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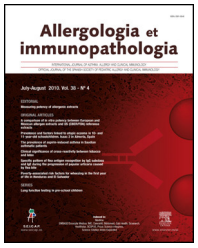

RESEARCH LETTERS

Allergy shots: Do patients feel pain or fear?

To the Editor,

Allergic respiratory diseases are usually treated with anti-inflammatory and/or anti-symptomatic drugs. However, not all patients are satisfied with pharmacotherapy even when drugs are provided free of charge.[1] Subcutaneous immunotherapy (SCIT) has disease-modifying effects,[2] and constitutes a cost-effective treatment of allergic asthma and/or rhinitis.[3] It has some disadvantages, such as the need for injections, monthly visits to allergy centres, and the possibility of local and/or systemic reactions, some of which may be severe. Although there are several studies evaluating children's pain associated with immunisation procedures, as far as we know there are no children or adult studies evaluating pain or fear associated with subcutaneous immunotherapy injections. In the present study we tried to assess if adult patients undergoing injective immunotherapy felt that allergy injections were painful or dangerous, using visual analogue scales (VAS), which are simple validated tools widely used to measure subjective aspects,[4] such as the level of pain or fear associated with some procedures.

We applied an anonymous questionnaire to all adult patients with respiratory allergy (asthma and/or rhinitis) that received a maintenance allergy shot with polymerised aeroallergen extracts in our department during the month of May 2010. Apart from the oral information that had been previously given by their attendant allergologists, all patients received, at the time of their first injections, written information concerning possible local and systemic reactions, being expressly advised that they should receive their allergy shots in a hospital setting because of the risk of important immediate side-effects that could be life-threatening.

We excluded patients in the build-up phase of SCIT because we are now currently using, for patients' convenience, a rush build-up scheme with two injections of polymerised extracts, performed on the same day with a 30–60 min interval, allowing to reach the maintenance dose on that same day. As it did not seem correct to compare days with two injections with days with only one injection, we chose to assess only patients receiving one maintenance injection (always 0.5 ml also to avoid bias of different volumes injected). Additionally, these patients already had some personal experience with the procedure, which was felt as an advantage to obtain a sound judgement. However, it can be reasonably argued that this inclusion criterion could have created a selection bias favouring the inclusion of patients who for any reason are compliant with SCIT or selecting those patients who have overcome their fear or pain associated with SCIT.

The questionnaire was handed to the patient by the nurse, immediately after the injection, and was collected 30 min later, when the patient was re-evaluated before hospital discharge. The questionnaire comprised demographic (age, sex) and clinical data (year of SCIT initiation, presence of asthma and/or rhinitis) and two 100 mm VAS regarding intensity of pain, varying from 0 (no pain) to 100 (worst pain possible) and regarding apprehension/fear towards the allergy shots, varying from 0 (no apprehension/fear) to 100 (highest degree of apprehension/fear). The score was determined by the distance in millimetres from the starting point on the left end of the line up to the point marked by the patient.

During this one-month study, 292 patients received an allergy shot in our department. We excluded 82 patients: 14 patients refused to participate; 46 patients were in the build-up phase; and 22 patients incorrectly fulfilled one or both VAS. Therefore we were able to analyse a total of 210 questionnaires (56% females). Patients' mean age was 32.4 ± 11.7 years (median 30 years; minimum 19; maximum 65 years). Most patients were in the first or second year of SCIT (mean SCIT duration 1.2 ± 1.3 years; minimum 4 months, maximum 5 years). Both VAS data are presented in Fig. 1. Mean value for pain was 9.5 mm (minimum 0; median 0; 3rd quartile 19; maximum 40 mm). Fifty-three percent of our patients had a VAS pain score of zero. Mean value for VAS fear was 1.7 mm (minimum 0; median 0; 3rd quartile 0; maximum 30 mm). Eighty-nine percent of our patients had a VAS fear score of zero. Fear and pain VAS scores were weakly correlated ($r = 0.22$; $p = 0.03$; Pearson). Females scored slightly higher on pain VAS (mean 11.4 mm in females versus 7.2 mm in males; $p = 0.032$; chi-square) but both sexes scored equally on fear VAS. Age, type of allergens (mites or pollens) and type of allergic disease (asthma, rhinitis or both) had no statistically significant influence on pain or fear VAS scores. However, longer SCIT duration was associated with small, although statistically non-significant, increases in pain VAS score but not on fear VAS score (Table 1). As reported in other studies we have

Table 1 Mean values of pain and fear VAS scores according to SCIT duration.

SCIT duration	Number of patients	VAS pain (mean ± SD)	VAS fear (mean ± SD)
Less than 1 year	84	8.3 ± 2.4 mm	1.9 ± 0.9 mm
Between 1 and 2 years	66	9.1 ± 3.1 mm	1.8 ± 1.1 mm
Between 2 and 3 years	22	10.1 ± 2.8 mm	0.8 ± 0.7 mm
Between 3 and 4 years	24	11.8 ± 4.5 mm	2.1 ± 1.6 mm
More than 4 years	14	12.7 ± 3.2 mm	1.7 ± 1.2 mm

VAS – visual analogue scales, SCIT – subcutaneous immunotherapy; SD – standard deviation.

observed a progressive reduction in the number of patients that continue regular SCIT-treatment throughout time, this reduction being particularly more marked after the second year of SCIT.

The results of this study clearly suggest that allergy shots are associated with low or absent levels of fear or pain, as self-reported by allergic patients, despite the fact that some physicians and non SCIT-treated patients may believe otherwise. Pain is a multidimensional experience involving a wide spectrum of affective and emotional factors. The concept of pain varies from person to person; nevertheless it can be defined as ''an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage''.[5] Quantification of pain through VAS scores has allowed comparisons between different settings and between different individuals. In studies of postoperative pain, VAS scores of 0–4 mm are generally considered as representing no pain and between 5 and 44 mm to represent mild or acceptable pain.[6] Studies in diverse settings have proposed mild pain to be defined up to 36–50 mm in pain VAS,[7] while a very recent clinical trial in headache patients defined, by analysis of ROC curves, the following cut-off points for VAS scores: no pain 0–2 mm; mild pain 2–17 mm; moderate pain 17–47 mm; severe pain 47–77 mm; very severe pain 77–96 mm; and the most severe pain imaginable 96–100 mm.[8] In our study, all patients scored less than 40 mm, 53% scored zero and 75% scored 19 or less. This means that the perception of pain or perception of potential damage associated with allergy injections is not a very important issue in the majority of adult patients on maintenance SCIT with polymerised allergen vaccines, at least when injections are given by trained staff in a hospital setting. There is a slightly higher perception of pain by female patients, something that has already been reported in other pain studies.[9,10] In our study, asthmatic patients had VAS pain scores very similar to rhinitis patients (9.3 mm versus 9.7 mm), without any significant differences. However it was not possible to evaluate the subgroup of asthmatic patients who had already been treated in an emergency department (and who could have previously had other painful experiences with injections) since no question regarding prior emergency room treatments was included in our questionnaire. The slight (but not significant) increase in pain scores that is seen with the increase in SCIT duration could perhaps be attributed to repeated local trauma but since we did not investigate prospectively the evolution of pain scores in the same individuals we have no data to support this assumption.

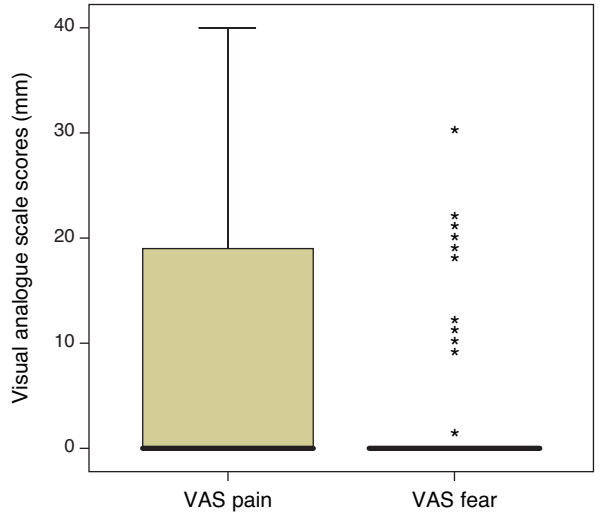

Figure 1 Boxplots of visual analogue scales (VAS) scores for pain and fear.

Fear associated with allergy shots is even more multifactorial. It probably comprises, among other dimensions, fear of immediate pain due to injection, fear of local reactions (painful or troublesome) or even fear of severe reactions (needing treatment, hospitalisation or potentially life-threatening). Obviously fear scores are influenced by previous experiences and also by the information that people have (perceived risk). In our study, despite all patients having received oral and written information regarding the potential risks of allergen vaccines, it is worth mentioning that 89% of patients stated no fear regarding allergy shots, demonstrating once again, at least in experienced centres, that the perceived risk of severe adverse reactions to allergy shots is not a major issue for most of our patients in maintenance SCIT with polymerised allergen vaccines.

In conclusion, in this study we found that most allergic patients receiving regular maintenance allergy shots with polymerised allergen vaccines in a specialised immunoallergology centre do not perceive this form of treatment as painful or dangerous. These results highlight the fact that most of these patients do not report any negative views towards the application of immunotherapy via subcutaneous injections.

Ethical disclosure

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this investigation.

Right to privacy and informed consent. The authors declare that no patient data appears in this article.
Confidentiality of data. The authors declare that no patient data appears in this article.

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M.B. Ferreira[a,b,*], L.P. Viegas[a], A.S. Santos[a], M.P. Barbosa[a,b]

[a] *Immunoallergology Department, Hospital de Santa Maria, Centro Hospitalar Lisboa Norte, Portugal*
[b] *Faculty of Medicine, University of Lisbon, Portugal*

[*] Corresponding author.
E-mail address: mbrancoferreira@gmail.com (M.B. Ferreira).

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The use of alternative medicine in children with atopic dermatitis

To the Editor,

Atopic dermatitis (AD) is one of the most common chronic inflammatory skin diseases during childhood and the prevalence is increasing worldwide.[1] Although effective treatment options exist, absolute clinical improvement is unachievable: this might lead to search for alternative methods to cure disease especially by parents of children with AD. Fear of side effects of long term use of corticosteroids might also contribute to this attitude of parents. Limited data are available about alternative medicine (AM) use in AD during childhood.[2] Our aim was to establish the prevalence and diversity of alternative medicines and to demonstrate risk factors associated with their use in children with AD.

Children aged 6 months to 18 years with at least three month-duration of AD admitted to the pediatric allergy outpatient department of Ankara Education and Research Hospital were enrolled in the study. The diagnosis of AD was based on United Kingdom (UK) Working Party's Diagnostic Criteria[3] and severity was assessed by SCORAD index.[4] We administered a questionnaire to parents designated to evaluate the varieties of AM used, the reasons for trying AM, who recommended AM, whether the child had any benefit or adverse event due to AM utilisation, impact of AD on quality of life of child and opinion about the control level of AD according to parents. The physicians also noted demographic characteristics and disease related features. The study was approved by the Ethics Committee of Ministry of Health, Ankara Education and Research Hospital and parents provided written informed consent.

All parents invited to study, agreed to participate. During February–August 2010, 68 patients [60.3% male, median 1.33 year (interquartile range; 0.79–5 years) were included. The median age at onset of AD symptoms was 9.5 (1.5–26.75) months. In the last year, the patients had been admitted for medical care with a median of three (2–4) times because of AD. The median of patients' SCORAD index was 20 (16.1–28.8), and 23 (33.8%) of them had atopy. Thirty parents (44.1%) agreed with the proposal that ''AD affects quality of life of my child'' and 27 parents (39.7%) with ''My child's AD is not under control''.

Alternative treatment recommendations were done mainly by relatives (26.5%) and friends (19.1%) to 33 parents and used by 20 (29.4%) patients. Praying was the most commonly tried alternative method ($n = 15$). However, five patients used two or more types of AM for AD (Table 1). The other advised but not accomplished alternative treatment modalities were praying ($n = 8$), application of barley juice ($n = 1$), wrapping with wet bran ($n = 1$), peeling of diseased skin ($n = 1$) and cauterisation with hot metal ($n = 1$). The most common reason cited by parents for application of AM was unresponsiveness to medical treatment (80%). Three children who utilised AM [praying ($n = 2$), application of olive oil ($n = 1$)] had a somewhat improvement as reported by their parents but two children had cutaneous infection after the application of chicken stool and