

Editorial

Should we treat hypercholesterolaemia in patients over 65?

Should we treat hypercholesterolaemia in patients over 65? A few years ago, I would have said "no". I would even have congratulated the patient for surviving so long, taking the view that his or her atherosclerosis would be too advanced to modify. But now we know from younger patients that it is the evolving small lesions that are most likely to lead to rupture,¹ and that these are the lesions most likely to undergo regression.²⁻⁵ Quantitative coronary angiography has also demonstrated that new emerging atherosclerotic lesions are fewer with vigorous treatment of hypercholesterolaemia.^{2,3} In addition, we have the results of the 4S and CARE trials,^{6,7} which suggest that treatment of patients over 65 years may be effective in reducing the incidence of subsequent events and death from coronary heart disease (CHD).

Otherwise healthy people

We do not have sufficient evidence to make any recommendations for men or women older than 65 with hypercholesterolaemia who are otherwise healthy. The West of Scotland primary prevention trial did not include anyone over the age of 65.⁸ The only primary prevention trial in elderly people (the Los Angeles Veterans Administration Study) did not have the statistical power for any conclusion to be reached.⁹ This was a trial, now largely forgotten, of a diet enriched in polyunsaturated fats. There were 846 men admitted to the eight year trial, and 443 were 65-89 years of age: the geometric mean age was 65. In 80%, there were no features of angina or myocardial infarction, therefore, it should be regarded as mostly a primary prevention study. The mean serum cholesterol was, however, not high at 233 mg/dl (6.0 mmol/l). Using a randomised design, half of the men received a diet that did not alter their weight but that achieved a 17% reduction in serum cholesterol, with 13% difference between the diet and control groups. This diet was not significantly low in total fat but two-thirds of the saturated fat was substituted by vegetable oils, such as corn, soybean, safflower, and cotton seed oils as preferred. Adherence was monitored by measurement of adipose linoleic acid. In men over 65, in contrast to those under that age, there was no significant reduction in myocardial infarction or fatal events.

The finding of isolated hypercholesterolaemia in people over 65 without any clinical manifestations of atherosclerosis is rare, as most of those with heterozygote and all with homozygote familial hypercholesterolaemia will have died before this age. There is no justification for screening the elderly population to search for hypercholesterolaemia. It is rather more common and less serious in women than in men and, in both sexes, should be assessed in conjunction with measurements of high density lipoproteins (HDL) as a proportion of these people will also have high HDL concentrations and a total cholesterol:HDL ratio of < 5, where treatment is not indicated.

Patients with CHD

The picture is different and encouraging in patients with manifest CHD. In the 4S trial of 4444 hypercholesterolaemic patients, 51% were older than 60.⁶ The mean serum cholesterol on entry was 6.75 mmol/l (low density lipopro-

tein cholesterol (LDL) 4.87 mmol/l). Simvastatin use induced a 25% reduction in total cholesterol, a 35% reduction in LDL cholesterol, and an increase of HDL by 8%. While the five year benefit of taking simvastatin was better for major coronary events in male and female patients younger than 60, there was a significant improvement for those between 60 and 70; there was also a reduction in deaths from CHD in men over 60.

CARE was a randomised controlled trial of pravastatin in 4159 patients with normal cholesterol concentrations (plasma total cholesterol < 240 mg/dl (6.2 mmol/l), mean 209 mg/dl (5.3 mmol/l) and mean LDL cholesterol 139 mg/dl).⁷ There was an overall reduction of LDL cholesterol of 21%, with the greatest effect in those with highest initial concentrations. The risk reduction by pravastatin treatment over five years for major coronary events was 24%, greater in those 60-75 years than in younger patients. It was calculated that over five years there might be 1 in 5 fewer cardiovascular events/1000 at risk over the age of 60 (27 fewer deaths and 46 fewer non-fatal myocardial infarcts).

These two trials are the only ones with substantial figures and data in CHD patients older than 65. Their results agree and, to my surprise, I now believe that my earlier negative reaction to the question posed in the title may be wrong. But what are the implications?

Diets or drugs?

Our natural tendency for the elderly is to favour cholesterol lowering diets but the usual low saturated fat/low cholesterol diets recommended by the National Cholesterol Education Program¹⁰ do not work.^{11,12} The only dietary change likely to lead to benefit must be one that lowers cholesterol by 15% or more.¹³ This means substantial substitution of saturated fat with monounsaturated (olive oil) or polyunsaturated fats (vegetable oils). Fish oils do not lower plasma cholesterol or LDL cholesterol but probably do have an antithrombotic effect, which may be particularly important in the elderly. Such dietary changes mean maximum compliance over many years and some are expensive. Many elderly patients are set in their eating habits and way of life, therefore, they are unlikely to respond very well.

For these reasons, and in the absence of any adequate diet trials in those over 65, we have no alternative but to consider drugs and the only group for which there are hard data is the statins. They may have the added benefit, as a result of the profound LDL cholesterol reduction, in reducing vascular resistance.¹⁴ But how long should they be used is unknown as are the possible adverse effects on the vascular system following their withdrawal after many years.

Or nothing?

The decision whether to treat hypercholesterolaemia in patients over 65 with CHD should depend on their degree of risk, their general health, their enthusiasm for treatment, and their income—it cannot be expected that governments will foot a hefty drug bill for the indefinite future. It has recently been estimated that about 14% of men and 9% of women aged between 60 and 69 years with pre-existing

clinical CHD might be candidates for treatment.¹⁵ Approximately 13 people would need treatment for five years to prevent one coronary event, at a cost of £36 000 per event prevented. The number needing treatment would increase substantially if treatment were extended to patients over 70 or to those with serum cholesterol > 5.5 mmol/l.

Conclusion

There is no evidence from clinical trials either to recommend treatment of raised plasma cholesterol concentrations in healthy individuals over 65 years, or not to do so. Perhaps those at very high risk might be treated but these are rare. As one who has reached this age and beyond and remained healthy, my inclination is not to treat and not to worry them by frequent blood analyses.

As for patients over 65 with CHD, I conclude on balance that it is uneconomical to introduce any policy for screening or reduction of plasma cholesterol. The majority of these patients do not have raised plasma cholesterol concentrations and do not need treatment on that account. It is best for each patient over 65 to be assessed individually. Those found to have cholesterol concentrations above—for example, 6.5 mmol/l should be offered a diet with marked enrichment of unsaturated fats. If they are unwilling to change their eating habits, a statin should be considered but such treatment will have to be life long.

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STAMPS IN CARDIOLOGY

Joseph Skoda (1805–1881)

This stamp is part of the Austrian Welfare Funds set issued in 1937 and carries a charitable surcharge for the funds. Early charity surcharges were usually overprints but specific designs were commissioned when charity issues became planned as part of the stamp issuing policy for individual countries (rather than for raising funds for unforeseen disasters).

Joseph Skoda, an Austrian physician and son of a locksmith, developed systems to describe percussion and auscultation in an attempt to provide more precise terms. He described four types of percussion—full-empty, clear-dull, tympanic-non-tympanic, and high-low. He described the hyperresonant percussion note above a pleural effusion (Skoda's sign, skodaic resonance). His terms for the sounds heard on auscultation were based on pitch and tone and he was one of the first to distinguish between heart sounds and murmurs. He correlated cardiac murmurs with the pathological changes seen in the valves and studied in detail pericarditis and pericardial friction rubs. He had two brothers one of whom, Johann, founded the Skoda



works famous for the manufacture of locomotives and armaments and now cars.

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