Patients' beliefs about inhalers: Are they compatible with the optimal use of inhalers for the prevention and relief of asthma?

C H Hand, S Morley and M Adams

ABSTRACT

Objective: To measure patients' beliefs about inhaler treatment for asthma.

Design: A 66-item questionnaire with 33 statements rated first in relation to corticosteroid inhalers and then to β_2 -agonists.

Subjects: Seven hundred asthma patients prescribed both beclomethasone and salbutamol inhalers from seven general practices in Norfolk.

Results: Although 93% of the 335 respondents believed in prevention, 24% wanted to stop their corticosteroid inhaler. Over 95% of patients perceived β_2 -agonists as effective. Half were concerned about side-effects from both inhalers and two-thirds did not like being dependent on inhalers. More than a third thought that avoiding triggers or relaxing were more effective than taking inhalers. Differences in responses between the inhalers were in the theoretically expected direction.

Conclusion: Whilst many patients may well hold beliefs about inhalers that are compatible with the optimal use of inhalers for the treatment of asthma, a significant minority do not.

INTRODUCTION

Discovering patients' views about treatment is one of the most important steps in the process of negotiation between patient and doctor.¹ It is also known that asking questions about treatment improves adherence to treatment.² General beliefs, however, are poor predictors of specific behaviours.³ In order to gain an understanding of a behaviour as specific as using an inhaler, it is necessary to examine beliefs about inhalers.

Patients' beliefs about asthma treatment have been studied, but their relationship with inhaler use is still not fully understood.⁴⁻⁹ For example, are beliefs related to inhalers in general or do they vary between different types of inhaler?^{5,6} This is important as the use of cognitive interventions for addressing patients' beliefs, as opposed to in asthma education for improving their knowledge and skills, is still in its infancy.

This study is the second phase of a project to develop an instrument to measure patient's beliefs about inhaler treatment for asthma.¹⁰ The findings of a questionnaire survey that was undertaken in a larger sample of patients are reported.

METHODS

The questionnaire

The development of the questionnaire from interviews with asthma patients from one general practice in Suffolk has been described.¹⁰ It consists of 33 belief statements rated twice; first in relation to corticosteroid inhalers (preventers) and then to short-acting β_2 -agonists inhalers (relievers), making 66 items in total. A five-point Likert scale (from strongly disagree to strongly agree) is used.

The patients and their practices

Seven general practices in Norfolk were selected purposively to represent different types of practice.

All patients aged from 16 to 65 prescribed both corticosteroid and short-acting β_2 -agonist inhalers, were eligible for inclusion. In five practices, 100 consecutive patients attending asthma clinics or collecting repeat prescriptions for their inhalers were given questionnaires opportunistically. In two practices, 100 questionnaires were sent by post to a random selection of asthma patients who satisfied the same inclusion criteria.

Statistical analysis

The data were entered into the Statistical Package for Social Sciences. Medians were compared using the Mann-Whitney U test. Because the response rates between practices were very variable, patient responses to the items were compared between practices with a higher, as opposed to a lower, response rate. Thirty-three statistical comparisons were made. At a 5% level of significance, one would expect one or two positive results to have occurred by chance. Although it is possible to make adjustments for multiple statistical tests, if those findings with lower statistical significance are viewed with caution, it is still of value to look at the possible differences.

RESULTS

Three hundred and thirty-five questionnaires were returned. Respondents answered over 97% of the items. The response rates from the individual practices were between 19% and 75%, giving an overall response rate of 48%. The responses from practices with high and low response rates were similar as were the responses from the opportunistic and postal surveys. Two-thirds (63.0%) of the patients were female and the median age was 44 (interquartile range 28 to 56). The responses to the items about the inhalers are shown in Table 1.

Ninety-three percent of respondents approved of prevention and 89% agreed that they should take their corticosteroid inhaler regularly. Ninety-six percent find reliever inhalers effective, 95% felt reassured by them and 89% carried their reliever inhalers with them. Nevertheless, two-thirds of respondents reported that they relied on their reliever inhalers and more than half the patients reported taking their inhalers for relief and prevention at the same time. Over 80% of respondents were satisfied that their doctor was doing all that he or she could with respect to their inhaler treatment and over two-thirds felt that decisions about inhaler medication were shared between the doctor and themselves. However, over two-thirds of patients would like more information about how their inhaler works and almost one-fifth felt that they hadn't enough time to talk to their doctors about their inhalers.

There were no important differences in responses to questions about reliever and preventer medications for 13 out of the 33 items. These items considered general aspects of management (satisfaction with the doctor) and use of the inhalers, embarrassment about using inhalers, dependency or repeat prescribing. Patients

Christopher Hand

General Practitioner and
Honorary Senior Lecturer

Sylvia Morley

Senior Research Associate

Malcolm Adams

Co-director and Clinical
Psychologist

School of Health Policy
and Practice, University
of East Anglia, Norwich
NR4 7TJ, UK

Correspondence to:

Dr CH Hand
c.hand@uea.ac.uk

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Table 1: Responses to the items about corticosteroid (preventer) inhalers and β_2 -agonist (reliever) inhalers

Items	Number of responses <i>n</i> = 335	Preventer			Number of responses <i>n</i> = 335	Reliever			Inhaler
		Strongly agree or agree %	Neither agree nor disagree %	Strongly disagree or disagree %		Strongly agree or agree %	Neither agree nor disagree %	Strongly disagree or disagree %	
Preventing an asthma attack with my inhaler is better than waiting for one to happen	334	93.0	3.3	3.3	332	81.3	5.4	13.3	*** <i>p</i> > <i>r</i>
I think that I should take my inhaler regularly	335	88.7	4.5	6.9	334	48.8	9.6	41.6	*** <i>p</i> > <i>r</i>
How I manage my inhaler is a shared decision between my doctor and me	334	74.0	8.7	17.3	333	66.1	9.9	24.0	*** <i>p</i> > <i>r</i>
I should like more information about the way the inhaler works on my lungs and the effects that it has on me	332	70.7	13.6	15.7	330	65.1	17.6	17.3	*** <i>p</i> > <i>r</i>
I am worried about possible longterm side-effects from my inhaler	335	50.4	25.4	24.2	332	45.2	28.6	26.2	** <i>p</i> > <i>r</i>
I should prefer to take a tablet than use an inhaler	332	31.7	23.7	44.6	332	25.9	21.4	52.7	*** <i>p</i> > <i>r</i>
I should like to stop my inhaler and see how I am without it	333	24.3	26.4	49.3	330	14.2	26.7	59.1	*** <i>p</i> > <i>r</i>
The inhaler is effective at helping me when I have asthma	333	63.4	13.8	22.8	334	95.8	2.7	1.5	*** <i>r</i> > <i>p</i>
I find having my inhaler by me is reassuring	334	70.3	9.3	20.4	333	94.5	2.2	3.3	*** <i>r</i> > <i>p</i>
I always carry my inhaler with me	332	45.1	2.7	52.2	334	89.2	2.1	8.7	*** <i>r</i> > <i>p</i>
The decision when to use my inhaler is mine alone	333	64.8	5.2	30.0	332	86.4	4.3	9.3	*** <i>r</i> > <i>p</i>
I prefer to collect my inhalers on a regular basis	331	69.2	13.0	17.8	332	72.3	12.3	15.4	* <i>r</i> > <i>p</i>
I like to have several inhalers and put them in different places	333	45.6	6.3	48.0	332	71.4	4.2	24.4	*** <i>r</i> > <i>p</i>
The inhaler has more of a local effect on my lungs than a general effect on my body	333	58.3	33.3	8.4	331	69.2	20.8	10.0	* <i>r</i> > <i>p</i>
I really rely on my inhaler	332	49.7	17.5	32.8	333	66.1	11.7	22.2	*** <i>r</i> > <i>p</i>
I understand how my inhaler works on my asthma	330	58.8	31.2	10.0	332	64.4	28.1	7.5	* <i>r</i> > <i>p</i>
Being close to the chemist makes all the difference when it comes to getting more of my inhalers	328	53.3	10.7	36.0	327	51.9	19.4	28.7	* <i>r</i> > <i>p</i>
Avoiding the things that trigger my asthma is sometimes more effective in controlling my asthma than using an inhaler	333	41.2	33.6	25.2	332	50.9	26.8	22.3	** <i>r</i> > <i>p</i>
I prefer my preventer inhaler to my reliever inhaler	335	22.1	28.6	49.3	331	42.3	27.5	30.2	*** <i>r</i> > <i>p</i>
Relaxing and keeping calm is sometimes more effective in controlling my asthma than using my inhaler	332	35.8	24.7	39.5	332	39.7	24.2	36.1	* <i>r</i> > <i>p</i>
I have no problems using my inhaler	333	89.8	2.4	7.8	333	95.2	1.5	3.3	
I am satisfied with the system for getting repeat prescriptions of my inhalers	332	85.8	4.8	9.4	333	85.3	6.0	8.7	
I usually plan ahead to get my inhalers.	333	85.3	4.2	10.5	332	87.1	3.9	9.0	
I am satisfied that my doctor is doing all that he / she can with respect to my inhaler treatment	333	81.4	13.8	4.8	333	84.4	11.7	3.9	
I think my inhaler keeps me feeling well	333	66.7	24.9	8.4	332	68.4	22.3	9.3	
I don't like being dependent on my inhaler	335	62.1	13.1	24.8	330	63.7	4.8	21.5	
I usually take my preventer and reliever inhalers together, one after the other	335	54.9	2.1	43.0	331	52.9	3.6	43.5	
It should be possible to get my inhalers delivered to my house if I can't get them myself	332	52.4	23.5	24.1	329	52.8	22.5	24.7	
I find it difficult to know when my inhaler is running out	335	42.4	3.0	54.6	333	42.6	3.9	53.5	
It would be helpful to have something to make taking my inhaler easier	333	28.8	19.8	51.4	331	24.8	18.4	56.8	
I feel embarrassed using an inhaler in public	334	26.1	4.8	69.1	333	26.1	4.5	69.4	
There is never enough time to talk to my doctor about how I feel about my inhaler	333	17.4	21	61.6	333	17.4	20.1	62.5	
Taking my inhaler is inconvenient	334	14.7	5.4	79.9	332	14.7	6.1	79.2	

p* < 0.05; *p* < 0.01; ****p* < 0.001; *p* = preventer; *r* = reliever

felt greater ownership of the use of reliever than preventer medications and reported that they were more likely to have reliever inhalers with them or to have multiple relievers inhalers to make sure one was available.

Nevertheless, patients tended to place more reliance on β_2 -agonists. Significantly more patients understood how their reliever inhaler works and conversely wanted more information about the way corticosteroid inhalers work on the lungs. Although patients were more likely to be concerned about the side-effects of corticosteroid inhalers than β_2 -agonists, nearly half the patients expressed concerns about β_2 -agonist inhalers. However, one in four patients wanted to stop their corticosteroid inhaler to see how they were without it; this was not a commonly held belief with β_2 -agonists.

DISCUSSION

Validity of the data

There appear to be significant differences in the way patients respond to the same questionnaire items in relation to corticosteroid and β_2 -agonist inhalers. This is to be expected given the different mechanisms of action of the inhalers.⁵ The findings are supported by Hibbert's detailed qualitative study of professional and user perspectives of inhaler therapy, and Kibble's smaller study.^{7,8} The differences are more apparent between the positive beliefs about inhalers than the negative beliefs. This observation agrees with Osman and colleagues who found that a general cluster of antim medication attitudes exists, independent of whether the medication is for prevention or relief.⁴ There are also few significant differences in areas that are common to both inhalers, such as satisfaction with the doctor's care.

The utility of the instrument

The overall response rate was disappointing and better in those practices where the questionnaire was sent by post rather than given out opportunistically. This finding was unexpected and needs to be explored if the questionnaire is to be used in the future. Given that the patients responding were probably using one or both of their inhalers, it is likely that those not taking inhalers may give less favourable responses to the questions.

Patients may be reluctant to complete a questionnaire if they are short of time and this could account for the better response rate of the postal survey. The same may be true if they cannot see any obvious personal benefit. The ultimate aim is to explore patients' views about inhalers in the consultation, and discussing a patient's responses to the questionnaire might well encourage them to complete it.

Patients may have found the questionnaire too long and to this end we performed a factor analysis on the data and developed a shorter version of the questionnaire. This is currently being tested.

Impact in practice

The beliefs held by those who answered the questionnaire are in general those that have been shown to correlate with higher use of preventive inhaler therapy.⁵ However, almost one in three respondents would prefer a tablet than use a preventer inhaler and these people might be considered for treatment with a leukotriene antagonist. Over half the patients agreed that they took both types of inhaler together and two-thirds agreed that they 'really relied' upon their reliever

inhaler. These two beliefs correlate with higher use of short-acting β_2 -agonists, and this may not be so desirable.⁵ Patients holding these beliefs might be better off using a long-acting β_2 -agonist.

Many patients want more information about their inhalers and this may relate to a common concern about longterm side-effects of inhalers, and a lack of understanding as to how they work. Although these issues were more common in relation to corticosteroid inhalers they were still relevant to β_2 -agonists. A survey carried out by the National Asthma Campaign found similar results.¹¹

A significant number of patients feel that avoiding triggers and relaxing are more effective than using inhalers and many do not like depending on inhalers. This raises the issue of patients wanting personal control over their asthma rather than relying upon drugs. Osman also found that patients generally dislike taking asthma medication.^{4,6}

Future research

Whilst many people hold beliefs about inhalers that are compatible with the optimal use of inhalers for the treatment of asthma, a significant minority do not. The next step is to see whether using the questionnaire to target therapeutic changes or cognitive interventions improves the health status of patients. ■

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