

Cholesterol lowering in older adults

Coronary heart disease peaks in the older age groups and cholesterol lowering can help reduce the risk. The aim of treating hyperlipidaemia is to prevent or reduce the risk and complications of CVD. Such risk reduction includes nondrug measures (such as addressing lifestyle factors) and drug treatment using lipid-lowering therapy.

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A number of large series have demonstrated the association between high cholesterol levels and coronary heart disease (CHD) in elderly men and women.¹⁻⁶ The Framingham Heart Study and the Systolic Hypertension in the Elderly Program (SHEP) also found that both high low-density lipoprotein (LDL) and low high-density lipoprotein (HDL) cholesterol levels were significant CHD risk factors in elderly subjects.^{1,5} In elderly patients, the absolute risk for CHD increases significantly with age; therefore, larger numbers of patients should get benefit from cholesterol lowering treatment.^{7,8}

Why are lipid lowering drugs under prescribed in older patients?

Clinical trials have shown the benefits of treating hyperlipidaemia in elderly patients with established coronary artery disease. Despite this proven benefit, lipid-lowering drugs are under-prescribed in elderly patients.

A retrospective cohort study of 396,077 high-risk elderly patients found that prescription of statins decreased with increasing age and also with increasing cardiovascular risk and risk of death; thus, the elderly patients likely to get the greatest absolute benefit from statins appear least likely to receive them.⁹

Also, this underutilisation of lipid-lowering drugs was demonstrated through a prospective study, which included 500 patients with a mean age of 81 years and a Q wave myocardial infarction.¹⁰ This could probably be partly due to the concerns

that some clinicians might have regarding the side effects of these drugs, life expectancy of elderly patients and the presence of other comorbidities, which could eventually affect clinician's decision to treat hyperlipidaemia in such a group of patients.

There is also the perception that LDL lowering therapy takes many years before the course of atherosclerosis can be altered. In fact, a benefit has been observed as early as six months to two years from starting treatment. In addition, statins can improve endothelial function within three days of starting treatment. On the other hand, it is worth mentioning that compliance with statin therapy has been noted to decline significantly with time in elderly patients,^{11,12} which can be another reason why statins are underutilised in this group of patients.

Secondary prevention

Several secondary prevention trials of LDL-cholesterol trials have shown a reduction in cardiac events and all cause mortality in elderly patients. In the 4S trial¹³ (The Scandinavian Simvastatin Survival Study), 1021 patients older than 65 years of age with previous history of myocardial infarction or angina and hypercholesterolaemia (serum cholesterol levels of 5.5–8.8mmol/L) were included. It showed a similar reduction in serum lipid levels among elderly and younger patients.

The Heart Protection study trial¹⁴ included 20,000 patients between the ages of 40–80 years with previous history of cardiovascular disease, diabetes mellitus or treated hypertension and

various lipid profiles. They were randomly assigned to simvastatin (Zocor) or placebo. It showed similar cardiovascular events reduction in those below and above age 65 years. The CARE trial¹⁵ (Cholesterol and Recurrent Events) also showed similar coronary events reduction to that of 4S trial.

The LIPID trial¹⁶ recruited 3514 patients between the age of 65–75 years who had previous myocardial infarction or unstable angina with hypercholesterolaemia (serum cholesterol levels of 4–7mmol/L). With pravastatin therapy, reduction in cardiovascular events and all cause mortality was similar in both the younger and older group of patients. The absolute benefit was greater in the elderly due to increased risk of cardiovascular events.

Primary prevention trials of statins on the other hand, including AFCAPS/TexCAPS¹⁷, and ASCOT-LLA¹⁸ found similar relative effects of therapy on clinical endpoints in younger and older individuals.

JUPITOR¹⁹, the large trial of rosuvastatin (Crestor) showed an absolute reduction in the primary composite cardiovascular endpoint of 0.77 events per 100 patients aged 70 years and older (5695 patients) compared to 0.52 reduction in patients aged 50–69 years (12,107 patients).

The PROSPER²⁰ and CAGE²¹ trials add further evidence that treating hypercholesterolaemia in the elderly provides same benefits to that of treatment in younger patients group.

Conclusion

In summary, CHD is very common in older adults. Dyslipidaemia is clearly associated with increased risk of CHD in this age group as it is in younger patients. The relative benefit of treating dyslipidaemia in older patients is similar to that of younger patients but the absolute benefit is greater mainly in secondary prevention. Older patients with dyslipidaemia may also benefit from primary prevention as long as they have reasonable life expectancy. In spite of that, lipid-lowering therapy is under prescribed.

Dyslipidaemia should be treated equally in young and older patients particularly as part of secondary prevention and older adults need not to be denied lipid-lowering therapy simply on the basis of age.

Conflict of interest: none declared

References

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