Guidelines on the Diagnosis and Management of Hyperlipidaemia in General Practice

The Irish College of General Practitioners
GUIDELINES ON THE DIAGNOSIS AND MANAGEMENT OF HYPERLIPIDAEMIA IN GENERAL PRACTICE

Dr J Cox, Dr M Coughlan, Professor J McCormick, Dr P Skrabanek, Dr R O'Connor, Prof G Bury, Dr D Bluett, Dr E Conway McGee, Dr C Molloy.

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The high prevalence of cardiovascular disease has focussed the attention of the medical profession and the general public for many years. The Irish College of General Practitioners since it was founded in 1984 has recognised that a variety of views exist regarding the extent to which specific risk factors relate to cardiovascular disease and in particular to coronary heart disease.

The Clinical Review Committee was established in June 1990 to address the question of hyperlipidaemia and in particular of hypercholesterolaemia and their relevance to the development of cardiovascular disease.

After much discussion, debate and review of the literature, the Committee has arrived at a consensus statement which I believe is fair and reflects the true position. However, because of the wide range of views held by members of the Task Force, arriving at a consensus was not easy. The reservations of two members of the committee were respected and are noted in the final document.

Hopefully, this statement will stimulate further debate and discussion and will serve as a guideline for the practising profession. Our thanks are due to the members of the Committee and in particular to Dr John Cox who headed the Task Force and worked arduously in researching the subject and producing the final document.

Dr Michael Coughlan,
Chairman, Clinical Review Committee.
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BACKGROUND

The Task Force on the prevention of cardiovascular disease was formed in the Summer of 1990 by the Clinical Review Committee of the Irish College of General Practitioners (ICGP). It was given the remit to draw up a set of guidelines on the diagnosis and management of hyperlipidaemia* in general practice. A list the members of this Task Force is given in Appendix 1.

The Task Force met on three occasions. Material from the following sources was taken into account: the Report of the National Cholesterol Education Program Expert Panel on Detection, Evaluation, and Treatment of High Cholesterol in Adults,1 the policy statement of the European Atherosclerosis Society,2 the Royal College of General Practitioners' publication, The Prevention of Coronary Heart Disease (1988),3 the Irish Hyperlipidaemia Association's publication, Guidelines for the Management of Hyperlipidaemia,4 the published work of three of the members of the Task Force, Professor James McCormick,5 Dr Petr Skrabanek,5 and Dr Raymond O'Connor,6 the Irish Heart Foundation's position paper Cholesterol Screening in Ireland (draft dated 27/7/90 - personal communication), the Scottish Home and Health Department Scottish Health Service Advisory Council report (1990)7 and the Royal College of General Practitioners Coronary Prevention Group's publication, Risk assessment in the Prevention of Coronary Heart Disease: a Policy Statement,8 with its accompanying editorial by Dr Julian Tudor Hart in the British Journal of General Practice entitled Coronary heart disease: preventable but not prevented?9

INTRODUCTION

Atherosclerosis arises as a result of the deposition of lipid material in the arterial wall which stimulates the growth of smooth muscle, the production of fibrous tissue and the laying down of calcium.10 Although it has been described as the inevitable fate of all human arteries, the aetiology of this condition remains one of the most controversial areas in medical science.11

The risk factor argument is based on the premise that a number of identifiable characteristics, some of which are reversible, are associated with the process of atherogenesis, and that the incidence of diseases thought to be manifestations of this condition including coronary heart disease (CHD), can be reduced or their onset delayed by addressing these factors. The reversible risk factors in young and middle-aged subjects include cigarette smoking, high blood pressure, high cholesterol levels and to a lesser extent, obesity.12

Within the Task Force a range of views existed on the extent to which specific risk factors have been shown conclusively to be related to the incidence and prevalence of CHD. It was nevertheless decided by the majority that the incidence of the disease could be addressed through this association, dissenting members included Prof. J. McCormick and Dr. P. Skrabanek.

*Includes elevations of cholesterol and/or triglyceride.
STRATEGIES FOR PREVENTION

A coordinated and comprehensive strategy for the prevention of coronary heart disease demands action from a wide range of agencies including national and local government, health and education authorities, the medical profession and the commercial sector. Action by individuals will follow from appropriate lifestyle advice provided in the context of a comprehensive health promotion strategy. Such a programme is currently under consideration by the Irish Heart Foundation (Irish Heart Foundation’s National Plan for the Community Control of Coronary Heart Disease, draft August 1990 - personal communication). The primary health care team system offers a unique opportunity for providing lifestyle advice on an individual basis. There are two components to this strategy - the identification of people at high-risk and the provision on an individual basis of advice, treatment and follow-up as appropriate.

IDENTIFICATION OF HIGH-RISK INDIVIDUALS

Since CHD is thought to be multifactorial in origin, prevention must not place undue emphasis on any one risk factor in isolation. In particular, cholesterol testing should only be carried out in the context of an assessment of other risk factors for CHD and where there is provision for appropriate follow-up by the general practitioner.

We are in general agreement with the recommendations of the Royal College of General Practitioners’ Coronary Prevention Group’s publication, Risk Assessment in the Prevention of Coronary Heart Disease: a Policy Statement. The main recommendations of which are:

1. Simple non-invasive risk-factor measurement for all individuals, that is the recording
   (a) Whether the person has a close family history of CHD and noting details, especially of premature heart disease;
   (b) Smoking history and providing smokers with assistance and advice for giving up;
   (c) Height, weight and giving advice on diet and physical activity;
   (d) Blood pressure and advising on factors such as alcohol, obesity and possibly a high salt intake which may contribute to raised blood pressure.

2. Cholesterol measurement for individuals under 50 years of age at high-risk of coronary heart disease, that is those
   (a) Under the age of 50 years with xanthelasmas or corneal arcus and people with xanthomas at any age;
   (b) With a close family history of familial hyperlipidaemia or of premature CHD (a first degree relative who has heart attack before the age of 50 years for men and 55 years for women);
   (c) With diabetes;
   (d) Under drug treatment for hypertension;
   (e) With recognised CHD, including those who have had a heart attack or coronary bypass surgery.

Cholesterol testing should be selective. As pointed out by several members of the Task Force and
the RCGP report, if general practitioners were to extend cholesterol testing to members of their practice populations other than those listed above, priority should be given to those in whom other risk factors for CHD are raised, eg smokers, those with raised blood pressure, those who are overweight, or those who have a family history of CHD at any age. As this may account for more than two thirds of a practice population, it should not be undertaken without proper planning.

**LIPID MEASUREMENT**

While samples for measurement of cholesterol need not be taken with the subject fasting, those for a lipid profile (see below) should be. Quality control of cholesterol measurement is essential and we would draw attention to the fact that some desktop devices have been prone to operator faults. However, even with laboratory testing there is still the substantial problem of within-patient variability which can lead to misclassification of individuals and inappropriate intervention.

In certain patients it is desirable to characterise the lipoprotein abnormality by measuring high density lipoprotein (HDL) and triglyceride levels (lipid screen). Patients must be fasting for these blood samples and they are more expensive than a simple total cholesterol measurement. For these reasons they should be confined to the following groups:

(a) Those with cholesterol greater than 6 mmol/l on repeated testing.
(b) First degree relative of (i) patients with a history of premature heart disease (CHD at less than 50 years of age for men and 55 years for women) and (ii) patients with familial hypercholesterolaemia.
(c) Those with xanthomas or premature corneal arcus.
(d) Those with diabetes mellitus.
(e) For monitoring of drug treatment.

**WHO SHOULD BE TREATED FOR HYPERLIPIDAEMIA?**

An underlying cause for the hyperlipidaemia should always be considered. Such causes include diabetes, obesity, renal and liver disease, hypothyroidism and alcohol abuse. No treatment, even diet, should be commenced on the basis of a single result, because of the biological and analytical variation in cholesterol measurement.

Several reports have been published recently suggesting that 5.2 mmol/l be regarded as the desirable upper limit of normal for total cholesterol. Although most of the studies on which these reports are based were carried out in male populations, it is assumed that this risk factor is shared by both sexes. It is accepted that over half of the Irish population has cholesterol levels in excess of this figure. In practical terms, this means that, should we detect all “at-risk” subjects, a general practitioner with a practice of 2,000 subjects would have up to 1,000 such patients. A more conservative approach with the following guidelines is recommended:
(a) Levels of cholesterol below 6 mmol/l may be regarded as acceptable. Those with levels close to 6 mmol/l should be offered general dietary advice on healthy eating. These should be in line with the proposed National Programme of Health Promotion.

(b) Levels of 6-8 mmol/l - repeat the test and if still raised, carry out a fasting lipid screen (see above). These patients usually respond to 3-6 months dietary intervention but if cholesterol levels are still above 6 mmol/l after diet, consideration may be given to drug treatment especially if there are other risk factors present or HDL is less than 1 mmol/l, but not usually in patients above 60 years unless atherosclerosis is clinically evident.

(c) Levels of 8-10 mmol/l are definitely high, and if confirmed on repeated testing, a fasting lipid profile should be carried out to characterise the disorder. Initial treatment is dietary but drug treatment will almost certainly be necessary if levels do not fall below 7-8 mmol/l in 3-6 months.

(d) Levels of more than 10 mmol/l - as in (c), but in addition, many of these patients will have familial hypercholesterolaemia and so a family screen should always be considered. Such patients should probably be referred to a specialist medical facility.

How Should Hyperlipidaemia Be Treated?

Hypercholesterolaemia should not be treated in isolation. Thus, treatment must also include advice on other risk factors present such as hypertension, smoking and obesity. Moreover, time must be set aside to discuss the patient’s feelings about the diagnosis and any worries this may be causing.

The aim of dietary therapy is to reduce high cholesterol levels while maintaining a nutritionally adequate diet. The objective is to reduce daily cholesterol intake to less than 300 mg and to reduce the proportion of calories in the diet derived from fat to less than 35% in mild cases and 30% in moderate or severe cases with particular emphasis on reducing saturated fat. Overweight patients require overall caloric reduction. In practice such a diet is relatively simple, and mainly concentrates on an increase in low fat foods such as low fat dairy products, lean red meat, fish, poultry, vegetables, fruit, whole grain cereals, and bread. By such means it is possible to reduce cholesterol by up to 15% and so treat cases of mild hyperlipidaemia. Reassess the effect of diet after 3-6 months. This dietary advice can be given by the physician to the patient.

If this approach fails, then the patient should see a diettian for a diet which involves a reduction of saturated fatty intake to less than 7% of calories and cholesterol to less than 200 mg/day.

While drug treatment of hypercholesterolaemia has been shown to reduce deaths from cardiovascular disease, no study to date has shown these agents to have a favourable effect on overall mortality rate. Apart from the physical side-effects of treatment, the Task Force also considered the possible psychological sequelae of treatment of this condition. Moreover, these drugs are expensive. For these reasons, a vigorous and sustained dietary effort is recommended before resorting to drug treatment. Drug therapy should be added to dietary therapy and not substituted for it.

A detailed description of the various drugs available for the management of hyperlipidaemia was considered to be beyond the scope of this document. For further information on these agents the booklet entitled "Guidelines for the Management of Hyperlipidaemia," published by the Irish Hyperlipidaemia Association and the British National Formulary should be consulted.
CONCLUSIONS

The general practitioner is ideally situated to identify patients at high risk of developing CHD and to provide advice, treatment and follow-up as appropriate on an individual basis.

Cholesterol testing must be selective and should only be carried out in the context of an assessment of other risk factors for CHD and where there is provision for appropriate follow-up by the general practitioner. Management should be by dietary means in the first instance, with drugs added only if indicated.

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REFERENCES


APPENDIX 1.

MEMBERSHIP OF TASK FORCE ON PREVENTION OF CARDIOVASCULAR DISEASE:

Dr J Cox, GP, Dun Laoghaire Faculty ICGP (Chairman).

Dr M Coughlan, Galway Faculty ICGP, Chairman of the Clinical Review Committee ICGP.

Professor J McCormick, Department of Community Health, University of Dublin, Trinity College, Dublin.

Dr P Skrabaneck, Department of Community Health, University of Dublin, Trinity College, Dublin.

Dr R O’Connor, GP, Limerick Faculty ICGP.

Prof. G Bury, Department of General Practice, UCD.

Dr D Bluett, GP, Galway Faculty ICGP.

Dr E Conway McGee, GP, Galway Faculty ICGP.

Dr C Molloy, GP, Cork City Faculty ICGP.