Costs of aspirin should include treatment costs for dyspepsia

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Abstract

This short report describes a questionnaire study undertaken in two London teaching hospitals, addressing the true pharmacokinetic implications of aspirin use. It suggests that the real costs of aspirin treatment should include the cost of the therapies used for treatment of associated dyspepsia.

Key words: aspirin, pharmacoeconomics, cardiovascular disease.

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Introduction

Pharmacoeconomics of treatments are considered an important complement to clinical results of trials. Aspirin, an established treatment in primary and secondary cardiovascular disease (CVD) prevention, is considered cost effective compared to other medications in unit drug costs.[1,2] Treatment side effects are often identified separately and are only sometimes included as indirect drug costs. Aspirin-induced gastrointestinal haemorrhage is well documented, but there are limited data on the prevalence of associated dyspepsia and the additional drugs to treat this symptom.[3] With escalating community prescribing costs of dyspeptic therapies, the concept of aspirin as an inexpensive cardiovascular medication may need reviewing.

To investigate this we evaluated the prevalence of dyspepsia, factors associated with and the specific drugs used to treat this symptom, in aspirin-treated CVD patients.

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Table 1. Prevalence and factors known to exacerbate dyspepsia and specific treatments in patients treated with and without aspirin

	Aspirin treated (n=148)	No aspirin (n=88)	p value
Prevalence of 'dyspepsia' (indigestion, heartburn, abdominal pain, acidity or nausea)			
- all aspirin doses	40%	42%	p=0.3
- aspirin 75 mg	43%		p=0.6
- aspirin 150–300 mg	38%		
Factors known to exacerbate dyspepsia			
- current cigarette smoking	9%	9%	p=0.7
- excess alcohol consumption (> 21units alcohol/week)	3%	11%	p=0.02
- non-steroidal anti-inflammatory drugs (but excluding aspirin)	7%	14%	p=0.12
Dyspeptic treatment (either proton pump inhibitor or H_2 antagonist)			
- all aspirin doses	26%	13%	p=0.03
- aspirin 75 mg	21%		
- aspirin 150–300 mg	31%		

Participants, methods and results

These are summarised in table 1. The study method was a self-reported questionnaire in 238 consecutive, unselected (regardless of aspirin therapy status) cardiovascular patients attending follow-up in CVD clinics of two London hospitals. Demographic details included age, gender, aspirin dose and duration of therapy, history of diabetes or clinical CVD, smoking status, alcohol consumption, side effects attributed to aspirin therapy and specific drugs used to treat dyspeptic symptoms. 'Dyspepsia' was defined as either 'indigestion', 'heartburn', 'abdominal pains', 'acidity', 'nausea' or any combination of these.

From the 236 evaluable responses, 148 were receiving aspirin (mean [SD] age 64 [10.7] years) whilst 88 were not receiving aspirin (mean [SD] age 55 [13.8] years [p<0.001]). Aspirin had been prescribed for known secondary CVD prevention (either angina pectoris, myocardial infarction, coronary angioplasty/surgery/stent, transient ischaemic attack, stroke or atrial fibrillation) in 64% and for primary CHD prevention (presence of diabetes, hypertension, hyperlipidaemia or current smoking) in 26% of patients. Some 10% of patients did not know why they were taking aspirin. In the non-aspirin group, 11% had a history of

CVD with a further 55% having CVD risk factors, but also a six-fold increase in reported allergy to aspirin/history of peptic ulceration (13% *vs.* 2% [p<0.001]).

The prevalence of dyspepsia was similar in both the aspirin and non-aspirin groups: 40% *vs.* 42% (p=0.3). The frequency of current usage of either H_2-antagonist (H2A) or proton pump inhibitor (PPI) drugs was greater in the aspirin group compared to the non-aspirin group (26% *vs.* 13%, respectively [p=0.03]).

Comment

The prevalence of dyspepsia was similar in the groups with or without aspirin. However, there was a two-fold increase in dyspeptic drugs in the aspirin group. This may have reduced aspirin-associated symptoms, resulting in similar dyspepsia rates between the groups. Although a history of aspirin allergy or peptic ulceration were clear reasons to avoid aspirin, there was a small increase in other factors known to exacerbate dyspepsia in the non-aspirin group. It was of interest that dyspeptic symptoms increased with higher aspirin doses, paralleled by an increased frequency of drugs to treat this symptom. As seen previously in CVD risk patients, this study demonstrates a similar high prevalence of dyspeptic symptoms.[4]

This study shows that an additional 13 prescriptions for dyspeptic treatments are required/100 aspirin treated patients/month. Therefore, aspirin (£1/month), with the addition of either an H2A (£2–26/month) or PPI (once daily £29/month) can increase the overall cost of aspirin therapy as much as five-fold. The community health economic cost implications of aspirin therapy should therefore include the co-prescription of H2A or PPI. We should also be striving to promote generic drug prescribing to minimize this cost in the absence of definitive evidence to suggest that one therapy is better than another for the treatment of dyspepsia.

This study has focused on additional drug costs for known side effects and has shown that nearly one quarter of patients use additional therapies for aspirin side effects. Further studies should assess the cost of investigations (e.g. endoscopy), hospitalisations and time off work attributed to these symptoms. Due to the high prevalence of CVD, health economic considerations of specific treatments should also include the treatments of commonly associated side effects.

Key messages

- Cardiovascular patients treated with aspirin have an increased incidence of dyspeptic symptoms, which are often not considered in its costs
- Treating this dyspepsia requires the use of additional therapies by many patients increasing the community health economic cost of aspirin therapy

Conflict of interest

None declared.

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