NSF lipid targets in patients with CHD: are they achievable in a real-life primary care setting?

Are the National Service Framework (NSF) lipid targets achievable in real life and how easy will it be for general practitioners to measure success? This paper reports on a study carried out in primary care to model NSF criteria for lipid lowering against current practice.

Abstract

The secondary prevention of coronary heart disease (CHD) is a recognised priority for primary care and is a fundamental part of the published National Service Framework (NSF). The majority of patients receive statins to reduce their total cholesterol (TC) and low-density lipoprotein cholesterol (LDL-C) levels. The NSF set out targets for both TC and LDL-C. This study was designed to investigate the applicability of these targets in a real-life setting. One hundred and ten patients aged under 75 with established CHD were screened and their lipids measured. Eighty (73%) were on a statin. Mean TC was 6.3 mmol/L before treatment and 4.8 mmol/L after. Of these 80 patients, 46 (58%) had a TC below 5.0 mmol/L. Only 39% of patients met the stricter criterion of less than 5.0 mmol/L and a 25% fall in TC. No patient whose pre-treatment TC was below 5.0 mmol/L had reached a 25% reduction as well. The use of a threshold and a percentage may be potentially confusing to GPs and reduce the implementation of these targets.

Key words: cholesterol, statins, coronary heart disease, National Service Framework.

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Introduction

The recent publication of the National Service Framework (NSF) for coronary heart disease[1] (CHD) has specific targets for both total cholesterol (TC) and low-density lipoprotein cholesterol (LDL-C) levels. There is still confusion about target lipid values despite the revised advice of the Department of Health published after the NSF as a letter in the *BMJ*.[2] Dr Boyle stated that "...statin therapy should aim to lower cholesterol below 5.0 mmol/L or to reduce TC by 20–25% whichever would result in the lowest figure. Equivalent figures for LDL cholesterol would be 3.0 mmol/L or 30% reduction…". All practices in the UK will be expected to meet this target.

> ***'The use of a target which combines both a threshold and a percentage fall is potentially confusing and may result in failure to prescribe a statin, especially to those patients whose total cholesterol was initially less than 5.0 mmol/L'***

The aim of this study was to determine the proportion of patients with CHD receiving a statin and achieving their target TC and LDL-C according to the various criteria of 'success'. It was also designed to determine the feasibility of applying NSF targets in everyday practice. Ethical consent was provided by the Exeter Local Research Ethics Committee.

Methods

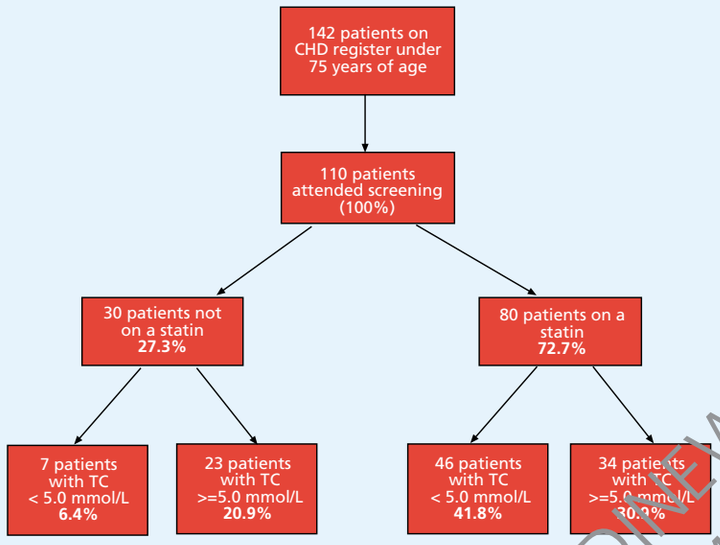
All patients with CHD on our previously validated database in a single five-partner research practice of 6,282 (1 Oct 2000) were identified. The practice has had a focus on CHD for several years. In the light of the NSF guidance and the then current statin literature, only patients aged under 75 years were included and their notes searched for exposure to statins and changes in TC on treatment. All patients were then invited to have a fasting lipid analysis performed by our practice nurse to assess their target TC and LDL levels. Their other risk factors were also recorded.

Results

The results we obtained are summarised in figures 1 and 2. One hundred and forty-two patients in this age group were identified as suffering from CHD in any form (2.3% of the list). The majority of patients were male (63%); 44% of this CHD group had suffered an acute myocardial infarction; 35% were recorded as still smoking; 86% were on aspirin. Ninety-nine (70%) had received a statin prescription at some time, and 96 (68%) had been prescribed a statin in the preceding three months. Of this latter group, 18 (19%) had received more than one statin.

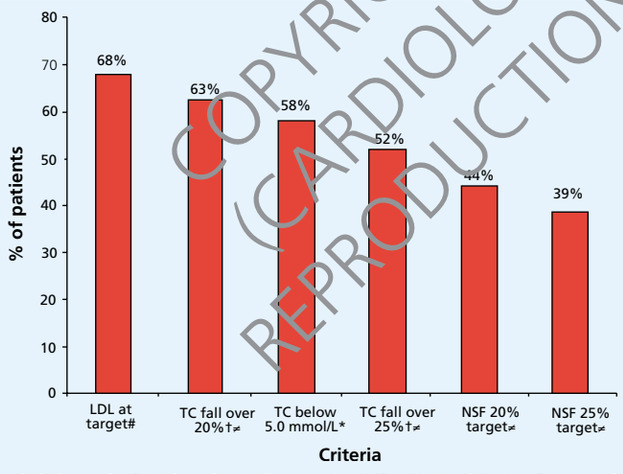
We carried out a screening check which 110 patients (77%) attended. Of these 110 patients, 80 (73%) reported taking their statin as prescribed and 30 (27%) were not on a statin (figure 1).

Figure 1. Results after a screening check showing the number of CHD patients on a statin and also those reaching the NSF cholesterol target of < 5.0 mmol/L



Key: TC = total cholesterol; CHD = coronary heart disease; NSF = National Service Framework

Figure 2. Results from the subgroup of patients on statins who reached target changes in TC by different criteria



Key: TC = total cholesterol; LDL = low-density lipoprotein; NSF = National Service Framework; † refers to the numbers of patients achieving the percentage fall in total cholesterol (but not necessarily meeting the NSF target of < 5.0 mmol/L); * of 80 patients; ≠ of 75 patients; # of 69 patients

Of this sample of 80 patients, three separate groups emerged according to whether or not there was full data, a pre-treatment cholesterol reading recorded, or an LDL-C result at the screening check.

Of the 80 patients on statins, we worked out the target changes in TC using various different criteria (figure 2). Forty six (58%) had a TC at target below 5.0 mmol/L.

During the study it was noted that cholesterol before treatment commenced was not recorded in five (6%), hence it was only possible to calculate the percentage fall on statins in 75 of these patients. Only 33 (44%) met the 20% NSF target (of less than 5.0 mmol/L or a 20% reduction whichever gives the lower figure) and even less, 29 (39%), met the stricter target of less than 5.0 mmol/L or a 25% fall in TC. When we looked at the percentage fall in TC only, irrespective of the cholesterol level reached, 47 (63%) of patients recorded a TC fall of over 20%; 39 (52%) recorded a TC reduction of over 25%. Mean TC in the group before treatment was 6.3 mmol/L and mean after treatment was 4.8 mmol/L.

At the screening check only 69 (86%) of the 80 patients had an LDL-C result recorded (due to difficulty

'No patient whose total cholesterol was less than 5.0 mmol/L had reached the NSF target of a 20–25% reduction'

fasting, high triglycerides etc.). Of these, only 47 (68%) were at target (i.e. < 3 mmol/L). We could not determine whether any patients had achieved the target of a 30% reduction in LDL-C since only four patients (5%) had a pre-treatment LDL-C level recorded.

No patient whose initial TC was less than 5.0 mmol/L had reached the NSF targets of a 20–25% TC reduction and only seven of the 30 patients not on a statin were below target TC of 5.0 mmol/L. Of the patients not on a statin, none met either NSF target. Manipulation of the data needed a statistical package (SPSS) to calculate the NSF criteria.

Discussion

This study, conducted in 2000, showed that in a single practice over two-thirds of patients were already receiving a

Key messages

- NSF targets state that statin therapy should lower total cholesterol below 5.0 mmol/L or by 20–25% (whichever is the lower figure)
- Targets for low-density lipoprotein cholesterol are below 3.0 mmol/L or a 30% reduction (whichever is the lower figure)
- More than two thirds of patients with CHD in this study were prescribed a statin
- These complex criteria are difficult to put into everyday practice
- Meeting these targets will be time consuming and expensive

statin. Historically, practices have moved from a situation in the late 1990s when there was a perverse incentive not to prescribe statins, i.e. a loss of prescribing incentives if practices exceeded their prescribing budget,[3] to the situation following the Wanless Report,[4] when agreement was made to fund statin prescribing. Several commentators have recently highlighted the rule of halves in statin prescribing,[5] but some practices, such as our own, had already exceeded 50% of eligible patients on a statin in 2000.

It is interesting, in the light of our finding, that the new General Medical Services contract[6] has adopted a threshold rather than a percentage fall in total cholesterol for patients with CHD (measured within the last 15 months) in that 60% of patients have a TC of 5.0 mmol/L or less.

From this small study it is likely that for the vast majority of ordinary general practices, putting the complex NSF criteria into operation will be difficult. The use of a target which combines both a threshold and a percentage fall is potentially confusing and may result in failure to prescribe a statin, especially to patients whose TC was initially less than 5.0 mmol/L. GPs and their patients may be demoralised by failure to achieve the NSF end point and this is potentially another example of GPs appearing not to implement evidence.[7] Further increases in statin doses to achieve these NSF targets will have huge workload[8] and financial implications for practices, Primary Care Trusts and the NHS.[3]

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PHE conceived the idea for this project. ML, CP and PHE designed the protocol with advice from AR and MS. PHE and ML co-ordinated the study and carried out the analysis of the data. All authors participated in the interpretation of the data and the writing of this paper. PHE is the guarantor for this study.

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