

Hypercholesterolaemia: setting a Dutch national standard

GUY RUTTEN

JAAP VAN DER LAAN

SUMMARY. Since 1989 the Dutch college of general practitioners (Nederlands Huisartsen Genootschap) has published a total of 22 standards on different subjects. For the standard on hypercholesterolaemia a working conference was organized and attended by the most active general practitioners in the college. The conference aimed to facilitate the publication of a well balanced standard and to judge the value of the previously used procedure in which the draft standard was sent to a sample of college members for their comments on the feasibility of the guidelines. Six controversial areas of hypercholesterolaemia were discussed at the conference and the conclusions reached were compared with the opinions of the random sample responding to the postal questionnaire. The representativeness of the populations consulted and the impact of the conference on the standard were also studied. Compared with the total population of Dutch general practitioners, women and those in the youngest age group (30–35 years) were over-represented in the random sample, while at the conference general practitioners from two partner and group practices were over-represented. There were no significant differences in background characteristics between the 36 conference participants and the 52 respondents to the written inquiry. Their opinions differed on the appropriateness of an upper age limit for screening for hypercholesterolaemia and on whether the 'average' general practitioner can prescribe a cholesterol-lowering diet. The results of the conference appear to have altered the final text of the standard on four issues: screening in women, having an upper age limit for screening, the time period for blood sampling and the prescription of a cholesterol-lowering diet by the general practitioner.

The conference achieved its first goal — to facilitate the publication of a well balanced standard. However, the unrepresentativeness of the consulted populations makes it doubtful whether the use of a postal questionnaire or holding a conference give a reliable insight into the feasibility of a proposed national standard.

Keywords: hypercholesterolaemia; screening; management of disease; guidelines; doctors' attitude.

Introduction

SINCE 1988 the college of general practitioners in the Netherlands (*Nederlands Huisartsen Genootschap*) has been developing a national programme of standard setting for care in general practice. Initially the standard setting advisory board of the college selects a topic. A working party of general prac-

tioners and researchers is then established, which develops a draft standard. The scientific value of the draft is assessed by a group of four to six consultants, who are recognized authorities on the topic of the standard. The draft is also sent to a random sample of 50 general practitioners, all members of the college, with a questionnaire asking for their comments on the feasibility of carrying out the guidelines. After revision the standard is evaluated by an independent scientific committee and only when this group has given its seal of approval is the standard authorized. Finally, the standard is published in the scientific journal of the college. Since 1989 a total of 22 standards have been published on subjects such as diabetes mellitus, acute otitis media, cervical smears and diagnostic procedures in eye problems. Every three to five years the guidelines will be revised and reassessed, depending on developments which have taken place. For example, in 1993 or 1994 a new standard for diabetes mellitus will be published.

It was thought possible that a random sample of college members might be less able to assess the problem of hypercholesterolaemia critically than a selected group of general practitioners who play an active role in the college and that therefore the written inquiry might be insufficient for the standard on cholesterol. All general practitioners who were involved in the development of previous standards or who play an active role in the college, were invited to attend a working conference in order to discuss not only the feasibility of carrying out the guidelines in daily practice for doctors, practice nurses and patients, but also the relevance of the guidelines from a medical as well as from a social point of view.

Organizing such a conference could help to ensure that a well balanced standard is achieved and could be used to assess the value of the normal written inquiry. If the outcome of the written inquiry deviates to a large extent from the findings of the working conference, this would imply that for controversial or perhaps for all standards a written inquiry might be insufficient.

In order to assess the impact of the working conference on the standard on hypercholesterolaemia, answers to the following questions were sought: To what extent do the consulted populations differ in background characteristics and how representative are they? To what extent do the opinions of the general practitioners who participate in the conference differ from the opinions of the random sample of general practitioners? What revisions are made to the standard as a result of the conference?

Method

Conference

The conference was held in the central Netherlands in June 1991. About 100 general practitioners have been involved in the development of standards in some way and were invited to the conference. Thirty six attended. They can be considered to represent the most active members of the college. Six controversial aspects of hypercholesterolaemia, chosen by the working party, were discussed — screening women for hypercholesterolaemia, having an upper age limit for screening, the number of blood samples necessary to diagnose hypercholesterolaemia, screening patients who smoke cigarettes, the prescription of a suitable cholesterol-lowering diet and the prescription of cholesterol-lowering medicines.

G Rutten, MD, PhD, and J van der Laan, MD, general practitioners, Department of the Standard Setting Programme, Nederlands Huisartsen Genootschap, Utrecht, The Netherlands.
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Before each of the six subjects was discussed, the participants of the conference were asked whether they agreed with a statement and were also asked supplementary questions. The answers were registered by a voting machine and immediately presented to the audience. The discussion was opened by two speakers involved in the field of hypercholesterolaemia, who were known to hold opposite opinions in order to stimulate discussion. The discussion was then thrown open to all the participants and at the end of this discussion the participants again voted on the same questions. The results of the two votes allowed the working party to estimate the extent to which the participants of the conference had been influenced by the discussion.

Questionnaire

In order to compare the opinions of those attending the conference with those of the random sample of general practitioners completing the written inquiry, the questions asked at the conference were asked in a supplement to the questionnaire sent to the random sample. The supplement asked general practitioners not only to consider the feasibility of the proposed guidelines, but also to evaluate the significance of the guidelines from a medical and social point of view. In June 1991 the questionnaire was sent to a random sample of 100 college members, twice the usual number; one reminder was sent after three weeks. A total of 52 members responded, although not all their questionnaires were complete.

Working party

The working party considered both the results of the conference and the questionnaire when revising the guidelines.

Six members of the working party were interviewed separately using a short questionnaire to determine whether the working party adjusted the guidelines as a result of the conference. The draft and the final standard were compared to see what changes, if any, had been made.

Analysis

The chi square test was used to estimate the difference in background characteristics between the two consulted populations. A *P* value of less than 0.05 was taken to be statistically significant. The chi square test was also used to determine the representativeness of the two populations by comparing each with the total population of Dutch general practitioners.

The results of the written inquiry were compared with those of the initial conference vote to determine whether the initial views of the conference participants were different from those of the random sample of college members. The results of the written inquiry were also compared with those of the vote at the end of the conference discussion in order to determine whether the outcome of the written inquiry deviates to a large extent from the findings of a working conference.

Results

Consulted populations

There proved to be no overlap between the conference participants and the respondents to the questionnaire, nor was there a significant difference in sex or age distribution between the two groups (Table 1). However, compared with the total population of Dutch general practitioners, the youngest age group (30–35 years) and women were over-represented among the questionnaire respondents. The oldest age group (over 60 years) was not represented among the consulted populations.

Doctors from single handed practices were under-represented at the conference (Table 2). The two consulted populations did not differ significantly with respect to practice size (Table 2).

Table 1. Sex and age distribution of the three populations.

	% of GPs		
	Questionnaire respondents (n = 50)	Conference participants (n = 36)	Total population (n = 6444 ^a)
Sex			
Male	78.0	91.7	88.0
Female	22.0	8.3	12.0*
Age (years)			
30–35	22.0	13.9	6.5
36–40	32.0	30.6	23.4
41–45	24.0	27.8	28.1
46–50	16.0	13.9	15.8
51–55	4.0	5.6	8.1
56–60	2.0	8.3	6.2
61 +	0.0	0.0	11.9***

n = total number in group. ^aPopulation of Dutch GPs at 1 January 1991. Questionnaire respondents versus total population: * *P* < 0.05 ($\chi^2 = 10.4$); *** *P* < 0.001 ($\chi^2 = 28.3$).

Table 2. Type of practice and practice size of the three populations.

	% of GPs		
	Questionnaire respondents (n = 50)	Conference participants (n = 36)	Total population (n = 6318 ^a)
Type of practice^b			
Single handed	46.9	25.0	54.4***
Two partners	30.6	41.7	30.6
Group practice/health centre	24.5	33.3	15.0
Practice size (no. of patients)			
<1000	2.0	8.3	— ^c
1000–1500	18.0	19.4	—
1501–2000	12.0	19.4	—
2001–2500	32.0	30.6	—
2501–3000	24.0	19.4	—
3001 +	12.0	2.8	—

n = total number in group. ^aPopulation of Dutch GPs at 1 January 1989. ^bn = 49 for questionnaire respondents. ^cNo data available for the total population of Dutch GPs. Conference participants versus total population: *** *P* < 0.001 ($\chi^2 = 15.1$).

Opinions of the two populations on the six statements

Screening women is appropriate. The first speaker, a general practitioner, put forward the case that hypercholesterolaemia in women should not be treated, emphasizing that few studies have demonstrated favourable results from treatment¹⁻³. His opponent, also a general practitioner, argued that for political reasons women could not be excluded from the diagnosis and treatment of hypercholesterolaemia.

Unfortunately, no initial vote took place for this statement. After the discussions only 17 participants of the conference agreed with the statement (Table 3). In addition, 15 of these 17 participants (88.2%) agreed with the statement that only women with at least one risk factor for cardiac mortality should be screened for hypercholesterolaemia.

Two members of the working party felt that the text of the standard had been revised to be more restrictive, but the other four thought that no revision had been made following the results of the conference. On comparing the two versions it was found that the final text laid more emphasis on the doubtful benefit

Table 3. Opinions of the two populations on six statements about hypercholesterolaemia.

Statement	% of GPs agreeing with statement (total no. of respondents)		
	Questionnaire respondents	Conference participants	
		First vote	Second vote
Screening women is appropriate	74.0 (50)	—	51.5 (33)
Having an upper age limit for screening is appropriate	91.5 (47)	—	55.9 (34)***
Diagnosing hypercholesterolaemia normally requires three blood samples	77.1 (48)	84.4 (32)	78.1 (32)
Screening patients who smoke cigarettes is appropriate	58.0 (50)	70.0 (30)	66.7 (33)
The 'average' GP has the ability to prescribe an adequate cholesterol-lowering diet	51.0 (51)	23.5 (34)*	43.8 (32)
Prescribing HMG coenzyme-A reductase inhibitors is justified	64.6 (48)	76.7 (30)	75.0 (20)

* $P < 0.05$ ($\chi^2 = 5.3$); *** $P < 0.001$ ($\chi^2 = 21.0$).

of treating hypercholesterolaemia in women than the initial draft. The final text made no distinction between men and women with regard to screening.

Having an upper age limit for screening is appropriate. A medical adviser pointed out that for patients above the age of 60 years the relative risk of coronary heart disease was only marginally increased by a high cholesterol level.⁴ An epidemiologist reminded participants that regression of atherosclerosis has been demonstrated as an effect of lowering cholesterol levels.⁵

Unfortunately, no initial vote took place but the opinions of the conference participants after the discussions differed significantly from those of the questionnaire respondents (Table 3). The results of the vote were not influenced by the choice of upper age limit (60 or 65 years). During the discussion it was clear that participants considered treating one patient aged 64 years but not screening patients aged 65 years and above to be unworkable and unfair.

Only one member of the working party believed that the text of the standard had been revised as a result of the conference. On examination it was found that 'younger than 65 years' had been changed to 'from 18–65 years' in the final version.

Diagnosing hypercholesterolaemia normally requires three blood samples. A general practitioner stated that incorrectly labelling a patient as having hypercholesterolaemia can have unfavourable consequences. Variations in the cholesterol level in one individual and the effect of regression to the mean indicate that more than one blood sample should be taken.^{6,7} The second speaker, a medical specialist, pointed out that even taking these factors into account, there are further variables which interfere with the cholesterol level: age, season and the concentration of very low density lipoproteins.^{8,9} It is, therefore, doubtful whether taking three blood samples is more appropriate than taking one.

The vast majority of both groups considered it necessary to take three blood samples to diagnose hypercholesterolaemia and

the debate had no effect (Table 3).

One member of the working party felt that the time period for diagnostic blood sampling had been changed as a result of the conference. Comparing the two versions showed that the number of blood samples that should be taken had not been altered, but that the time period over which the samples should be taken had been shortened from more than three weeks to less than three weeks in the final version.

Screening patients who smoke cigarettes is appropriate. The first speaker, a general practitioner, argued that the doctor and smoker should decide together whether screening was required. The second speaker, also a general practitioner, argued that the doctor should tell the patient that smoking is a risk factor of much greater importance than cholesterol level and that screening for hypercholesterolaemia is of little value while the patient continues to smoke.

The opinions of the questionnaire respondents did not differ significantly from those of the conference participants, before or after the discussion (Table 3).

All six members of the working party agreed that the conference did not result in revisions to the standard: the general practitioner should not consider smoking as an additional risk factor which would influence the decision whether or not to screen for hypercholesterolaemia, but should try to persuade smokers to stop smoking.

The 'average' general practitioner has the ability to prescribe an adequate cholesterol-lowering diet. The first speaker, a nutritionist, argued that a diet should be prescribed for each individual by a dietitian. She objected to the global guidelines of the draft. The second speaker, a general practitioner, questioned whether a dietitian's intervention would yield better results than supervision by a general practitioner.

At the first vote conference participants had a significantly more critical attitude towards the ability of the 'average' general practitioner to prescribe an adequate diet than the questionnaire respondents (Table 3). The discussions resulted in the biggest shift between the first and the second vote and the previous difference between the groups disappeared.

Two members of the working party felt that alterations to the final version of the standard had been made as a result of the conference. In the final standard guidelines for the prescription of a diet are specified. It is emphasized that the intake of saturated fat is of more importance than the total amount of fat consumed.

Prescribing HMG coenzyme-A reductase inhibitors is justified. A specialist stressed the advantages of cholesterol-lowering medicines¹⁰ while a general practitioner disputed this, on the grounds that the preventive effects of these drugs on coronary heart disease have not yet been clearly demonstrated and long term adverse effects have not been excluded.

More than 60% of both groups held the opinion that prescribing HMG coenzyme-A inhibitors is justified (Table 3) for the indications mentioned in the draft: a serum cholesterol concentration greater than 6.5 mmol l⁻¹ with at least two strong additional risk factors for coronary heart disease, or a cholesterol concentration greater than 8 mmol l⁻¹ and at least one additional risk factor. The final vote was not influenced by the discussion.

The members of the working party agreed that the text of the draft had not been changed as a result of the conference.

Discussion

The populations of the random sample of general practitioners and of conference participants were similar and on the basis of

their characteristics no major differences would be expected between the groups. Nevertheless, when considering whether the 'average' general practitioner can prescribe an adequate cholesterol-lowering diet the opinions of the questionnaire respondents and the conference participants before the discussion differed significantly. This difference disappeared after the discussion at the conference. The assumption that the most active members of the college would hold different opinions to a random sample of general practitioners thus proved to be only partially correct. The opinions of the conference participants after discussion differed significantly from those of the questionnaire respondents only with regard to having an age limit for screening.

It is not possible to determine the influence on the standard of the questionnaire and the conference separately. Although the members of the working party considered the impact of the conference to be small, the conference appears to have influenced the final text of the standard on four issues: screening in women, having an upper age limit for screening, the time period for blood sampling and the prescription of a cholesterol-lowering diet.¹¹

With the exception of having an upper age limit for screening, the conference agreed with the results of the written inquiry on the feasibility of the proposed guidelines. At first sight this finding supports the conventional use of the questionnaire. However, it is doubtful whether the questionnaire results give a reliable insight into the feasibility of the proposed guidelines, as the respondents were not representative of all Dutch general practitioners. Only about 65% of Dutch general practitioners are members of the college and college members have been shown to have a more positive attitude to national standards than non-members.¹² In addition, women doctors and those in the youngest age group, both of whom were over-represented among the questionnaire respondents, have been shown to have a more positive attitude towards both national standard setting and a central and coordinating role for the general practitioner in public health care.^{12,13} The same is true for doctors based in group practices or health centres,^{12,13} who were also over-represented.

The low response rate (36%) among the general practitioners invited to the conference may be a result of the time at which the conference was held, a midweek afternoon; the low response rate suggests that the participants were a highly selected group. The population who responded to the questionnaire had similar characteristics to those attending the conference, again suggesting a response bias to the written inquiry.

If it is assumed that the Dutch college wants to publish a standard which could be used by all general practitioners in the Netherlands, it remains a matter of discussion whether such a standard can be based on the consensus of a selected group of general practitioners. For controversial standards in particular, the college should consider consulting a sample of all Dutch general practitioners. If the college decides to do this, the problem of response bias will not be excluded and should be monitored closely. One can only speculate whether a more representative sample would lead to a more conservative or to a less balanced standard.

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Address for correspondence

Dr G Rutten, Nederlands Huisartsen Genootschap, Domus Medica, Lomanlaan 103, 3502 GE Utrecht, The Netherlands.

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