

Factors affecting over-the-counter use of aspirin in the secondary prophylaxis of cardiovascular disease

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SUMMARY

Little is known about the contribution of over-the-counter (OTC) aspirin to cardiovascular prophylaxis. To investigate this, a two-phase cross-sectional study was carried out in nine general practices in North Staffordshire. In the first phase, all patients with cardiovascular disease (CVD) were identified from computer searches using morbidity registers and drug searches. The search also identified the subgroup receiving prescribed prophylactic aspirin. In the second phase, a questionnaire was posted to all patients with CVD who were not on prescribed aspirin to establish their current use of OTC aspirin. Overall, 69% of the CVD group used aspirin, with 26% of aspirin being OTC. OTC aspirin use was more common in those aged under 65 years, men, and the more affluent. Also, there were significant differences in OTC aspirin use between the various practices. This study shows that a considerable amount of aspirin is used OTC in those with CVD. Its use is influenced by several factors that could be addressed when considering attempts to improve the overall uptake of aspirin.

Keywords: aspirin; OTC drugs; cardiovascular disease.

Introduction

ASPIRIN has become established as an important drug in the secondary prevention of mortality and morbidity in people with symptomatic vascular disease.¹ However, there is evidence that a significant proportion of all those who might benefit from prophylactic aspirin in the secondary prevention of cardiovascular disease (CVD) are not receiving it on prescription.²⁻⁴ Over-the-counter (OTC) use may explain some of this shortfall,⁵ and encouragement of OTC use may be a suitable means with which to improve the overall frequency of aspirin use. Little is known about what influences prescription or OTC use for secondary CVD prophylaxis, and this study is aimed at investigating this.

Method

Nine practices participated from the North Staffordshire General Practice Research Network, with a total population of 72 992. The network has well-validated systems of computerised morbidity recording; each practice uses the Egton Medical Information System,⁶ and the network carries out six-monthly audits of data recording quality in the practices. This computerised recording allows identification of disease groups through both morbidity registers and specific drug searches. Computer searches with Read codes for myocardial infarction, ischaemic heart disease, atrial fibrillation or flutter, peripheral vascular disease, and cerebrovascular disease were used to identify the group of patients with CVD. In addition, patients who were receiving, or had received in the past, repeat prescriptions for nicorandil and nitrates, were included in the search to identify the target population. Only those who received repeat prescriptions were selected to avoid including patients given therapeutic trials of nitrates. Patients taking warfarin were excluded. A questionnaire was developed and validated in 60 patients by test-retest repeatability and checking whether actual medication use from a tablet count was consistent with self-reported use. The instrument enquired about aspirin use and, after validation, was posted to all those patients with CVD who were not on repeat prescriptions for aspirin. After two weeks, non-responders were sent a further questionnaire and reminder. Deprivation scores were given to each patient using census Townsend data appropriate to their enumeration district, as identified by postcodes.⁷

For statistical analysis, both prescribed and OTC aspirin use were investigated together with their associations with general practice, age, sex, and Townsend score. Age was categorised according to tertile values and Townsend categories were derived using quartile scores. Statistical analyses were carried out using multiple logistic regression, adjusting

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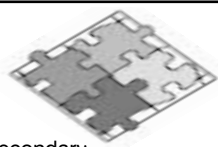
HOW THIS FITS IN

What do we know?

More than six out of ten patients with coronary heart disease use aspirin in secondary prophylaxis, and about one in four obtain it OTC.

What does this paper add?

There is variation in practice prescribing of aspirin. Among patients with CVD who use aspirin, those acquiring it OTC are more likely to be male, under 65, and more affluent. One way to improve aspirin uptake might be to encourage its use OTC.



for age category, sex, Townsend category, and general practice. Interpretation of the *P*-values relate to a two-tailed significance level of $\alpha = 0.05$. Data analysis was carried out using SPSS version 10.0.

Results

A total of 5983 patients were identified as having CVD: 8.2% of the overall population of the practices. The 3031 CVD patients not taking prophylactic aspirin on prescription were sent the questionnaire. There were 2781 replies and, combined with the computer data, this gave accurate data on 5733 (96%) of the target group.

Aspirin was used by a total of 3968 patients (69.2%); 2952 (51.5%) of these obtained it on prescription and 1016

(17.7%) OTC. The associations with age, sex, Townsend score, and general practice are presented in Table 1. Overall, older patients were more likely to be taking aspirin. However, younger patients were more likely than older patients to obtain it OTC. A significantly higher proportion of men compared with women took aspirin overall, and men on aspirin were more likely to obtain it OTC than women. Total aspirin use was not obviously linked to the Townsend deprivation score. However, patients in more affluent areas were more likely to obtain their aspirin OTC than those in more deprived areas, although this association was not statistically significant after adjustment for age, sex, and general practice. Finally, there were significant practice variations in total aspirin use, with a twofold variation across the nine practices. This was accompanied by variations between practices in the proportion of aspirin that was prescribed rather than OTC.

Discussion

Our estimate of overall aspirin use in patients with CVD (69%) is similar to two previous studies;^{5,8} OTC use (26%) was similar to the London estimate of Hopper and Pierce,⁵ but lower than that of the Grampian study by Campbell *et al.*⁸

The proportion of patients with CVD who have contraindications to aspirin is about 9%.^{9,10} Taking this into account, there still appears to be room for improvement in aspirin use. Our data suggests that OTC use forms a significant part

Table 1. Association of total aspirin use, OTC, and prescribed aspirin with age, sex, Townsend score, and general practice, in 5733 patients with CVD.

	Total aspirin use		Aspirin use: OTC versus prescription		
	<i>n</i> (%) taking aspirin	Odds ratio (95% CI) aspirin:no aspirin	<i>n</i> (%) taking aspirin OTC	<i>n</i> (%) taking aspirin on prescription	Odds ratio (95% CI) OTC:prescription
Age^a					
≤64 years ^b	1125 (65.9)	1.00	416 (24.4)	709 (41.5)	1.00
65–74 years	1357 (70.6)	1.28 (1.11–1.48)	325 (16.9)	1032 (53.7)	0.54 (0.45–0.64)
≥75 years	1486 (70.7)	1.35 (1.17–1.55)	275 (13.1)	1211 (57.6)	0.40 (0.33–0.48)
		<i>P</i> < 0.001	<i>P</i> < 0.001	<i>P</i> < 0.001	<i>P</i> < 0.001
Sex					
Female ^b	1848 (65.3)	1.00	410 (14.5)	1438 (50.8)	1.00
Male	2120 (73.1)	1.48 (1.32–1.67)	606 (20.9)	1514 (52.2)	1.21 (1.04–1.40)
		<i>P</i> < 0.001	<i>P</i> < 0.001	<i>P</i> = 0.011	<i>P</i> = 0.015
Townsend score^a					
Most deprived ^b	960 (68.1)	1.00	234 (16.6)	726 (51.5)	1.00
Moderately deprived	996 (69.3)	1.05 (0.89–1.24)	235 (16.4)	761 (53.0)	1.02 (0.82–1.27)
Moderately affluent	1021 (70.9)	1.10 (0.93–1.31)	265 (18.4)	756 (52.5)	1.14 (0.91–1.42)
Most affluent	975 (68.6)	1.06 (0.90–1.26)	280 (19.7)	695 (48.9)	1.20 (0.97–1.49)
		<i>P</i> = 0.445	<i>P</i> = 0.053	<i>P</i> = 0.424	<i>P</i> = 0.061
Practice					
A ^b	560 (57.8)	1.00	177 (18.3)	383 (39.5)	1.00
B	101 (66.9)	1.44 (0.99–2.09)	27 (17.9)	74 (49.0)	0.74 (0.46–1.22)
C	561 (68.9)	1.63 (1.34–2.00)	110 (13.5)	451 (55.4)	0.57 (0.43–0.75)
D	535 (68.9)	1.64 (1.34–2.00)	159 (20.5)	376 (48.4)	0.92 (0.70–1.20)
E	754 (71.8)	1.89 (1.57–2.28)	197 (18.8)	557 (53.0)	0.75 (0.59–0.96)
F	431 (72.9)	1.92 (1.54–2.41)	112 (19.0)	319 (54.0)	0.81 (0.61–1.08)
G	439 (73.2)	2.07 (1.65–2.60)	94 (15.7)	345 (57.5)	0.58 (0.43–0.79)
H	486 (75.1)	2.13 (1.71–2.67)	119 (18.4)	367 (56.7)	0.73 (0.55–0.97)
I	101 (75.4)	2.32 (1.53–3.51)	21 (15.7)	80 (59.7)	0.49 (0.29–0.83)
		<i>P</i> < 0.001	<i>P</i> = 0.066	<i>P</i> < 0.001	<i>P</i> < 0.001

^aAnalysis of trend. ^bReference category. *P*-values are adjusted for age category, sex, Townsend category, and practice.

of overall aspirin use, particularly in men, those aged under 65 years, and the more affluent. Increasing the use of prophylactic aspirin might be achieved through encouraging OTC use more widely, using sources such as community pharmacists, the media, or the work place. The extent of practice variation in overall use, mainly as a result of varying prescription levels, suggests that practices should examine their individual approach to promoting secondary prophylaxis in CVD.

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