The management of hyperlipidaemia: are specialist lipid clinics needed?

ABSTRACT—A survey of all general practitioners in Oxfordshire was undertaken to determine what use they wanted to make of a district lipid clinic, and to assess how effectively it met their needs. The response rate was 85% (288/340) but some respondents failed to answer each section of every question. One hundred and eighty-five general practitioners (64%) had previously referred patients to the clinic. Most respondents selectively asked for blood cholesterol measurements in patients with major cardiovascular risk factors (94%, 266/283), and few routinely asked for cholesterol as part of a health check (17%, 43/258). Most thought that referral to a clinic was appropriate for children (65%, 149/229), for patients aged 20 to 39 (85%, 209/247), and for older patients aged up to 60 (77%, 186/243). Ninety-four per cent (260/277) wanted access to specialist advice for patients with a cholesterol concentration exceeding 8.0 mmol l\(^{-1}\), and 73% (197/270) wanted specialist advice before starting treatment with a lipid-lowering drug. Although most respondents rated the service provided by the clinic favourably, more than half would have liked more information on prognosis, drug treatment, long-term follow-up, and screening of family members. We conclude that general practitioners would like access to specialist advice for the management of severe hyperlipidaemias, and that cardiovascular screening programmes in primary care have important resource implications for specialist services.

Hypercholesterolaemia is a major modifiable risk factor for coronary heart disease [1, 2]. There is a continuous, curvilinear and dose-dependent relationship between total blood cholesterol concentration and the incidence of coronary heart disease over the whole cholesterol distribution [3], and more than half the British population have blood cholesterol concentrations which are higher than a recommended target level of 5.2 mmol l\(^{-1}\) [4,5]. This includes up to 1% of the population with major inherited lipid disorders [6] such as familial hypercholesterolaemia which is associated with a high morbidity and mortality from coronary heart disease [7, 8]. On average each general practitioner is likely to have 200 patients aged 25 to 59 who have cholesterol concentrations greater than 6.5 mmol l\(^{-1}\), the level at which specific lipid-lowering dietary advice is recommended [9,10]. This includes 30 to 40 patients with cholesterol concentrations greater than 7.8 mmol l\(^{-1}\), some of whom may require referral for specialist advice on diagnosis and management.

There have been few attempts systematically to evaluate clinical lipid services [11,12], and there are marked geographical disparities in the provision of lipid clinics. In 1989 only about one-third of the 195 district health authorities in England and Wales were known to have a lipid clinic [13]. In Oxford, a clinic was set up in 1972 which serves both a district population of 545,000 people and a wider catchment population drawn from neighbouring districts. Lipid abnormalities are managed in the clinic as part of the overall assessment of cardiovascular risk. The aim of our study was to find out what use general practitioners wanted to make of a district lipid clinic and to assess how effectively it meets their needs.

Subjects and methods

A postal questionnaire was sent to all principals, assistants and trainees in general practice in Oxfordshire in May 1990; a single reminder was sent to non-respondents two months later. The questionnaire consisted of 12 questions and used a multiple-choice question format, but encouraged additional comments. An introductory note explained that the questionnaire was intended to assess how effectively the clinic met the needs of general practitioners, and to enable them to influence the future pattern and provision of services. It asked whether all adult patients were screened for hypercholesterolaemia or only selected high-risk groups, what criteria were used for selective testing, and which patients would be referred to the clinic. Respondents who had referred patients were asked to state what services they would like the clinic to provide, and to rate its performance. Those who had not referred patients were asked their reasons for not doing so.

Data were analysed using the statistical package SPSS/PC+ [14]. Three respondents returned blank
questionnaires which were excluded from the analyses. Some respondents failed to answer each section of every question and the size of the denominator therefore varied. The answers to the questions were analysed by separate categories depending on whether or not respondents had ever referred patients to the clinic, and the results are presented separately where statistically significant differences were found between the two groups. The χ² test was used to test for differences between groups and a two-tailed level of significance of p < 0.05 was considered to be significant. The 95% confidence intervals for differences between proportions were calculated where appropriate.

Results

Completed questionnaires were returned by 288 of the 340 general practitioners (85%). A reply was received from at least one doctor in 75 of the 80 Oxfordshire practices (94%). One-hundred-and-eighty-five doctors (64%) had previously referred at least one patient to the clinic. Of those who stated reasons for not referring patients, about one-third (38/103) were unaware that the clinic existed, and another third (34/103) preferred to manage hyperlipidaemic patients without referral.

Figure 1 shows the percentage of respondents who routinely requested blood cholesterol measurements to exclude hypercholesterolaemia in various categories of patients. In the presence of other major cardiovascular risk factors, 94% (266/283) stated that they measured the cholesterol concentration. A much smaller proportion tested patients within a specified age range or as part of the health check, and only 4% (9/225) routinely tested all adults. Overall 62% of respondents (170/273) considered that they had adequate resources to provide dietary advice for patients with hyperlipidaemia, and 99% (179/181) indicated that they routinely assessed the effect of dietary modification before referral to the clinic. However, more than half stated that they required better access to a community dietician (56%, 129/230), and further training for doctors and practice nurses. Significantly more doctors who had referred patients to the clinic than those who had not done so identified a need for further training for themselves (65%[88/135] vs 48% [55/73], difference 17%, 95% CI 3 to 31%) and practice nursing staff (70%[99/141] vs 54%[42/77], difference 16%, 95% CI 2 to 29%).

Figure 2 shows the percentage of respondents who thought it appropriate to refer patients with hyperlipidaemia in various age groups to the clinic. Most thought referral was appropriate for children (65%, 149/229), for patients aged 20 to 39 (85%, 209/247), and for older patients aged up to 60 (77%, 186/243), but 23% (45/209) also wanted patients aged 60 or more to be seen. Figure 3 shows the percentage of respondents wanting access to specialist advice by the level of cholesterol; 94% (260/277) wanted access for patients with a cholesterol concentration exceeding 8.0 mmol l⁻¹. Most respondents wanted specialist advice before starting treatment with a lipid-lowering drug, but the proportion was significantly higher among those who had previously referred patients to the clinic (77% [136/176] vs 65% [61/94], difference 12%, 95%CI 1 to 24%).

General practitioners who had referred patients to the clinic were asked to give an overall rating to the service provided using a scale of 1 to 5 (1 = poor and 5 = excellent). Most rated the clinic favourably, with 59% (102/174) giving it a rating of 4 or 5, 34% (59/174)
The survey has shown that most general practitioners would like access to specialist advice since only about one-third of district health authorities in England and Wales have hospital lipid clinics. Demand for specialist advice is likely to increase as cardiovascular disease screening in primary care is more widely adopted. Already evidence suggests that between 1988 and 1989 the number of cholesterol samples analysed in Health Service laboratories in England and Wales has increased by 30% [15]. The recent report of the Standing Medical Advisory Committee (SMAC) [15] recommended opportunistic cholesterol screening for hypercholesterolaemia in general practice as part of a national strategy for cardiovascular disease prevention. Implementation of this recommendation would substantially increase the size of screening programmes. About 5% of a screened adult population aged 25 to 59 would be expected to have cholesterol concentrations exceeding 8.0 mmol l⁻¹ [4], and a recent study in general practice showed that despite adequate dietary advice about half these patients may need lipid-lowering drug therapy [16]. This suggests that general practitioners may require specialist advice for 1% or 2% of all adult patients who are screened for hypercholesterolaemia, although the exclusion of secondary hyperlipidaemia, a trial of dietary modification before referral, and the use of a district protocol for the management of hyperlipidaemia can contribute to a reduction in clinic referral rates. The number of patients referred would also be expected to decrease as general practitioners become more experienced in managing hyperlipidaemias, and as recommendations for a reduction in the dietary intake of saturated and total fat [17] by the general population are implemented.

Lack of a recognised specialty structure for secondary care of patients with hyperlipidaemia not only means that specialist advice is often unobtainable, but also has wider implications for postgraduate education and training. Many respondents acknowledged a need for further training for themselves and practice nurses. This is consistent with other evidence suggesting that general practitioners and primary care staff require better training in nutritional principles and dietary counselling [18]. A recent study has also questioned whether lipid-lowering drugs are prescribed appropriately in general practice [19]. Uncertainties about prescribing probably explain why two-thirds of respondents in our survey wanted specialist advice before initiating lipid-lowering drug therapy. If general practitioners are uncertain about clinical management, referral for specialist advice should enable them to become better informed about current clinical practice. More emphasis on an educational role for clinics may be necessary since we found that at least half the respondents who had referred patients wanted to be given more detailed information about dietary and drug treatment, long-term follow-up, prognosis, and screening of family members. Our results suggest that general practitioners give a high priority to receiving objective information about current clinical practice.

**Discussion**

The survey has shown that most general practitioners would like access to specialist advice for the management of severe hyperlipidaemias. Most respondents undertook selective screening to identify patients at high risk of coronary heart disease, and all used selective criteria for referral which would result in specialist clinics seeing mainly adults aged less than 60 years with cholesterol concentrations exceeding 8.0 mmol l⁻¹. About two-thirds of respondents also wanted specialist advice before initiating lipid-lowering drug therapy, but this would not substantially increase the number of referrals because drug treatment is usually restricted to patients with cholesterol concentrations exceeding 8.0 mmol l⁻¹, unless other marked or multiple cardiovascular risk factors are present [9, 10].

The results suggest that there is a substantial unmet demand from general practitioners for access to specialist advice since only about one-third of district health authorities in England and Wales have hospital lipid clinics. Demand for specialist advice is likely to increase as cardiovascular disease screening in primary care is more widely adopted. Already evidence suggests that between 1988 and 1989 the number of cholesterol samples analysed in Health Service laboratories in England and Wales has increased by 30% [15]. The recent report of the Standing Medical Advisory Committee (SMAC) [15] recommended opportunistic cholesterol screening for hypercholesterolaemia in general practice as part of a national strategy for cardiovascular disease prevention. Implementation of this recommendation would substantially increase the size of screening programmes. About 5% of a screened adult population aged 25 to 59 would be expected to have cholesterol concentrations exceeding 8.0 mmol l⁻¹ [4], and a recent study in general practice showed that despite adequate dietary advice about half these patients may need lipid-lowering drug therapy [16]. This suggests that general practitioners may require specialist advice for 1% or 2% of all adult patients who are screened for hypercholesterolaemia, although the exclusion of secondary hyperlipidaemia, a trial of dietary modification before referral, and the use of a district protocol for the management of hyperlipidaemia can contribute to a reduction in clinic referral rates. The number of patients referred would also be expected to decrease as general practitioners become more experienced in managing hyperlipidaemias, and as recommendations for a reduction in the dietary intake of saturated and total fat [17] by the general population are implemented.

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*Fig. 3. Percentage of respondents wanting access to specialist advice by the level of cholesterol*
from specialists, and, in its absence, they have to rely on information from other sources, such as the pharmaceutical industry.

A high proportion of the cost of programmes for screening and treatment of hypercholesterolaemia is accounted for by lipid-lowering drug therapy [20]. Inappropriate or overprescribing therefore has major cost implications for programmes as well as potential risks for patients. The available evidence suggests that 3% of a screened adult population aged 25 to 59 may require drug therapy [16], and, since the annual cost of the commonly prescribed lipid-lowering drugs ranges from £105 to £885, the cost to the NHS of lipid-lowering drugs could potentially rise to at least £200 million per annum (which represents 8% of the estimated amount of the 1989 NHS drug budget [22]). Treatment of patients at relatively low risk of coronary heart disease would result in a rapid escalation of costs without corresponding benefits because the expense of screening programmes is particularly sensitive to drug prescription rates [20]. Given the financial costs, the potential risks associated with life-long drug therapy, and the clinical uncertainty about the management of some groups of hyperlipidaemic patients such as the elderly, it is important that general practitioners should have access to specialist advice.

In summary, the survey has demonstrated a clear demand from general practitioners for access to specialist advice for the management of severe hyperlipidaemias. Although the study was conducted in a single health district, it is likely that it reflects wider needs. Because the management of lipoprotein disorders is not a recognised clinical specialty, better provision of specialist lipid clinics depends on the response of specialties such as clinical chemistry, diabetes and cardiology which provide most of the existing expertise. Appropriate training ought to be included in higher professional training programmes, and district health authorities should take account of the needs of general practitioners for specialist lipid services in purchasing care for their resident populations. It is important to recognise the resource implications for specialist services of screening undertaken in primary care to identify patients at high risk of coronary heart disease.

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