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Childhood asthma: A general practice survey of children not attending for follow-up

M Thoma

ABSTRACT

Aims To investigate the asthma-related morbidity and the reasons for discontinuation of asthma care in children who had been diagnosed as having asthma but who had discontinued asthma treatment and care in a UK general practice

Methods A postal questionnaire was sent to the households of all children aged 15 or less with a diagnosis of asthma who had neither received a prescription for asthma related medication nor consulted a doctor or a nurse with an asthma related problem in the previous 12 months

Results Two hundred children from a base population of 1306 had received a diagnosis of asthma (15.3%). Of these, 88 had received no prescribed medication or asthma follow-up in the last year (44.0% of labelled asthmatics, 6.7% of base population). Sixty six questionnaires were returned (response rate 75.0%). Twenty respondents (30.3%) did not agree with the previous diagnosis of asthma and a further 11 (16.7%) were unsure. Of those who agreed with the previous diagnosis of asthma, 41.3% felt that the condition had now resolved, and a further 37.0% were unsure. Over half felt that their child's symptoms were now too mild to warrant treatment. Very low levels of unease about previous medication (1.5%), lack of efficacy of prescribed medication (1.5%) or use of non-prescribed remedies (9.1%) were reported. Current asthma related morbidity was low; most respondents reported symptom frequency as 'rarely' or 'never' for cough (89.4%), wheeze (100%), chest tightness (97.0%) or shortness of breath (95.4%)

Conclusions A high proportion of children labelled as having asthma were not receiving current treatment or follow-up for it. Under a third of families rejected the previous diagnosis of asthma and 40% of those who accepted the previous diagnosis of asthma felt that it had now resolved. Over half felt that current symptoms were too mild to warrant treatment. The majority of children not attending for asthma follow-up were not currently in need of it

INTRODUCTION

The prevalence of asthma has shown a progressive increase in developed societies throughout the world over the last 20 years, particularly affecting children.¹ The current prevalence of treated asthma in the UK is over 9% in children aged 0-4 and is over 12% in children aged 5-15.⁴ Asthma is however a condition that varies in severity with time, and may go into remission in childhood.⁵ It has also been recognised that there are differing phenotypes of wheezing illness in children⁶ which may present with respiratory symptoms in young children and be diagnosed as asthma but which may follow a more benign natural history.

The majority of asthma care is provided in a Primary Care setting in the UK. There is evidence of ongoing underdiagnosis and undertreatment of asthma in children with asthma related symptoms.⁷ Contractual arrangements have encouraged GPs to maintain Asthma Registers and to set up practice based Asthma Clinics to provide structured asthma care and provide regular follow-up to asthmatic patients. Some patients fail to attend for such routine follow-up, and some patients discontinue treatment without consultation with their GP or nurse.⁸ Little is known of the respiratory morbidity in this group of patients, or of the reasons that they have discontinued treatment and follow-up. A recent survey of patients of all ages not attending the practice asthma clinic in a single UK General Practice found a low perception of severity of asthma in clinic non-attendees, many of whom were however consulting their own GP when they felt they needed asthma advice or treatment.¹

Possible explanations for non-attendance of children diagnosed as having asthma include resolution or paucity of symptoms,² denial of asthma,³ fear of adverse consequences from using medication,⁴ and the use of over the counter or 'complimentary' therapies. Reports of significant respiratory morbidity in under-treated UK Primary Care asthmatic patients are of concern.^{8,1}

Asthma remains a clinical diagnosis in the UK,⁶ and the demonstration of objective measures of variable airflow obstruction can be difficult in children, particularly those of the younger age groups. The diagnosis of asthma is not always clear cut in children and may have been over-applied, particularly to children with viral associated wheezing.⁷ Some parents and children may have difficulty in accepting a diagnosis of asthma, which may be stigmatising.^{9,18,1} Some patients and their families may deny or underestimate the severity of their asthma.⁹

This study investigates the respiratory morbidity and the reasons for non-attendance and discontinuation of treatment in children diagnosed as asthmatic.

METHOD

All children aged 15 and under who had been diagnosed as having asthma who had not been seen by a GP or a nurse for asthma related problems and who had not received any prescription for asthma medication in the last year were identified from the computerised medical records of Minchinhampton Surgery.

Minchinhampton Surgery covers a rural and semi-rural population of 7100 patients in Gloucestershire. The practice has an asthma clinic run by a trained asthma nurse with GP support, and aims to provide structured asthma care. The practice keeps electronic medication and prescribing records.

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This work has not been submitted elsewhere. An abstract based in this work was presented at the International Primary Care Respiratory Conference, June 2000 Cambridge UK, and is published in abstract (Thomas M) A survey of children who discontinue GP asthma care *Asth Gen Pract* 2000; **9** (Suppl) S14

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Figure 1. Postal questionnaire

Please tick the box or boxes below that most closely apply to your child

How often is your child troubled by	Never	Rarely	Once a week	Most days
Coughin				
Wheezin				
Chest tightnes				
Undue shortness of breath on exercis				

Statement: Please tick the box which most closely corresponds to your view

	Agree	Disagree	Not sur
1. I do not feel that my child ever really had asthma			
2. My child had asthma in the past but it has now gone			
3. My child's symptoms are too mild to need any treatment			
4. My child still has symptoms but we deal with them in our own way			
5. My child still has asthma but we don't like using the treatment			
6. The asthma treatment we had didn't help much so we no longer use it			
7. I feel that my child does need treatment and would like to see the Doctor about it			

Please write any further comments you have below

The questionnaire (Figure 1) was posted to the family home of these children, inquiring about asthma related morbidity and symptoms, confidence in the previous diagnosis of asthma, and the reasons for discontinuation of treatment and non-attendance. The parents were asked to complete the questionnaire with the help and involvement of the children, and to post it back to the study centre.

Statistical analysis comparing the total symptom scores between groups was performed using Kruskal-Wallis nonparametric analysis of variance.

Ethical approval for the study was gained from Gloucestershire Local Research Ethical Committee.

RESULTS

The Practice population of children aged 0-15 years at the time of the survey was 1306 (673 male, 633 female).

The number of patients in this age range in whom a diagnosis of asthma had been applied at any point in the computerised records was 200 (15.3% of the base population, 124 male, 76 female, average age 9 years).

The number of patients in the age range currently receiving asthma medication (inhaled or oral

bronchodilator, inhaled corticosteroid and other inhaled prophylactic medication for asthma) was 9 (7.1% of the base population)

Eighty-eight children were identified from the computerised practice records as meeting the entry criteria (44% of all children in whom a diagnostic label of asthma had been applied, 55 male, 33 female average age 11.1 years). Questionnaires were posted to the family homes of the 88 identified children. Replies were received from 66 (75.0% response, 43 male, 23 female, average age 11.0 years). The questionnaires were posted out in February 1999, and responses were received over the following 10 weeks; follow up on reminder contacts were not made unless requested by the responding families.

The demographic details of the non-responders including age, sex, socio-economic grouping and previous asthma treatment levels, were similar to those of the responders.

The practice records were examined for details of any respiratory related consultations in the year prior to the survey, including contacts with out of hours services hospital admissions and Accident and Emergency department attendances. No unscheduled respiratory related contacts were found for either the responder or the non-responder groups.

Morbidity (Figure 2)

The questionnaire addressed the current frequency of four symptoms compatible with asthma related morbidity (cough wheeze chest tightness and dyspnoea). The frequency of these symptoms, rated as 'never', 'rarely', 'once a week' or 'most days' is illustrated in Figure 2.

Current asthma related morbidity was low; most respondents reported symptom frequency as 'rarely' or 'never' for cough (89.4%), wheeze (100%), chest tightness (97.0%) or shortness of breath (95.4%)

Combined morbidity (Figure 3)

An estimate of the numbers of children with multiple symptoms was made using a numerical scoring system never = 0, rarely = 1, weekly = 2, most days = 3

The total symptom scores for each patient were calculated by adding the scores for the four symptoms together. The numbers of patients with each total symptom score are shown in Figure 3

Agreement with previous diagnosis of asthma

Thirty-five respondents (53.0%) agreed with the previous diagnosis of asthma, although 20 respondents (30.3%) did not agree that their child had ever suffered from asthma, and a further 11 (16.7%) were not sure whether or not the diagnosis was correct

The total symptom scores of those agreeing with the diagnosis of asthma (n=35, median 4, interquartile range 1-4, range 0-6) were significantly higher than those disagreeing (n=20, median 1, interquartile range 0-2, range 0-6) and those not sure (n=11, median 1

interquartile range 0-2, range 0-4). (Chi-square 15.60, df =2, p<0.001)

Reasons for non-attendance and discontinuation of asthma care

1. Remission of asthma

Of the 46 respondents who agreed that their child had previously had asthma (35) or were not sure (11), 19 (41.3%) felt that the asthma had no resolved, and a further 17 (37.0%) were unsure.

2. Mildness of symptoms

Of the 54 respondents to this question, 30 (55.6%) felt that their child's symptoms were too mild to warrant treatment, and a further five (9.3%) were not sure

3. Use of complimentary or non-prescribed treatment

Only six respondents (9.1%) agreed with the statement 'My child still has symptoms but we deal with them in our own way', and a further three (4.5%) were unsure

4. Dislike of treatment

Only one respondent (1.5%) agreed with the statement 'My child still has asthma but we don't like using the treatment', with a further one (1.5%) being unsure

5. Lack of efficacy of previous treatment

Only one respondent (1.5%) agreed that the previously prescribed asthma treatment was ineffective, with two (3.0%) being unsure

6. Request for medical review

Only two respondents (3.0%) agreed with the statement 'I feel that my child does need treatment and would like to see the Doctor about it', and a further two respondents (3.0%) were unsure

DISCUSSION

GPs in the UK are encouraged to provide structured asthma care and to maintain asthma registers. This survey confirms that significant numbers of children who have received a diagnostic label of asthma are not receiving follow-up care or treatment. It is not clear whether these children may be removed from asthma registers and from routine follow-up, or whether they are suffering from avoidable morbidity. This study examines the morbidity and the reasons for non-attendance in this group of children in a single UK general practice, which aims to provide structured asthma care and which runs a practice based asthma clinic

Low levels of morbidity in this group would indicate that pro-active measures by primary care professionals to contact and review treatment in this group were unnecessary, and that they could be removed from the active asthma register. It would be important however to identify unmet health needs and morbidity in sub-groups of this population before recommending that they are removed from asthma registers

Figure 2. Frequency of symptoms (%)

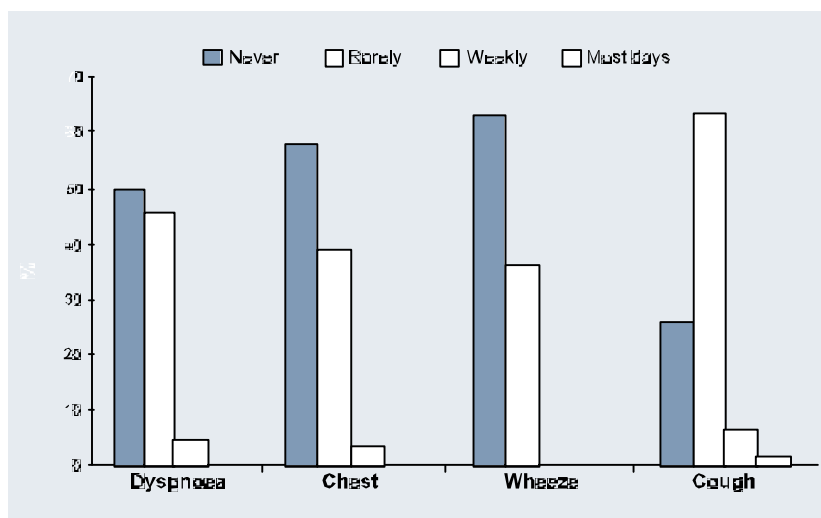
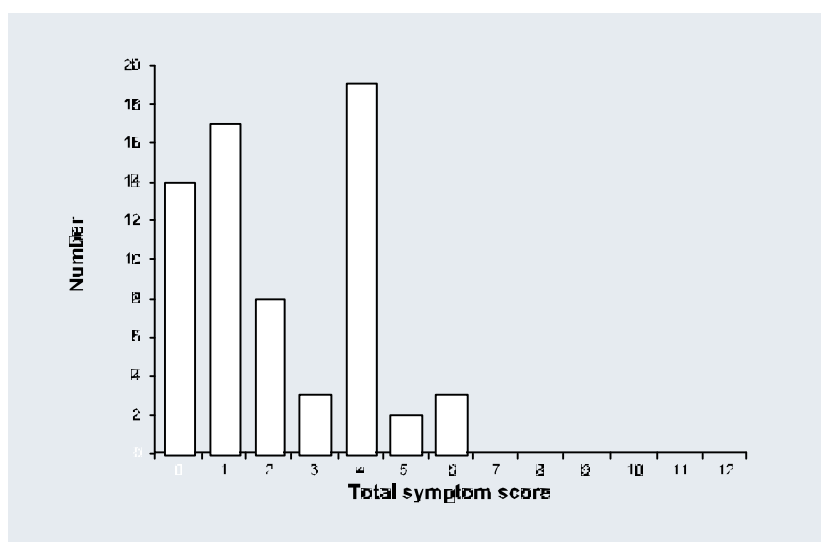
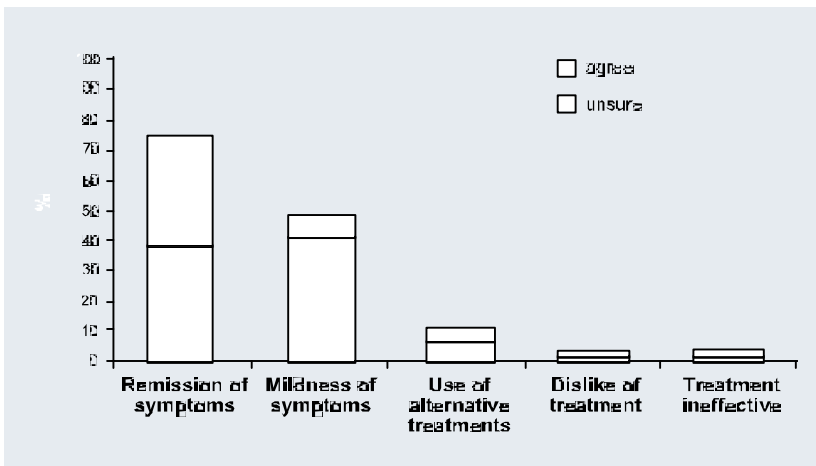


Figure 3. Numbers of patients with each total symptom score



The results of this survey suggest that there is generally a low level of asthma related morbidity in this group of children. In each of the four symptom for which information was obtained (cough, wheeze chest tightness and shortness of breath on exertion) 90% or more of respondents reported that symptom occurred 'never' or 'rarely'. Very low proportions of children were suffering from persistent symptoms. The total symptom scores however revealed a bimodal distribution, with 2/3 of respondents having low total symptom scores (three or less), but with 1/3 having symptom scores of four or above, indicating more significant morbidity. Thus, although a minority of children was identified who did appear to have more regular and significant symptoms, in the majority of cases the current morbidity from asthma on respiratory symptoms appeared to be low. The main reason for lack of attendance or medication usage in this survey appears to be a paucity of current symptoms of asthma. Although there does appear to be a sub-group who are tolerating more significant symptoms, only two respondents requested a medical review

Figure 4. Reasons for discontinuation of asthma care



Over half of the respondents indicated agreement with the previous diagnosis of asthma, although almost 1/3 did not agree and a further 1/6 was unsure. Those who accepted the previous diagnosis were currently more symptomatic than those who did not or those who were unsure. Of those who accepted the previous asthma diagnosis, just under half felt that the condition had now resolved and almost as many were unsure only 1/5 indicated that they felt that their child was still suffering from asthma. Over one half of all respondents felt that their child's respiratory symptoms were too mild to warrant treatment. Very low levels of dissatisfaction with orthodox treatment or use of over the counter or complimentary medication were revealed.

The question of the general applicability of these data needs to be addressed. The practice is recognised by the local Health Authority for chronic disease management of asthma, has a diploma trained asthma nurse and a partner with a specific interest in asthma but this is a common situation in UK General Practice. The demographics of the practice paediatric asthma population in terms of a diagnostic label of asthma and current treatment with asthma medication are similar to reported national figures.⁴ The questionnaire response rate of 75% is typical of Primary Care postal surveys, and similar demographic characteristics were observed between responders and non-responders. The overall demographics of the practice population show a slightly lower than average paediatric population and attend to higher socio-economic groups, but are not significantly atypical. The practice serves a rural semi-rural and small town based population in the South Cotswolds. This population has some degree of skew towards more affluent social groups but includes the full range of socio-economic groupings including pockets of rural deprivation. The average age of the study population group was greater than that of the population labeled as asthmatic, indicating a skew to the older end of this paediatric age group. This is unsurprising given the remitting nature of childhood asthma, and is likely to be similar in comparable populations. There are no reasons to believe that the results of this survey are influenced by atypical features of the practice, although larger and more

representative populations would need to be surveyed to confirm this. Although this survey has occurred in a single UK general practice population, it is possible that the results are generalisable to wider populations.

A label of active asthma on medical records may have implications for the patient for future employment, sporting and insurance purposes, and so may affect lifestyle and career aspirations. It may also encourage the primary health care team to make inappropriate and unnecessary efforts to provide regular review and follow-up appointments. A possible solution would be to amend the medical records of patients whose asthma has become asymptomatic to show 'inactive asthma' or 'previous history of asthma'. The results of this survey indicate that in the case of children who have previously been labelled as having asthma but who discontinue asthma follow-up and treatment, it may indeed be possible to remove these patients from current asthma registers and amend the records to show 'inactive asthma' or 'past history of asthma'. The finding however of a significant minority of children who do appear to have more significant symptoms (although still generally mild), does indicate the need for caution. It would seem prudent to contact the child and family to ascertain current symptom patterns and health status and offer review prior to removal from asthma registers.

In summary, this survey has shown that a large minority of children labelled as having asthma in a single UK general practice running an asthma clinic and aiming to provide structured asthma care, were not in fact receiving current asthma treatment or follow-up. A low level of current asthma related morbidity was found in this group, although a minority of these children was tolerating untreated respiratory symptoms. Parental agreement with the previous diagnostic labeling of asthma was found in the majority, but with apparent remission of asthma related symptoms in a large proportion of cases. Most of these children could safely be removed from active asthma registers and their medical records amended to show 'inactive asthma' or 'past history of asthma'.

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Conflict of interest: None

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