

Abstracts

Paradox of cholesterol levels and stroke

Although the relationship between raised cholesterol levels and ischaemic heart disease (at all blood pressure levels) is well known, no corresponding relationship exists with the incidence of stroke, particularly at older age and higher blood pressure levels, according to a recent article in the *Lancet*. This in spite of the fact that statin use is associated with substantially lower rates of ischaemic heart disease and total stroke rate in patients with a wide range of blood pressures and ages.

These are the findings of a meta-analysis of 61 observational studies, mainly in Western Europe and the USA, consisting of almost 900 000 adults without previous disease and baseline measurements of total cholesterol and blood pressure. The analysis revealed that 1 mmol/l lower total cholesterol was associated with about a half, one-third, and one-sixth lower ischaemic heart disease mortality in both sexes at ages 40 - 49, 50 - 69, and 70 - 89 years, respectively, throughout the main range of cholesterol levels in most developed countries. The proportional risk reduction decreased with increasing blood pressure, since the absolute effects of cholesterol and blood pressure were approximately additive. Of various simple indices involving HDL cholesterol, the ratio total/HDL cholesterol was the strongest predictor of ischaemic heart disease mortality (40% more informative than non-HDL cholesterol and more than twice as informative as total cholesterol). Total cholesterol was weakly positively related to ischaemic and total stroke mortality in early middle age (40 - 59 years), but this finding could be largely or wholly accounted for by the association of cholesterol with blood pressure. Moreover, a positive relation was seen only in middle age and only in those with below-average blood pressure; at older ages (70 - 89 years) and, particularly, for those with systolic blood pressure over about 145 mmHg, total cholesterol was negatively related to haemorrhagic and total stroke mortality. The results for other vascular mortality were intermediate between those for ischaemic heart disease and stroke.

This result is paradoxical and, in the words of the authors, 'invites further research',

given the fact that patients on statins show a lower incidence of stroke.

Prospective Studies Collaboration. *Lancet* 2007; 370: 1829.

Stay fit to live longer

Although it is generally known that older people become less active and generally fatter as they age, the independent relationship between adiposity, fitness and mortality in older adults has not been looked at in detail.

In this study in the *Journal of the American Medical Association*, Xuemei Sui and colleagues looked at the association between cardiorespiratory fitness, adiposity and mortality in older adults. They used a cohort of 2 603 adults with an average age of 64.4, who were enrolled in the Aerobics Center Longitudinal Study and who had completed a baseline health examination during 1979 - 2001. Fitness was assessed by a maximal exercise test and adiposity by body mass index (BMI) and waist circumference and per cent body fat.

They found that there were 450 deaths during an average follow-up of 12 years. Death rates per 1 000 person-years, adjusted for age, sex, and examination year, were 13.9, 13.3, 18.3, and 31.8 across BMI groups of 18.5 - 24.9, 25.0 - 29.9, 30.0 - 34.9, and more than 35.0, respectively; 13.3 and 18.2 for normal and high waist circumference; and 32.6, 16.6, 12.8, 12.3, and 8.1 across incremental fifths of fitness. The association between waist circumference and mortality persisted after further adjustment for smoking, baseline health status, and BMI but not after additional adjustment for fitness. Fitness predicted mortality risk after further adjustment for smoking, baseline health, and either BMI, waist circumference, or per cent body fat.

The authors concluded that in this study population, fitness was a significant mortality predictor in older adults, independent of overall or abdominal adiposity. The recommendation is that doctors point out the importance of regular physical activity for older adults, whether or not they are overweight.

Sui X, et al. *JAMA* 2007; 298: 2507.

Increased body mass associated with increased cancer risk in women

Studies in the UK show that around 23% of all women are obese and 34% are overweight. Obesity is known to be associated with ill health and death from all causes, but less is known about obesity and the specific relationship with different cancers. Now, a study in the *British Medical Journal* suggests that increasing body mass is associated with a significant increase in the risk of cancer for 10 out of 17 cancers examined.

The aim of this study was to look at the relationship between body mass index (BMI) and cancer incidence and mortality. The participants were 1.2 million women recruited into the Million Women Study, who were aged between 50 and 64 during 1996 - 2001. The women were followed up for an average of 5.4 years for cancer incidence and 7 years for cancer mortality.

Researchers found that 45 037 incident cancers and 17 203 deaths from cancer occurred over the follow-up period. Increasing BMI was associated with an increased incidence of endometrial cancer, adenocarcinoma of the oesophagus, kidney cancer, leukaemia, multiple myeloma, pancreatic cancer, non-Hodgkin's lymphoma, ovarian cancer, all cancers combined, breast cancer in postmenopausal women and colorectal cancer in premenopausal women. In general, the relation between BMI and mortality was similar to that for incidence. For colorectal cancer, malignant melanoma, breast cancer, and endometrial cancer, the effect of BMI on risk differed significantly according to menopausal status.

Among postmenopausal women in the UK 5% of all cancers can be attributed to being overweight or obese. For endometrial cancer and adenocarcinoma of the oesophagus, BMI represents a major modifiable risk factor; about half of all cases in postmenopausal women are attributable to overweight or obesity.

Reeves GK, et al. *BMJ* 2007; 335: 1134.

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