. **Development and structure of the atrial septum**
   RH Anderson, NA Brown, S Webb
   July 2002; **88**: 104-110. (Education in Heart)

10. **The medical management of valvar heart disease**
    NA Boon, P Bloomfield
    April 2002; **87**: 395-400. (Education in Heart)

Visit the Heart website for hyperlinks to these articles, by clicking on “Top 10 papers”

[www.heartjnl.com](http://www.heartjnl.com)