# H·E·A·R·T UK: hyperlipidaemia and the challenges ahead

The merits of reducing cholesterol to help prevent coronary heart disease (CHD) were questioned 10 years ago. There were great debates about the utility of reducing low-density lipoprotein cholesterol (LDL-C) and it is now clear, following the publication of at least eight different clinical drug trials, that reducing cholesterol with statin drugs helps to reduce total mortality, cardiovascular mortality and morbidity and interventional procedures.[1-8] Today the debate focuses on other areas to do with the diagnosis, management and treatment of cholesterol-related disorders. British Heart Foundation statistics estimate that seven out of 10 people in the UK have raised cholesterol (> 5 mmol/L).[9] Hyperlipidaemia is the greatest single contributing risk factor for atherosclerosis.

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> ***H·E·A·R·T UK***

## Diagnosis

Hypercholesterolaemia has polygenic and monogenic causes. The recent Genetics White Paper (June 2003)[10] highlights the need for screening for monogenic familial hypercholesterolaemia (FH) as one of its targets. With an incidence of one in 500 people inheriting this condition, this would predict approximately 120,000 people who have the condition throughout the UK. At the present time we have reliable data that no more than 25,000 of these have been identified.

The Simon Broome Register Study group (comprised of 12 major UK lipid clinics) forms part of the Hyperlipidaemia and Education Research Trust (H·E·A·R·T UK). It has defined the results of improving treatment for FH over the last 20 years and performed the cost benefit analyses that showed that identification of patients with FH would have major benefits for public health. Following on from these landmark studies, the Genetics White Paper proposes a structured screening programme for FH. One of the consequences of this will be the identification of many adults and children with the disorder. H·E·A·R·T UK is currently developing an education programme targeting these individuals and their families.

The advent of the National Service Framework (NSF) for CHD[11] has meant that general practitioners (GPs) have set up cardiovascular disease (CVD) risk registers which have identified these affected families and many other patients at risk for CHD and other atherosclerotic diseases. The NSF has thrown down the challenge to GPs throughout the country to identify and document all those patients at risk on their CVD registers. Many have done so but audit has highlighted several problems. Firstly, patients are still not being screened let alone treated to target cholesterol levels. There is also a lack of support for some GPs in actually getting laboratory reports that give results for total cholesterol, LDL-C and high-density lipoprotein cholesterol (HDL-C).[12]

H·E·A·R·T UK is currently undertaking a survey of the national laboratories to ascertain screening for lipids to determine levels of service and hopefully provide some guidelines on minimum standards for testing in laboratories countrywide.

## Management

The management for reduction of cholesterol takes its lead from the NSF for CHD[11] and the Joint British Society Guidelines (JBSG)[13] (currently being updated). The NSF has suggested target levels of 5 mmol/L for total cholesterol and 3 mmol/L for LDL-C or a 25% reduction, whichever is the greater. The current JBSG guidelines focus on target levels of 5 mmol/L for total cholesterol and 3 mmol/L for LDL-C, although these levels are being re-assessed given the evidence from recent trials.

Total cholesterol and LDL-C are the main foci of treatment targets, which are becoming steadily more strict – the new European guidelines from the European Society of Cardiology[14] have set levels of 4.5 mmol/L for total cholesterol and 2.5 mmol/L for LDL-C in secondary prevention and in patients with diabetes. However, other groups are looking at treating other parts of the lipid profile, including HDL-C and the atherogenic triglyceride-rich remnants that are associated with conditions such as diabetes, obesity and the metabolic syndrome. This atherogenic profile is particularly prevalent

in our high saturated fat and low physical activity lifestyle of today.

Further trials comparing low-dose with high-dose statins will answer the question of how much will a greater lowering of LDL-C achieve. Already data from studies such as the Heart Protection Study[4] suggest that further significant benefits can be achieved by reducing LDL-C levels below those even in the new European guidelines. Indeed, recent trial evidence suggests values of 4.0 mmol/L and 2.0 mmol/L as targets for total cholesterol and LDL-C respectively.

## Treatment

Treatment options for hyperlipidaemia are growing rapidly. A further statin on the market has increased the choice to five statins and all appear to be well tolerated with very low rates of serious side effects. The withdrawal of cerivastatin has not had a lasting effect on the increasing rate of statin prescriptions.[15] Doctors have more choice in which statin to help get patients to target cholesterol level (which will become more important with the new General Medical Services contract) and patients now have more options if one agent might cause unacceptable side effects. The availability of a tolerable cholesterol-absorption inhibitor as a top-up agent also opens up further options for patients currently not reaching LDL-C targets.

Despite the safety and efficacy of statins, some patients have extreme lipid profiles and/or a few cannot tolerate these agents. Other treatment options are required for these individuals. LDL apheresis (a process rather akin to haemodialysis) is a treatment that physically removes LDL-C from blood. It has been around for a long time but is rarely used in the UK. It is hoped that this situation will change in the next decade as more regional apheresis centres are set up for the limited number of patients who are identified to benefit from this treatment.

The safety profile and need for statins is such that, from early next year, patients at lower risk levels may well be able to decide for themselves whether or not to benefit from statins when an 'over-the-counter' statin will become available. In the next decade, patients will be more informed and have greater access than ever before to treatment options and as laws governing advertising that is direct to the consumer are relaxed. This opens up a whole new area around self-treatment options for cardiovascular risk factors and furthers the devolution of responsibility for atherosclerosis care from professionals to patients. H·E·A·R·T UK intends to actively participate in this by providing educational and counselling support for patients as well as health professionals trying to learn more about the field of lipids.

H·E·A·R·T UK will continue to provide education and information to health professionals and the public in these important areas. We look forward to the next decade of discoveries and theories to help improve the diagnosis, treatment and management of this common disorder.

## References


1. Scandinavian Simvastatin Survival Group. Randomised trial of cholesterol lowering in 4444 patients with coronary heart disease: the Scandinavian Survival Study. *Lancet* 1994;**344**:1383-9.
2. Sacks FM, Pfeffer MA, Moye LA *et al*. for the Cholesterol and Recurrent Events Trial Investigators. The effect of pravastatin on coronary events after myocardial infarction in patients with average cholesterol levels. *N Engl J Med* 1996;**335**:1001-09.
3. The Long-Term Intervention with Pravastatin in Ischemic Disease (LIPID) Study Group. Prevention of cardiovascular events and death with pravastatin in patients with coronary heart disease and a broad range of initial cholesterol levels. *N Engl J Med* 1998;**339**:1349-57.
4. Heart Protection Study Collaboration Group. MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20 536 high-risk individuals: a randomised placebo-controlled trial. *Lancet* 2002;**360**:7-22.
5. Athyros VG, Papageorgiou AA, Mercouris BR *et al*. Treatment with atorvastatin to the 'National Cholesterol Educational PROGRAM Goal' versus 'usual' care in secondary coronary heart disease prevention: the GREek Atorvastatin and Coronary heart disease Evaluation (GREACE) study. *Curr Med Res Opin* 2002;**18**:220-8.
6. Shepherd J, Cobb SM, Ford I *et al.* for the West of Scotland Coronary Prevention Study Group. Prevention of coronary heart disease with pravastatin in men with hypercholesterolaemia. *N Engl J Med* 1995;**333**:1301-07.
7. Downs GR, Clearfield M, Weiss S *et al*. Primary prevention of acute coronary events with lovastatin in men and women with average cholesterol levels: results of the AFCAPS/TEXCAPS (Air Force/Texas Coronary Atherosclerosis Prevention Study). *JAMA* 1998;**279**:1615-22.
8. Hebert PR, Gaziano JM, Chan KS, Hennekens CH. Cholesterol lowering with statin drugs, risk of stroke, and total mortality: an overview of randomised trials. *JAMA* 1997;**278**:313-21.
9. BHF Coronary Heart Disease Statistics 2003. British Heart Foundation Health Promotion Research Group, Department of Public Health, University of Oxford. Oxford: British Heart Foundation, 2003. (www.heartstats.org/uploads/documents/2003stats.pdf)
10. Julie Foxton. *Our Inheritance, our future. Realising the potential of genetics in the NHS.* London: The Stationery Office, 2003. (www.tso.co.uk/bookshop).
11. Department of Health. National Service Framework for Coronary Heart Disease. London: Department of Health, 2000.
12. Brady AJB, Betteridge DJ. Prevalence and risks of undertreatment with statins. *Br J Cardiol* 2003;**10**:218-19.
13. Joint British Societies Guidelines. *Heart* 1998;**32**(suppl 1):1-35.
14. de Backer G, Ambrosioni E, Borch-Johnsen K *et al.* European guidelines on cardiovascular disease prevention in clinical practice. 3rd joint task force of European and other societies on cardiovascular disease prevention in clinical practice. *Eur Heart J* 2003;**24**:1601-10.
15. Department of Health: www.doh.gov.uk/heart



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