Ischaemic heart disease

Antioxidants may attenuate the benefits of lipid lowering

- In a three year, double blind trial, 160 patients with coronary disease, low high density lipoprotein (HDL) cholesterol concentrations, and normal low density lipoprotein (LDL) cholesterol concentrations were randomly assigned to receive one of four regimens: simvastatin-niacin (SN), antioxidant vitamins C and E plus carotene and selenium (A), simvastatin-niacin plus antioxidants (SNA), or placebos. The end points were arteriographic evidence of a change in coronary stenosis and the occurrence of major adverse cardiac events (MACE): death, myocardial infarction, stroke, or revascularisation. LDL and HDL cholesterol concentrations were unchanged in the A and placebo groups, but changed substantially (by −42% and +26%, respectively) in the SN group. The protective increase in HDL with SN was attenuated in the SNA group. This was reflected in greater progression of coronary artery disease and higher MACE rates with SNA: 24% with placebos, 3% with SN alone, 21% with A, and 14% with SNA.


Vitamins may, however, lower restenosis rates

- Restenosis after PTCA is a major clinical problem, and apart from stents, no treatment has shown convincing benefits. Treatment with a combination of folic acid, vitamin B12, and pyridoxine significantly reduced homocysteine concentrations and decreased the rate of restenosis (9.6% v 37.6%, p = 0.01) and the need for revascularisation of the target lesion (10.8% v 22.3%, p = 0.047) after coronary angioplasty.


Eat more often to lower cholesterol!

- Smaller, more frequent meals are healthier than one or two big meals. The LDL cholesterol was 0.15 mmol lower in those eating six times per day versus once or twice, once confounding factors had been adjusted for. This is of the same magnitude as achieved by putting people on a low fat diet, and would have the effect of reducing coronary heart disease (CHD) event rates by between 10–20%.

- Titan SMO, Bingham S, Welch A, Liben R, Oakes S, Day N, Khand K.T. Frequency of eating and concentrations of serum cholesterol in the Norfolk group. This was reflected in greater progression of coronary artery disease and higher MACE rates with SNA: 24% with placebos, 3% with SN alone, 21% with A, and 14% with SNA.

Hypertension

How often should the BP be checked in non-hypertensive patients?

- In a prospective study, 207 men and 102 women who had coronary artery bypass graft (CABG) surgery were followed for one year. Cardiac events included angina or heart failure that needed admission MI, cardiac arrest, CABG or coronary angioplasty (PTCA). A total of 63 patients (20%) met criteria for major depressive disorder. At one year, 17 (27%) of these patients had a cardiac event compared with 25 of 246 (10%) who were not depressed (p < 0.0008). In a Cox proportional hazard model major depressive disorder (risk ratio 2.3, 95% confidence interval (CI) 1.17 to 4.56), low ejection fraction (2.3, 95% CI 1.07 to 5.03), and female sex (2.4, 95% CI 1.24 to 4.40) were associated with adverse outcomes.


General cardiology

Left ventricular assist devices for end stage heart failure improve survival

- One hundred and twenty nine patients with end stage heart failure who were ineligible for cardiac transplantation were randomly assigned to receive a left ventricular assist device (68 patients) or optimal medical management (61). All patients had symptoms of New York Heart Association functional class IV heart failure. Kaplan–Meier survival analysis showed a reduction of 48% in the risk of death from any cause in the group that received left ventricular assist devices as compared with the medical treatment group (relative risk 0.52, 95% CI 0.34 to 0.78; p = 0.001). The rates of survival at one year were 52% in the device group and 25% in the medical treatment group (p = 0.002); however, these had fallen to 23% and 8%, respectively, by two years.

Brownell BF, Nagpal S, Cox JL, Fahey T. Differences between perspectives of patients and doctors at high risk of stroke with atrial fibrillation (AF) showed that the minimum number of strokes that needed to be prevented in 100 patients over two years for warfarin to be justified was significantly lower for patients than for physicians (1.8 v 10.3; p = 0.001) for aspirin there was no difference between patients and physicians (1.3 v 1.6; p = 0.29). The maximum number of excess bleeds acceptable in 100 patients over two years for use of warfarin and aspirin was significantly higher for patients than for physicians (warfarin 17.4 v 10.3; aspirin 14.7 v 6.7; p < 0.001 for both comparisons). Thus patients at high risk for AF placed more value on the avoidance of stroke and less value on the avoidance of bleeding than did physicians.


Basic research

New compounds that may reduce lipid levels further

Despite the success of the statins at reducing LDL, there is still a need for new treatments to lower cholesterol. In this paper the authors identify a new compound that upregulates the transcription of the LDL receptor in human hepatocyte cell lines. When administered to hyperlipidaemic hamsters the compound reduced both LDL cholesterol and triglyceride concentrations by up to 80%, with a three fold increase in LDL receptor mRNA in the livers.


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3 Joint British recommendations on prevention of coronary heart disease in clinical practice


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