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Self-treatment of asthma: possibilities and perspectives from the practitioner's point of view

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Objectives. Self-management of asthma is becoming more and more widespread. The implementation of this treatment strategy requires changes in the role and attitude of the GP. These changes may be hindered by obstacles both expected and experienced. As self-treatment of asthma is more common in the UK, comparison between UK and Dutch GPs provides a good opportunity to identify possible obstacles in general practice to the implementation of self-treatment of asthma with inhaled corticosteroids.

Methods. We carried out a qualitative descriptive study with self-administered questionnaires and interviews. Questionnaires were sent to 500 randomly selected Dutch GPs. Interviews were held with 20 Dutch and 25 British GPs in order to acquire more in-depth information. The outcome measures were attitude towards, knowledge regarding and experiences with self-treatment of asthma; organizational requirements; and expectations of consequences of self-treatment in general practice.

Results. The Dutch and British GPs investigated have a positive attitude towards self-treatment of asthma. Though knowledge about self-treatment is present among a majority of the GPs, self-treatment by patients is not yet as common in The Netherlands as it is in the UK. Nineteen per cent of the Dutch GPs had experience with a written peak-flow-based self-treatment plan related to the usage of inhaled steroids. According to our findings, present expected obstacles are probably mainly of the organizational kind, such as the availability of time, money and materials.

Conclusions. There is a positive attitude towards the implementation of self-treatment plans in general practice, but problems relating to certain identified obstacles need to be addressed. There is a need to define which patients might profit from self-treatment, and further proof of both the clinical effectiveness and the cost-effectiveness of self-treatment needs to be acquired.

Keywords. Asthma, descriptive study, general practice, interview, self-management.

Background

In the last decade, interest in self-treatment of asthma has increased and several studies with different self-treatment strategies have been published. After the first positive results of a self-management plan in the United Kingdom, published by Beasley *et al.* in 1989,[1] others also found clues that self-management and self-treatment programmes may lead to improvement of patients' outcomes.[2–6] Some researchers, however, found more moderate results or even little or no evidence for beneficial effects of self-treatment programmes.[7–9] Most of the positive research has been done among out-patient populations and attenders at accident and emergency departments, so results may be not applicable to general practice. Furthermore, as there are great differences between designs, outcome parameters and contents of the self-management programmes used, it is difficult to compare the results, but at least components such as patient education and peak-flow assessments are felt to have some proven value.[3,4,10]

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Guidelines for asthma treatment in the UK and the US have emphasized the use of self-management plans,[11–13] but guidelines for general practice in The Netherlands have not thus far advised the use of such plans on a broader scale.[14] The use of self-treatment plans among Dutch GPs is therefore less common. Implementation of effective self-treatment plans in general practice might require a change in the role and attitude of the GP. Instead of 'prescriptor' the GP becomes educator and coach.

Objectives

Self-management of asthma seems to be an effective way of managing asthma, and present evidence may justify a change in treatment strategy. Before implementing this change in treatment, the obstacles to this change should be identified.[15] The purpose of this paper is to assess whether GPs are willing to make these changes and what obstacles they might encounter during these changes. As self-treatment of asthma is already more common in the UK, comparison between UK and Dutch GPs provides a good opportunity to assess the obstacles encountered and expected when implementing self-treatment in general practice. The following questions were explored:

- What is the present knowledge of self-treatment of asthma among Dutch GPs?
- How do Dutch GPs use self-treatment plans at present?
- What are the attitudes of Dutch GPs towards the implementation of asthma self-treatment?
- Do Dutch GPs have realistic expectations about the implementation of self-treatment plans in comparison with their more-experienced UK colleagues?
- What are the experienced obstacles and problems regarding the implementation of asthma self-treatment in general practice in the UK and in The Netherlands?

Methods

In the literature there are several definitions for self-treatment and self-management. In this study we used the following definition: self-treatment of asthma means that patients vary their dosage and frequency of inhaled steroids based on peak-flow values and/or asthma symptoms, as described in a written plan. We consider this form of self-treatment to be a component of the broader concept of asthma self-management.[16]

This study was conducted in two phases: first, questionnaires were sent to 500 randomly selected Dutch GPs. The questionnaires provided information from a large group of GPs. However, as they contained mainly closed questions, they were not the most suitable instrument for gaining proper insight into the opinions of the GPs. So, secondly, 20 Dutch GPs and 25 British GPs were interviewed in a standardized way

Questionnaire phase

A random selection of 500 GPs across all of The Netherlands received a questionnaire. After 1 month a reminder was sent to non-responders. GPs were asked to report reasons for not responding to the questionnaire on a separate form, in order to investigate a possible recruitment bias. As no previous instrument was suitable, a structured, closed-end-question (multiple choice), 20-item questionnaire for postal distribution and self-completion was designed specifically for this study. Face validity was examined by discussion with clinical colleagues. The following GP characteristics were studied: age; type of practice: solo, duo, group, health centre, else; urbanization: >30 000 inhabitants, <30 000 inhabitants, rural; and membership of the Dutch College of General Practitioners. In relation to research questions 1 and 2, we asked for familiarity with self-treatment plans (yes, no, a little; symptom-based versus peak-flow-based; with inhaled bronchodilators and/or with inhaled steroids). Information about attitudes and expectations was provided by the following items: possible advantages and disadvantages of self-treatment plans; reasons for not applying self-treatment plans; attitude towards self-treatment plans (useful, because …; not useful, because …); willingness to implement self-treatment plans (eager to, probably want to, don't know yet, probably not, not); reported possible obstacles. Data were analysed using the SAS 6.07 under the CMS statistical package.

Interview phase

Twenty of the Dutch GPs who returned the questionnaires were also interviewed in their practices. As it is obvious that familiarity with self-treatment of asthma is needed in order to have an opinion about it, these 20 GPs were randomly selected from among those GPs who mentioned being familiar with the concept of self-treatment of asthma. Additionally, 25 GPs in the Tyneside area of North-East England, selected as broadly in favour of proactive asthma care by one of the authors (KJ), were interviewed about their attitudes and experiences with self-treatment of asthma. The interviews with the Dutch and British GPs utilized a standard set of questions. The contents of the interview are summarized in Table 1.

Results

As the interviews were designed to obtain more elaborate information about the same subjects who completed the questionnaire, results are presented

TABLE 1 *Contents of the interviews*

Concept of self-management of asthma:

personal definition; commonness of self-management; enthusiasm about self-management; advantages and disadvantages.

Experiences with self-management:

years of experience; number of patients with self-management; organizational obstacles; necessary equipment.

Attitude towards self-management:

is self-management a meaningful alternative for patients and for the GP; motives to start using self-management; willingness and capability of patients to perform self-management.

Organisational conditions:

how was self-management introduced; received instructions prior to introduction; time investment for GP and practice nurse; consequences for the number of consultations, prescribed medication, financial resources, available time and the role of the practice nurse.

TABLE 2 *Reported reasons for not responding to the questionnaire (more than one reason possible; 47 GPs, 63 answers)*

Reason given	No. of GPs	%
Lack of time	42	90
No experience with self-treatment	9	20
Not willing to co-operate	5	10
Personal reasons	5	10
Disagreement with design	2	5

TABLE 3 *Characteristics of participating GPs (questionnaire)*

Age	Years		
Mean	45		
Range	32–64		
Type of practice	No.	%	NIVEL (%)
Solo	136	48	53
Duo	90	32	29
Group	31	11	9.4
Health centre	26	9	8.6
Urbanization		No.	%
Rural:		79	28
Small town (<30 000 inhabitants)		62	22
Urban (>30 000 inhabitants)		146	50

simultaneously. Where relevant, the source of the information will be specified.

The overall response rate to the questionnaire was 59%. Of the 500 questionnaires originally sent out, 287 (57%) were suitable for further analysis. Six forms were not completed at all, and 207 forms were not returned. Of these 207 non-responders, 47 GPs in total gave 63 reasons for not responding. The most common reason for not responding was lack of time (90% of these 47, see Table 2). Table 3 shows some of the characteristics of the GPs who returned the questionnaire. When comparing the type of practice characteristics with figures from the Dutch Institute for Primary Care Research (NIVEL), the sample should in this extent be representative of all Dutch GPs.[28] One hundred and three (36%) GPs reported to be very (well) familiar with the concept of asthma self-treatment, 141 (49%) were somewhat familiar with it and 43 (15%) had never heard of this self-treatment concept. 'No experience with self-treatment' was reported by 20% of the non-responders as a reason for not responding. Presuming that the group of non-responders with no experience with self-treatment is comparable with the responders that had never heard of this self-treatment concept (15%), there might have been some recruitment bias. One hundred and fifty-three (65% of GPs with some kind of experience, 53% of total responders) of the GPs had experience with self-treatment with inhaled steroids, based on asthma symptoms, whereas 45 (19% of GPs with some kind of experience, 16% of total responders) had experience with peak-flow-based programmes.

Advantages

In both the questionnaire and the interview, Dutch GPs reported several possible advantages of self-treatment in various areas: for patients, prescribing, health costs and GPs. Reported advantages for patients were an increase in self-efficacy, higher patient satisfaction and

greater independence and responsibility. Self-treatment programmes could lead to a better control of the disease as a consequence of earlier recognition of symptoms and less doctor-induced delay in treatment. Patients might suffer fewer and milder exacerbations; furthermore, as a consequence of better control, the long-term effects of asthma might be reduced. More efficient medication usage may lead to fewer side effects and perhaps better compliance. From an economic point of view, fewer medical consultations in both primary and secondary care may be needed, together with less use of additional medications. Although GPs expect that the implementation of self-treatment plans initially will take up more of their time, in the long term, as a result of better asthma control, self-treatment might lead to a reduction in emergency visits and intercurrent visits to the GP and thus save time.

Disadvantages

The Dutch GPs felt that as self-treatment requires specific knowledge, skills and patient awareness, this approach is only possible for a selected group of patients. These requirements may well result in extra GP workload for the teaching of self-treatment programmes to patients. Also a lower contact frequency could lead to less medical control of the disease. Misinterpretation of symptoms and wrong treatment decisions by patients could lead to an increased delay in seeking medical help and a consequent more rapid decline in lung function. The long-term influence of self-treatment on the course of asthma is still unknown. At the medication level, self-treatment programmes could result in overtreatment or undertreatment and decreased compliance. In economic terms, more complications may well lead to an increased need for treatment and medical resources, with an attendant rise in health care costs. In the interviews with British GPs, most of the GPs explained that they had not (yet) encountered any of these negative effects.

Willingness to implement self-treatment plans

Sixty-eight GPs (24% of total responders) did not promote self-treatment of asthma with inhaled steroids for one or more reasons. Their stated reasons for not applying self-treatment are summarized in Table 4. Most of the GPs reported that they had never really thought about the implementation of self-treatment, or did not know how to start with the implementation of self-treatment plans. Among the GPs who reported self-treatment with inhaled steroids to be useful (164, 57%), almost 90% of the GPs were more or less willing to start self-treatment (see Table 5). This is 51% of the total number of responders.

Reported obstacles

Of the above 164 GPs, 41 (25%) thought that there would be no consequences for daily practice in commencing asthma self-treatment, but reported expected obstacles by the remainder were: availability of time, availability of necessary materials (peak-flow devices, diary cards, etc), delegation of tasks and the role of the practice assistant or nurses, and changes needed in the role of the GP. During the interviews with the British GPs, some experienced obstacles were reported that need to be taken into account when implementing self-treatment of asthma in general practice. These obstacles were mainly of a practical nature. Necessary materials (e.g. peak-flow devices, diary cards) need to be available. At the start of the implementation of self-treatment, an extra time investment is needed. Later on, as reported by the GPs, this time investment will be paid back, because of a decreasing number of emergency visits and consultations. Tasks need to be clearly divided among the GP and the practice nurse, and both need to use the same protocol of care. The lack of such a clearly described protocol was reported as one of the obstacles. Setting up a so-called asthma clinic was reported as a good solution to overcome most of the organizational problems.

We also studied the relationship between knowledge of self-treatment of asthma, age, type of practice, earlier experiences with self-management of diabetics and the willingness to start implementing self-treatment. The only relationship we found was a positive association

TABLE 4 *Reasons for not applying self-treatment with inhaled steroids (*n = *68, 24% of total responders; more than one reason possible)*

Reason	No.	%
Never thought about using self-treatment	26	38
Difficult to make a start	17	25
I do not (don't) know how to apply self-treatment	14	21
No benefit for the patient	7	10
Not enough time	4	6
Other reasons	11	16

TABLE 5 *Willingness of GPs to start with self-treatment of asthma (if thought to be useful;* n = *164)*

	No.	%
Eager to start	71	43
Probably wants to start	75	46
Doesn't know yet	10	6
Will probably not start	7	4
Will definitely not start	1	1

TABLE 6 *Relation between knowledge of and willingness to start with self-treatment*

	Eager to start	May start	Don't know if	Probably not start	Not start
Knows self-treatment very well	40	15	1	1	1
Has heard of self-treatment	31	59	8	6	0
Has never heard of self-treatment	0	1	1	0	0

between the familiarity of the GP with the concept of self-treatment of asthma and his/her willingness to start implementing such self-treatment (see Table 6).

Discussion

Our results indicate that 57% of the Dutch GPs in our sample have a positive attitude towards the implementation of asthma self-treatment plans in general practice. Many have at least some knowledge about this innovation in care, but experience with the use of self-treatment is more limited. When comparing the expected disadvantages of the Dutch GPs with the experienced disadvantages of the British GPs, Dutch GPs may overestimate the possible disadvantages of self-treatment of asthma. On the other hand, they do have a realistic understanding of the potential obstacles in primary care which need to be overcome in the more widespread promulgation of self-treatment, and their views in this area are echoed by the experiences of the UK GPs interviewed.

The increasing prevalence of asthma, among other factors, has also led to an increased burden of asthma morbidity.[17–20] Since the majority of asthma management for both acute and chronic episodes occurs in general practice,[21,22] it is important that the community care of this common disease is optimized. The publication of numerous consensus-based guidelines on asthma management over the last decade has been a welcome advance,[11–12] as has been the more recent production of evidence-based documents.[23] Proof of the effectiveness of such guidelines has gradually appeared, but there has often been insufficient focus on the organizational aspects of asthma care outside hospitals.

The development of asthma self-management plans has to some extent mirrored that of guidelines. Some original hospital-based experience indicated that they may be beneficial,[1] and their use, particularly in the UK, then became widespread. Further community-based research has followed quite slowly, but some at least of the literature now indicates benefits for patients.[2,5,24]

Some important lessons have emerged from earlier experiences. First, showing beneficial outcomes of such care has proven to be difficult, and present-day research findings are not all in favour of self-management. Secondly, it is still unclear which patients might profit most from self-management programmes, but there are indications that these plans do not necessarily apply to all patients. For example, self-treatment based on peak-flow meters is not suitable for all patients and symptom-based self-treatment programmes are, under certain circumstances, equally effective as peak-flow-based programmes.[7,25]

If the potential advantages of asthma self-treatment are to be realized in the community, there is a need for clear guidelines, describing how to implement self-treatment of asthma in general practice and defining the patients that might profit from self-treatment. Current differences in available self-treatment plans need to be regularized.[26] In the interviews with the British GPs, the need for a clear division of tasks and a useful protocol of care was expressed. Organizational requirements are likely therefore to play crucial roles in delivering optimal asthma care. A recent UK publication by Neville *et al.* underlines the possible influence of practice organization and audit on clinical outcome measures in general practice asthma care.[27]

Clearly, interest in self-treatment programmes among Dutch GPs is increasing. Knowledge and attitude towards self-treatment of asthma do not seem to be obstacles for the implementation of self-treatment programmes. However, training practice assistants or practice nurses and GPs, and reorganizing general practice in order to implement a self-treatment programme take time and money. Resources of potential benefit to patients with asthma could be wasted if strict attention to training of practice assistants or nurses and the production of efficient protocols is not given.

As a consequence of this study, a self-treatment programme tailored to Dutch general practice will be developed and further research to assess the clinical and cost-effectiveness of this self-treatment programme initiated.

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