

The use of lipid-lowering drugs across ethnic groups in the secondary prevention of ischaemic heart disease: analysis of cross-sectional surveys in England

Paramjit S Gill, Terry P Quirke, Jonathan W Mant and Teresa F Allan

SUMMARY

A secondary analysis of the Health Surveys for England data was performed to explore the use of lipid-lowering drug therapy in people with ischaemic heart disease (IHD) across ethnic groups. There were significant associations with age group, type of IHD, and housing tenure and the taking of lipid-lowering drugs. There was no significant association with ethnic group.

Keywords: cardiovascular diseases; ethnic groups; lipid-lowering drugs.

Introduction

ISCHAEMIC heart disease (IHD) is the leading cause of morbidity and mortality in the United Kingdom (UK). It is particularly high among the UK South Asian community.¹ The National service framework for coronary heart disease² has been implemented to improve health outcomes in part by the identification of individuals with clinically established IHD, and by their subsequent management with lipid-lowering medication.¹ A recent ecological study showed that patients in practices with a large South Asian population are less likely to be taking lipid-lowering drugs, despite their expected greater need.³ The aim of this study was to examine the effect of ethnicity on the prevalence of lipid-lowering drug use in people with IHD, using data from a different dataset.

Method

Individual participant data were extracted from the Health Surveys for England 1998 and 1999, the latter including a boosted sample of minority ethnic groups.⁴ In these surveys, participants completed a questionnaire, and at a subsequent nurse visit they were asked what medication they were taking and were then asked to show the containers if possible. Participants were classified by presence or not of reported IHD. Owing to the small number of patients in some ethnic groups, the self-assigned ethnic group variables were aggregated as follows for subsequent analysis: white/Irish (as defined in the Health Survey for England results⁴) and black (Caribbean, Chinese, Indian, Pakistani and Bangladeshi).

The relationship between clinical and demographic variables and the use of lipid-lowering drugs was analysed by logistic regression in SPSS (Version 10.0). Forward conditional selective and backward conditional elimination methods were used to check for consistency. Variables were included if statistically significant at the 5% level. The variables tested comprised ethnicity and those investigated in a previous study (age group, sex, type of IHD, year of diagnosis, smoking status, body mass index, presence of diabetes, presence of hypertension, social class, educational qualifications, access to a car, housing tenure, marital status, number in household, and region of England).⁵

Results

There were 1123 patients with IHD, of whom 908 had data on prescription of lipid therapy. The odds ratio (OR) for each variable within the model is shown in Table 1. Whereas the univariate analysis suggested that minority ethnic groups were more likely to be using lipid-lowering drugs (for black patients, OR = 1.48, 95% confidence interval = 0.97 to 2.26),

P S Gill, DM, MRCP, clinical senior lecturer; T P Quirke, MRCP, honorary clinical lecturer; J W Mant, MPhM, senior lecturer; T F Allan, MSc, lecturer in medical statistics, Health Inequalities and Cardiovascular Research Groups, Department of Primary Care and General Practice, University of Birmingham, Birmingham.

Address for correspondence

Dr Paramjit S Gill, Clinical Senior Lecturer, Department of Primary Care and General Practice, University of Birmingham, The Medical School, Edgbaston, Birmingham B15 2TT.
E-mail: p.s.gill@bham.ac.uk

Submitted: 16 May 2003; Editor's response: 13 October 2003; final acceptance: 9 December 2003.

©British Journal of General Practice, 2004, 54, 442-443.

HOW THIS FITS IN

What do we know?

Lipid-lowering drugs are effective for secondary prevention of IHD and are not widely used within the general population, in particular among practices with a large proportion of South Asian patients, the elderly, and those with angina only.

What does this paper add?

Deprivation rather than ethnicity is an important predictor for the use of lipid-lowering drugs.



this association disappeared in the multivariate analysis when adjusted for housing tenure, smoking status, age, and type of IHD. Indeed, only age, type of IHD and housing tenure remained significant in the final multivariate model.

Discussion

This study confirms the finding of Reid *et al* that people with IHD are more likely to be taking lipid-lowering therapy if they are younger and have a history of myocardial infarction rather than angina.⁵ In addition, this study suggests that use of lipid-lowering therapy is associated with socioeconomic factors but not ethnicity. This is consistent with other studies that have shown significant associations with social deprivation and use of statins,⁶ and inferior quality of medical care for non-white patients in deprived, poorly resourced primary care.⁷

This study used individual-based data obtained from national representative surveys. Less than 20% of participants were from minority ethnic groups, and it was necessary to combine these to form a heterogeneous category for analysis. This may have masked differences in the use of lipid-lowering therapies between different minority ethnic groups. There may also be bias as a result of non-participation. The response rate within the survey was lower in minority ethnic groups⁴ and this might also have masked differences in the use of lipid-lowering therapy between ethnic groups, if patients with better access to health services were over-represented.

With the exception of age and socioeconomic factors, the data does not include factors relating to individual behaviour that may have an effect on medication use. The data does not allow a consideration of the impact of the characteristics of medical practitioners or the practices within which they work, and how these affect the patient and determine subsequent outcomes.⁸

Our findings reaffirm that age and deprivation are important predictors of which patients with IHD receive lipid-lowering therapy. In contrast, we found no evidence that ethnicity influences the use of these drugs. The substantially lower use of lipid-lowering drugs in individuals aged over 65 years, in whom absolute benefits of therapy are higher, suggests that inappropriate 'ageism' may be influencing prescribing decisions. The lower use in people in rented housing offers yet another example of the inverse care law.⁹

References

1. Bhopal R. Epidemic of cardiovascular disease in South Asians. *BMJ* 2002; **324**: 625-626.
2. Department of Health. *National service framework for coronary heart disease*. London: HMSO, 2000. <http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/CoronaryHeartDisease/fs/en> (accessed 21 April 2004).
3. Patel MG, Wright DJ, Gill PS, *et al*. Prescribing of lipid lowering drugs to South Asian patients: ecological study. *BMJ* 2002; **325**: 25-26.
4. Department of Health. Health Survey Results. <http://www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/HealthSurveyResults/fs/en> (accessed 21 April 2004).
5. Reid FDA, Cook DG, Whincup PH. Use of statins in the secondary prevention of coronary heart disease: is treatment equitable? *Heart* 2002; **88**: 15-19.
6. Packham C, Robinson J, Morris J, *et al*. Statin prescribing in Nottingham general practices: a cross-sectional study. *J Public Health Medicine* 1999; **21**: 60-64.
7. Stewart A, Rao JN. Asian patients may receive inferior care. *BMJ* 2002; **325**: 659.
8. Greenhalgh T, Gill P. Pressure to prescribe. *BMJ* 1997; **315**: 1482-1483.
9. Hart JT. The inverse care law. *Lancet* 1971; **i**: 405-412.

Acknowledgements

We thank the Data Archive and the depositors of the information for permission to use the data. Material from the Health Survey for England is Crown Copyright and was made available by the Office for National Statistics, the Joint Health Surveys Unit of Social and Community Planning Research, and the Department of Epidemiology and Public Health at University College London. The study was partly funded by the BMA Brackenbury Award and the views expressed are those of the authors and not of the funding body.

Table 1. Odds ratios for treatment of ischaemic heart disease with lipid-lowering drugs.

Variable ^a	n ^b	Univariate odds ratio (95% CI)	Multivariate odds ratio ^c (95% CI)	P-value
Age (years)				
≥75	269	1.00	1.00	
65-74	308	5.36 (2.86 to 9.96)	5.13 (2.74 to 9.59)	0.002
<65	331	9.39 (5.14 to 17.15)	9.51 (5.14 to 17.61)	<0.001
Type of ischaemic heart disease				
Myocardial infarction	452	1.80 (1.29 to 2.50)	1.74 (1.23 to 2.49)	0.002
Angina only	456	1.00	1.00	
Housing tenure				
Owned	606	1.79 (1.24 to 2.60)	1.63 (1.09 to 2.46)	0.02
Rented	302	1.00	1.00	
Current smoker				
Yes	163	1.00	1.00	
No	745	1.23 (0.80 to 1.91)	1.62 (1.00 to 2.62)	0.05
Ethnicity				
Black ^d	133	1.48 (0.97 to 2.26)	1.01 (0.65 to 1.59)	0.96
White/Irish ^e	775	1.00	1.00	

^aSex, year of diagnosis, body mass index, presence of diabetes, presence of hypertension, social class, educational qualifications, access to a car, marital status, number in household and region of England showed non-significant associations with lipid-lowering drugs, and are therefore not shown in this table. ^b(total = 908). ^cR² = 0.15. ^dCaribbean, Chinese, Indian, Pakistani and Bangladeshi. ^eAs defined in the Health Survey for England results.⁴