Barriers to detecting and treating hypercholesterolaemia in patients with ischaemic heart disease: primary care perceptions

James Hickling, Stephen Rogers and Irwin Nazareth

ABSTRACT

Background
Treating hypercholesterolaemia in patients with ischaemic heart disease can significantly reduce vascular deaths and events. Many such patients, however, do not receive effective treatment for hypercholesterolaemia.

Aim
To ascertain the barriers to the detection and treatment of hypercholesterolaemia in patients with ischaemic heart disease as seen by primary care teams.

Design of study
Qualitative study using the nominal group technique.

Setting
General practice teams in the North Thames region of the Medical Research Council General Practice Research Framework.

Method
The main outcomes measures used were identification of the barriers to the detection and treatment of hypercholesterolaemia together with relative rankings.

Results
Fourteen individual barriers were identified. The main barriers were: organisational barriers within general practices; confusing and conflicting guidelines from external sources; errors and omissions by GPs; communication problems at the interface between secondary and primary care; and reluctance by patients to take medication.

Conclusions
The reasons for suboptimal detection and treatment of hypercholesterolaemia are complex and act at various levels. Interventions to improve the management of this condition must address these barriers in order to be successful.

Keywords
attitude; attitude of health personnel; barriers to treatment; family practice; hypercholesterolemia; myocardial ischaemia.

INTRODUCTION

Patients with established ischaemic heart disease should be offered advice and treatment to reduce their future cardiovascular risk.[1] Although treatment with statins can result in a 24% reduction of vascular deaths and non-fatal events in these patients,[2] many do not receive them.[3] Strategies to improve clinical practice have resulted in only limited success,[4,5] although case method learning has shown some promise.[6] Lack of resources, the inverse care law, safety concerns, suboptimal dosage, the need for dose titration, and patient non-concordance have been variously implicated.[7] A recent French study explored patients' and physicians' perceptions of hypercholesterolaemia and found problems with patients' understanding of hypercholesterolaemia and cardiovascular risk, and concerns about the side-effects of medication.[8] The authors suggested that these factors could help reduce adherence to lifestyle changes and medication.

Effective methods for implementing changes to clinical practice are urgently required, but before this we must identify the existing barriers to change.[9] Such barriers have previously been classified under organisation, doctor, patient, and the doctor–patient interaction.[10]

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We aimed to identify the barriers to the detection and treatment of hypercholesterolaemia in patients with ischaemic heart disease from the perspective of primary care teams. We used a structured consensus-forming method — the nominal group technique — to identify and grade these barriers. This was preceded by a presentation of each practice's current performance in the detection and management of hypercholesterolaemia in patients with ischaemic heart disease.

How this fits in

The benefits of statins in patients with ischaemic heart disease are significant and well-established, yet many patients do not take them. Trials have had limited success in improving the uptake of statins. Although the barriers to use of statins have been studied before, the results have been variable and the relative importance of individual barriers has not been assessed. Our findings highlight a broader range of barriers than was previously recognised and identifies those barriers thought to be most significant.

METHOD

Practices

Ten practices in the Medical Research Council General Practice Research Framework (MRCGPRF) in the North Thames region, who had participated in another study on ischaemic heart disease management from 1997 to 2000 and whose selection process is described elsewhere,[11] were invited to participate in this study; eight agreed to do so. Two declined owing to lack of time. The study was conducted during 1999.

Assessment of current performance

At each practice we identified patients with angina or previous myocardial infarction. A representative sample of 26–100 case notes per practice (practice staff availability determined the actual number) was examined to identify any record of cholesterol measurement and prescription of statins. We calculated the percentage of patients with ischaemic heart disease who had a recorded cholesterol measurement, and the percentage of those who had ever been found to have a total cholesterol level above 5.0 mmol/l (irrespective of current level), who had also been prescribed statins.

Practice meetings

We invited all GPs and practice nurses to a meeting at each practice. Individual practice data was presented on current performance against aggregate data for all the study practices. A nominal group process[12,13] was then conducted to elicit the barriers that clinicians perceived limited the testing for, and treatment of, hypercholesterolaemia in their own patients with existing ischaemic heart disease (Box 1).

Analysis of factors

The factors formulated by each practice were analysed using grounded theory by two researchers for common themes (or barriers). A comprehensive list of themes was drawn up and each individual factor was reclassified under a single theme. For example, factors such as 'housebound patients: reactive care', 'long-standing angina, stable heart disease — doesn't come into the agenda', and 'workload pressure (GP time for consultation): less proactive more reactive' were reclassified under a common theme of suboptimal general practice organisation. We then applied a rank score (1–5, with 5 indicating the most highly ranked factor and 1 the lowest) to each common theme by considering the top five factors in each practice. The points were allocated to the corresponding theme and added to produce rank sums to provide an approximate measure of each theme's relative importance.

RESULTS

Practices and participants

The mean list size across participating practices was 9366 (range = 6350–14 686.) Four practices were situated in inner London, three in outer London, and one in a neighbouring county. All 45 GPs and 16 practice nurses at the practices were invited to attend the meetings; 32 (71%) GPs and 14 (88%) practice nurses did so.

Current performance

The notes of 466 patients with ischaemic heart disease were assessed in detail. A total of 228 patients (49%; range = 20–72%) had a cholesterol

Box 1. Nominal group process.

- Participants were asked to write down in private any relevant factor that they thought acted as a barrier to testing for, and treatment of, hypercholesterolaemia.
- Each participant was then asked in turn to offer one factor they had recorded and these were listed on a flipchart until no more were offered.
- Clarification stage: the group discussed each factor and, where appropriate, combined two or more factors that were thought to overlap significantly.
- Participants privately ranked the five factors they thought were most 'important': five points for the most important, four points for the second most important; and so on.
- The sum of each factor's scores was then calculated for each practice.

Table 1. Barriers to testing for, and treatment of, hypercholesterolaemia in patients with ischaemic heart disease in order of rank sum.

Themes (barriers) derived from analysis of factors given by all practices	Rank sum
Organisation: general practice	24
No system for identifying old diagnoses or recalling patients Workload pressures and prioritisation Difficult to offer proactive care, tests and monitoring to housebound patients Test results not processed methodically No practice protocol Poor continuity of care	
Organisation: external guidelines	21
Guidelines differ in threshold for treatment and change with time Confusing guidelines that are difficult to follow Complexities regarding low-density lipoprotein (LDL) and high-density lipoprotein (HDL)/total cholesterol ratio (Previous) lack of evidence of benefit in older people.	
GP: error	13
Omission, oversight, or forgetting of cholesterol issue Non-utilisation of computer template	
Organisation: secondary–primary care interface	12.5
GPs assume that specialist teams will have tested and treated cholesterol if indicated Specialists do not routinely communicate cholesterol results Some hospitals did not treat cholesterol	
Patient factors: general reluctance to take medication	10
Patients' attitudes and reluctance to taking extra tests and tablets, especially when no symptomatic benefit Older patients hold a more fatalistic attitude Chaotic lifestyles	
GP: clinical judgement	9
GP conclusion that treating cholesterol is of borderline benefit in some patients: low life expectancy, poor quality of life, borderline cholesterol level	
Condition-specific factors: lifestyle measures	9
Many guidelines advocate use of diet, weight loss, exercise, and alcohol moderation before medication Difficult to judge when to start medication Reluctance by doctor or patient to medicalise issue	
Medication factors: side-effects, interactions, and contraindications	7
Actual or anticipated Avoidance of polypharmacy	
Patient factors: poor understanding or alternative beliefs	5
Unaware of importance of cholesterol testing and treatment Resistant to education Alternative cultural beliefs about disease	
Condition-specific factors: need for fasting cholesterol	4
Acts as a barrier to measurement and interpretation	
GP: knowledge and beliefs	3
Low awareness of importance of cholesterol Use of incorrect threshold Poor understanding of guidelines for treatment and monitoring	
Organisation: cost of statins	2.5
Relatively expensive drug Limited prescribing budget	
Condition-specific factors: delayed benefit	0
No symptomatic improvement from medication	
GP: other	0
Consultation skills Prejudice	

measurement recorded (Table 1), of whom 192 had at least one total cholesterol entry over 5.0 mmol/l. Of these, 26% (50/192; range = 14–50%) had been prescribed a statin at some point. Of all patients with ischaemic heart disease, only 11% (50/466) had been prescribed a statin.

Nominal group outcomes and rankings

Practices provided 101 individual factors to explain the suboptimal testing for, and treatment of, hypercholesterolaemia. Analysis of these factors produced 14 common themes or barriers (Table 1). These barriers were classified according to their level of action: GP, patient, organisation of health care, medication, and the nature of the condition.

Organisation within general practice was ranked most highly (rank sum 24). This was characterised by a lack of proactive care of ischaemic heart disease patients, limited time in relatively reactive consultations, and logistical problems. The second greatest barrier (rank sum 21) was the difficulty in interpreting complex and conflicting external guidelines that did not extend to older patients. Some of the middle ranking barriers were: omissions on the part of the GPs in managing cholesterol problems, communication problems at the interface between secondary and primary care, and a general reluctance by patients to take extra medication (rank sums 13, 12.5, and 10, respectively.) The next three themes suggest that non-treatment of hypercholesterolaemia might at times be justified: clinical judgement by a GP that treatment would be of borderline benefit in specific patients; the pursuit of lifestyle measures before prescription; and side-effects, interactions, and contraindications of statins including avoidance of polypharmacy (rank sums 9, 9, and 7, respectively). Other factors, considered less important by participants, appear in Table 1.

DISCUSSION

Summary of main findings

The list of perceived barriers to testing and treating cholesterol in patients with ischaemic heart disease was long and varied, and reflects the complexity surrounding implementation of new guidelines.[9] Three of the four most important barriers were organisational, highlighting the importance of the health service infrastructure in delivering effective health care. GP shortcomings were ranked third, and patient reluctance to take medication fifth. We identified several new barriers, and the ranking process has allowed us to identify for the first time the most important factors affecting clinical practice.

Comparison with existing literature

Organisational factors, such as a lack of resources, have been suggested before as a potential barrier.[7] A recent study using semi-structured interviews with GPs found that time and workload pressures acted as one of several barriers to statin initiation,[14] although no estimate of its relative importance could be made. The same study also identified the cost of statins as a significant barrier, which contrasts with our findings where it was ranked 12th in importance. A recent trial of assistance in setting up a disease register and recall system found that assessment improved but clinical outcomes did not, when compared to audit and feedback.[4] This result may be explained by the presence of the additional barriers we have identified.

Inconsistent and complicated ischaemic heart disease guidelines have previously been recognised as confusing for GPs[14] and our study shows that this confusion acts as a barrier to managing hypercholesterolaemia. Guidelines should be authoritative, flexible, unbiased, concordant with current practice, and should be introduced using active education techniques.[15]

The two biggest barriers identified in our study were addressed in a trial of information management and evidence-based medicine to improve recording and management of risk factors for patients with ischaemic heart disease.[5] The intervention resulted in modest improvements in statin prescribing and cholesterol reduction. This appears to confirm that these barriers are significant, but that they do not explain the whole gap between guidelines and practice.

Several of the barriers we identified have not been identified previously. GP errors and omissions cannot be prevented entirely, but some overlap can be seen with confusing or complex guidelines. Problems at the primary/secondary care interface were highly ranked as a barrier, but as GPs become more familiar with managing cholesterol, this may diminish. Clinical judgement of a low benefit–risk ratio in individual patients is an important factor as it implies that GPs are interpreting guidelines flexibly.

Patient non-concordance with statin treatment has been identified in the Heart Protection Study[2] where 85% concordance was reported under trial conditions and longer term rates of 36–42% have been recorded.[16,17] Our findings, as well as others,[14] reflect this with GPs aware of the reluctance of patients to take medication, particularly where there is no immediate symptom benefit. Significant differences in understanding between patients and clinicians about cardiovascular disease have been documented[8] and this study shows that these may act as a further barrier (barrier 9).

Strengths and limitations of this study

Combining audit feedback and nominal group processes is novel and we believe it encourages more relevant results and self-critical thought; the ranking helps prioritise the barriers and analysis is simpler and quicker.[12,13] Possible limitations, however, were that practices were self-selecting and may not be representative of all GPs — although in spite of this, practices covered a variety of locations and socioeconomic populations, and their management of cholesterol was similar to national estimates.[3] The barriers perceived by participants may not reflect the actual barriers, although their consistency across practices and self-critical nature supports their validity. Variable sampling ratios of notes in the practice audits may have reduced the accuracy of audit data to a small degree, but this is unlikely to have affected the qualitative outcomes of the nominal groups.

Implications for clinical practice and future research

The barriers identified in this study represent the complex situation that existed before the new General Medical Services contract was introduced in April 2004. This provides financial rewards for good quality clinical practice, including measuring and treating cholesterol in patients with ischaemic heart disease.[18] As a result, GPs will, therefore, be increasingly interested in improving their clinical practice in this area. Financial rewards and associated information technology advances may overcome some barriers, such as omissions and oversights, but this study has identified both disease-specific and patient barriers that GPs should consider if the they are to have an impact on the health of people with ischaemic heart disease. Future studies should be conducted to assess any changes in clinical practice and the type and hierarchy of barriers in light of the new contract.

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Ethics committee

Ethical approval for this study was from the Camden & Islington Local Research Ethics Committee (LREC). The audit work undertaken as part of another study was approved by University College London/University College London Hospitals Ethics Committee and the LRECs in whose area each practice was based

Competing interests

None

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