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Ischaemic heart disease

A paclitaxel eluting stent for the prevention of coronary restenosis ► Restenosis occurs in 20–40% of cases after coronary stent implantation, and remains the major drawback of percutaneous coronary intervention. However, the sirolimus eluting stent (Cypher) released last year suggested dramatic reductions in this problem. Now similar data has arrived for the Taxus stent (eluting paclitaxel). These data showed that > 50% restenosis occurred in 4% of the Taxus group versus 27% in the placebo bare stent group ($p < 0.001$). Although expensive, these stents may represent a cost saving if recurrent procedures are dramatically reduced in real clinical practice.

▲ **Park S-J**, Shim WH, Ho DS, Raizner AE, Park S-W, Hong M-K, Lee CW, Choi D, Jang Y, Lam R, Weissman NJ, Mintz GS. A paclitaxel-eluting stent for the prevention of coronary restenosis. *N Engl J Med* 2003;**348**:1537–45.

▲ **Morice M-C**, Serruys PW, Sousa JE, *et al*. A randomized comparison of a sirolimus-eluting stent with a standard stent for coronary revascularization. *N Engl J Med* 2002;**346**:1773–80.

Give atorvastatin 80 mg if there is no revascularisation possible ► The AVERT trial suggested that atorvastatin 80 mg/day produced a greater reduction in coronary heart disease (CHD) events than did angioplasty with a lower level of statin. It comes as no surprise that in 60 patients in whom revascularisation was not possible, after 12 weeks of treatment, patients in the aggressive lipid lowering treatment group had a significantly greater decrease in mean (SD) low density lipoprotein (LDL) cholesterol concentration than those in the usual care group (29 (38) mg/dl *v* 7 (24) mg/dl, $p = 0.03$). Patients in the aggressive treatment group also had a reduction in the number of ischaemic wall segments on stress echocardiography (mean between group difference of 1.3, 95% confidence interval (CI) 0.1 to 2.0; $p = 0.04$) and angina score after 12 weeks. There were no significant changes in atherosclerotic burden in either group.

▲ **Fathi R**, Haluska B, Short L, Marwick TH. A randomized trial of aggressive lipid reduction for improvement of myocardial ischemia, symptom status, and vascular function in patients with coronary artery disease not amenable to intervention. *Am J Med* 2003;**114**:445–53.

▲ **Pitt B**, Waters D, Brown WV, *et al*. Aggressive lipid-lowering therapy compared with angioplasty in stable coronary artery disease. Atorvastatin versus revascularization treatment investigators. *N Engl J Med* 1999;**341**:70–6.

Irbesartan does not reduce CVS end points compared to placebo or amlodipine ► The primary outcomes of the irbesartan diabetic nephropathy trial were doubling of serum creatinine values, end stage renal disease, and death from any cause. The trial recruited 1715 adults with type 2 diabetic nephropathy and hypertension, serum creatinine concentrations of 89 µmol/l to 266 µmol/l, and urinary protein excretion rates of at least 900 mg/day. Data on cardiovascular end points suggests no specific benefit of irbesartan, although marginally fewer patients on amlodipine had myocardial infarction and marginally fewer patients on irbesartan had congestive cardiac failure.

▲ **Berl T**, Hunsicker LG, Lewis JB, Pfeffer MA, Porush JG, Rouleau J-L, Drury PL, Esmatjes E, Hricik D, Parikh CR, Raz I, Vanhille P, Wiegmann TB, Wolfe BM, Locatelli F, Goldhaber SZ, Lewis EJ, for the Collaborative Study Group. Cardiovascular outcomes in the irbesartan diabetic nephropathy trial of patients with type 2 diabetes and overt nephropathy. *Ann Intern Med* 2003;**138**:542–9.

No need for routine transaminase and CK measurements in patients on statins ► In this study of statin use in > 1000 patients in a primary care practice, routine monitoring revealed no cases of significantly or moderately abnormal transaminase values attributable to statins. No significantly abnormal and only two moderately abnormal creatine kinase (CK) values were potentially attributable to statin use. This study questions the usefulness of routine measurement of transaminase and CK concentrations in all patients taking statins.

▲ **Smith CC**, Bernstein LI, Davis RB, Rind DM, Shmerling RH. Screening for statin-related toxicity: the yield of transaminase and creatine kinase measurements in a primary care setting. *Arch Intern Med* 2003;**163**:688–92.

Heart failure

Cardiac cachexia is a strong predictor of mortality in heart failure ► Weight loss of 6% or more at any time during follow up occurred in 36% of patients and was the strongest predictor of impaired survival in the SOLVD trial (adjusted hazard ratio 2.10, 95% CI 1.77 to 2.49; $p < 0.0001$). Patients on the ACE inhibitor enalapril had a lower hazard of 6% or more weight loss than did those not taking the drug (adjusted reduction 19%, $p = 0.0054$). The weight loss was not related to fluid overload being removed. Treatments aimed at preventing such weight loss need to be investigated.

▲ **Anker SD**, Negassa A, Coats AJS, Afzal R, Poole-Wilson PA, Cohn JN, Yusuf S. Prognostic importance of weight loss in chronic heart failure and the effect of treatment with angiotensin-converting-enzyme inhibitors: an observational study. *Lancet* 2003;**361**:1077–83.

Aldosterone blockade and heart failure ► The RALES trial re-established aldosterone blockade with spironolactone as a key part of the management of heart failure. The mode of action may in part be due to reduction in fibrosis driven by a direct effect of aldosterone. Eplerenone is a specific aldosterone antagonist that does not affect the glucocorticoid or androgenic receptors. The EPHESUS trial was in a lower risk group with less severe heart failure, explaining the 15% relative risk reduction in mortality compared to 30% seen in RALES. Most importantly, however, the patient needs to be on ACE inhibitors and β blockers before additional drugs are added.

▲ **Pitt B**, Remme W, Zannad F, *et al*. Eplerenone, a selective aldosterone blocker, in patients with left ventricular dysfunction after myocardial infarction. *N Engl J Med* 2003;**348**:1309–21.

▲ **Pitt B**, Zannad F, Remme WJ, *et al*. The effect of spironolactone on morbidity and mortality in patients with severe heart failure. *N Engl J Med* 1999;**341**:709–17.

CPAP to improve heart failure ► In 24 patients with heart failure and sleep apnoea, half were allocated standard care, and half standard care plus CPAP (continuous positive airway pressure) at night for one month. In the control group of patients who received only medical treatment, there were no significant changes in the severity of obstructive sleep apnoea, daytime blood pressure, heart rate, left ventricular end systolic dimension, or left ventricular ejection fraction during the study. In contrast, CPAP notably reduced obstructive sleep apnoea, reduced the daytime systolic blood pressure from a mean (SE) of 126 (6) mm Hg to 116 (5) mm Hg ($p = 0.02$), reduced the heart rate from 68 (3) to 64 (3) beats/min ($p = 0.007$), reduced the left ventricular end systolic dimension from 54.5 (1.8) to 51.7 (1.2) mm ($p = 0.009$), and improved the left ventricular ejection fraction from 25.0 (2.8)% to 33.8 (2.4)% ($p < 0.001$).

▲ **Kaneko Y**, Floras JS, Usui K, Plante J, Tkacova R, Kubo T, Ando S, Bradley TD. Cardiovascular effects of continuous positive airway pressure in patients with heart failure and obstructive sleep apnea. *N Engl J Med* 2003;**348**:1233–41.

Hypertension

The ASCOT study: atorvastatin reduces CHD events ► A total of 19 342 patients with hypertension and at least three of the following risk factors for cardiovascular disease—left ventricular hypertrophy, diabetes, peripheral arterial disease, previous stroke or transient ischaemic attack, male sex, age > 55 years, microalbuminuria or proteinuria, smoking, ratio of plasma total cholesterol:HDL cholesterol > 6, or premature family history of CHD—were studied. Of these, 10 305 with non-fasting total cholesterol < 6.5 mmol/l were randomly assigned additional atorvastatin 10 mg or placebo. Treatment was stopped early, after a median follow up of 3.3 years. By that time, 100 CHD deaths or non-fatal myocardial infarctions had occurred in the atorvastatin group compared with 154 events in the placebo group (hazard ratio (HR) 0.64, 95% CI 0.50 to 0.83; p = 0.0005). This benefit emerged in the first year of follow up. Fatal and non-fatal stroke (89 atorvastatin *v* 121 placebo, HR 0.73, 95% CI 0.56 to 0.96; p = 0.024) and total coronary events (178 *v* 247, HR 0.71, 95% CI 0.59 to 0.86; p = 0.0005) were also significantly lowered. There were 185 deaths in the atorvastatin group and 212 in the placebo group (HR 0.87, 95% CI 0.71 to 1.06; p = 0.16). Atorvastatin lowered total serum cholesterol by about 1.3 mmol/l compared with placebo at 12 months, and by 1.1 mmol/l after three years of follow up. Average predicted 10 year risk of CHD events was 20% in this population, suggesting that lipid treatment should be initiated at lower levels of risk than presently recommended.

▲ **Sever PS**, Dahlöf B, Poulter NR, Wedel H, Beevers G, Caulfield M, Collins R, Kjeldsen SE, Kristinsson A, McInnes GT, Mehlsen J, Nieminen M, O'Brien E, Östergren J, for the ASCOT Investigators. Prevention of coronary and stroke events with atorvastatin in hypertensive patients who have average or lower-than-average cholesterol concentrations, in the Anglo-Scandinavian cardiac outcomes trial—lipid lowering arm (ASCOT-LLA): a multicentre randomised controlled trial. *Lancet* 2003;**361**:1149–58.

Verapamil has no specific advantage over thiazides or β blockers in hypertension ► Initially, 8241 participants with hypertension received 180 mg of slow release verapamil and 8361 received either 50 mg of atenolol or 12.5 mg of hydrochlorothiazide. Other drugs (for example, diuretic, β blocker, or an angiotensin converting enzyme inhibitor) could be added in specified sequence if needed. Systolic and diastolic blood pressure were reduced by 13.6 mm Hg and 7.8 mm Hg for participants assigned to the slow release verapamil group and by 13.5 and 7.1 mm Hg for participants assigned to the atenolol or hydrochlorothiazide group. There were 364 primary cardiovascular disease related events that occurred in the slow release verapamil group versus 365 in the atenolol or hydrochlorothiazide group (HR 1.02, 95% CI 0.88 to 1.18; p = 0.77). There were no differences in myocardial infarction, stroke or CHD related death. The HR was 1.05 (95% CI 0.95 to 1.16) for any prespecified cardiovascular disease related event and 1.08 (95% CI 0.93 to 1.26) for all cause mortality.

▲ **Black HR**, Elliott WJ, Grandits G, Grambsch P, Lucente T, White WB, Neaton JD, Grimm RH, Jr, Hansson L, Lacourcière Y, Muller J, Sleight P, Weber MA, Williams G, Wittes J, Zanchetti A, Anders RJ. Principal results of the controlled onset verapamil investigation of cardiovascular end points (CONVINCE) trial. *JAMA* 2003;**289**:2073–82.

General cardiology

Unwise to try to cross stenotic aortic valves at angiography ► Crossing a stenosed aortic valve is a time honoured skill. However, with modern echocardiography, is it necessary? A total of 152 patients with aortic stenosis were randomised in 2:1 fashion to cardiac catheterisation with or without attempted passage of aortic valve. Aortic valve area by transoesophageal echocardiography (TOE) planimetry averaged 0.69 cm^2. Comparing pre- and post-procedure magnetic resonance imaging scanning revealed embolic injury to the brain in 22% of those randomised to attempted valve (including 3% with clinical neurological events) and none of those randomised to no attempt at valve crossing. This confirms a previous study which suggested a 1.7% clinical event rate after attempts at crossing the aortic valve.

▲ **Omran H**, Schmidt H, Hackenbroch M, Illien S, Bernhardt P, von der Recke G, Fimmers R, Flacke S, Layer G, Pohl C, Lüderitz B, Schild H, Sommer T. Silent and apparent cerebral embolism after retrograde catheterisation of the aortic valve in valvular stenosis: a prospective, randomised study. *Lancet* 2003;**361**:1241–6.

▲ **Bartsch B**, Haase KK, Voelker W, *et al*. Risk of invasive diagnosis with retrograde catheterization of the left ventricle in patients with acquired aortic valve stenosis. *Z Kardiol* 1999;**88**:255–60.

Nitroprusside for severe aortic stenosis ► Vasodilators have traditionally been contraindicated in aortic stenosis (AS) for fear of catastrophic hypotension. However, when severe AS leads to left ventricular failure due to unbearable afterload, peripheral resistance may be playing a part. In 25 patients with severe AS (area 0.6 cm^2, mean gradient 37 mm Hg) and low ejection fraction (mean 21%) without hypotension, nitroprusside infusion raised cardiac index from 1.6 to 2.5 $l/min/m^2$ and mean gradient increased from 37 to 60 mm Hg. There were no significant side effects. Nitroprusside could be used as a bridge to surgery in sick patients.

▲ **Khot UN**, Novaro GM, Popovic ZB, Mills RM, Thomas JD, Tuzcu EM, Hammer D, Nissen SE, Francis GS. Nitroprusside in critically ill patients with left ventricular dysfunction and aortic stenosis. *N Engl J Med* 2003;**348**:1756–63.

Pulmonary vein stenosis can complicate ablation for AF ► A total of 335 patients were referred for focal AF ablation using pulmonary vein isolation. All were screened at six months with spiral CT for pulmonary vein stenosis. Severe pulmonary vein stenosis was detected in 18 patients (5%, 95% CI 3.2% to 8.4%) a mean (SD) of 5.2 (2.6) months after ablation. Eight of these 18 patients (44%) were asymptomatic, but 8 (44%) reported shortness of breath, 7 (39%) reported cough, and 5 (28%) reported haemoptysis. Radiologic abnormalities were present in 9 patients (50%) and led to diagnoses of pneumonia (4 patients), lung cancer (1 patient), and pulmonary embolism (2 patients). Pulmonary vein stenosis was not considered in any patient during the initial work up. Dilatation of the affected vein was performed in 12 patients. Post-intervention lung perfusion scans revealed significant improvement in lung flow.

▲ **Saad EB**, Marrouche NF, Saad CP, Ha E, Bash D, White RD, Rhodes J, Prieto L, Martin DO, Saliba WI, Schweikert RA, Natale A. Pulmonary vein stenosis after catheter ablation of atrial fibrillation: emergence of a new clinical syndrome. *Ann Intern Med* 2003;**138**:634–38.

Journals scanned

American Journal of Medicine; American Journal of Physiology: Heart and Circulatory Physiology; Annals of Emergency Medicine; Annals of Thoracic Surgery; Archives of Internal Medicine; BMJ; Chest; European Journal of Cardiothoracic Surgery; Lancet; JAMA; Journal of Clinical Investigation; Journal of Diabetes and its Complications; Journal of Immunology; Journal of Thoracic and Cardiovascular Surgery; Nature Medicine; New England Journal of Medicine; Pharmacoeconomics; Thorax

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