Figure 2 Detail of an erosive lesion on the tongue.

the positive oral provocation test, and we obtained the patient hospitalisation clinical history confirming that paracetamol was the responsible drug in the previous skin reaction. To our knowledge this is the first report of Stevens-Johnson syndrome after paracetamol ingestion confirmed by oral provocation test and biopsy. We also wish to stress the importance of a meticulous patient questioning after suffering this type of reactions and the difficulties associated to remembering the generic and trade names of the medicines due to the large number of brand names and their similar pronunciation.

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References

1. Kvedariene V, Bencherioua AM, Messaad D, Godard P, Bousquet J, Demoly P. The accuracy of the diagnosis of suspected paracetamol (acetaminophen) hypersensitivity: results of a single-blinded trial. Clin Exp Allergy. 2002;32:1366–9.
2. Ibañez MD, Alonso E, Muñoz MC, Martínez E, Laso MT. Delayed hypersensitivity reaction to paracetamol (acetaminophen). Allergy. 1996;51:121–3.
3. Halevi A, Ben-Amitai D, Garty BZ. Toxic epidermal necrolysis associated with acetaminophen ingestion. Ann Pharmacother. 2000;34:32–4.
4. Bygum A, Gregersen JW, Buus SK. Acetaminophen-induced toxic epidermal necrolysis in a child. Pediatr Dermatol. 2004;21:236–8.
5. Oh SW, Lew W. Erythema multiforme induced by acetaminophen: a recurrence at distant sites following patch testing. Contact Dermatitis. 2005;53:56–7.
6. Dubey NK, Jajoo D, Gupta A, Sharma D. Antipyretics induced erythema multiforme. Indian Pediatr. 1995;32:1117–9.

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Bronchial asthma, sensitisation and exposure to Der p1 and Der f1 in an Andean Ecuadorian school

To the Editor:

House dust mites are important indoor allergens and are commonly related with asthma and allergic diseases, especially in children. Recently, domestic mite fauna in high altitude (2,500–2,800 m) cities of Ecuador have been studied and demonstrated a frequent and abundant presence of mites and their allergens in house dust samples collected.[1] Also, other studies had suggested that *D. pteronyssinus* and *D. farinae* are important sensitising agents in patients with allergic rhinoconjunctivitis and bronchial asthma in Quito.[2] Their significance is greater than that of pollens and other allergens.[3]

Quito, the capital of Ecuador, is a city located in the Andes Mountains, at 2,800 m above sea level. Its temperature ranges from 7 °C at night, to 26 °C during the day, averaging 15 °C , and its annual mean relative humidity is 75%. While children's greatest exposure to indoor allergens is in the home, other public places where children spend a large amount of time, such as schools, may also be sources of significant allergen encounters. Studies on the significance of environmental conditions and dust mites concentrations in the school environment are scarce in the world, and absent in Ecuador and many other Latin-American countries. Students spend a great deal of their time in the classroom, and aeroallergen exposure in the school environment could facilitate allergic sensitisation and subsequent development of asthma.

To determine asthma prevalence and characteristics, sensitisation and exposure levels to Der p 1 and Der f 1 in students of Quito, we researched an urban private elementary school with 278 students. One hundred and ten students participated in the study. Their age ranged from 6.3 to 20.7 years with a mean of 12.3 years. Forty-seven (42.7%) were males and 63 (57.2%) females.

Every child was given a complete physical examination and PEFR (ASSESS portable device, Health Scan Products inc, NJ, USA). Skin prick tests were conducted on the volar surface of the forearms using a standard battery of skin tests, including standardised extracts of *D. pteronyssinus*, *D. farinae*, *Lepidoglyphus* destructor, *Tyrophagus putrescentiae*, grasses mix (*Dactylis glomerata*, *Festuca pratensis*, *Poa pratensis*, *Phleum pratensis*, *Lolium perenne*), weeds

Table 1 Skin sensitisation rates in the 110 students*

	Students group (n=110)		Asthmatic group (n=25)	
	N.-asthmatics	% students	N.-asthmatics	% asthmatics
Any allergen	48	43.6	18	72
Any *Dermatophagoides*	44	40	17	68
D. pteronyssinus	43	39	17	68
D. farinae	33	30	15	60
L. destructor	6	5.4	3	12
T. putrescentiae	2	1.8	0	0
Grass mix	10	9.2	7	28
Weed mix	4	3.6	1	4
Dog dander	6	5.4	3	12
Cat dander	13	11.8	6	24
Moulds	0	0.0	0	0

*Twenty five asthmatics were found among 110 students.

Table 2 Clinical characteristics of the 25 asthmatic students

	Previously diagnosed		Previously undiagnosed	
	N.	%	N.	%
Number of cases	8		17	
Positive SPT[a] to any allergen	8	100	10	58.8
Positive SPT to *Dermatophagoides*	8	100	10	58.8
Family history of allergy	6	75	15	88.2
Abnormal PEFR	1	12.5	6	75
Current wheezing	2	25	1	12.5
Rhinitis or nasal symptoms	5	62.5	10	58.8
AD[b] or skin symptoms	3	37.5	5	29.4
Smoking parents	4	50	9	52.9

[a]Skin prick test.
[b]Atopic dermatitis.

mix (*Artemisia vulgaris, Chenopodium album, Parietaria judaica, Plantago lanceolata, Taraxacum officinale*), dog and cat dander and mould mix (*Alternaria tenuis, Chaetomium globosum, Cladosporium fulvum, C.herbarum, Fusarium sp, Aspergilus amstelodami, A. fumigatus, A. niger, A. terreus*) (Laboratorios LETI, Tres Cantos, Madrid, Spain). Written questionnaires were sent to the student's parents inquiring about the presence of asthma or any chronic bronchial and allergic diseases displayed by the student or close relatives, and the smoking habits of the parents. Dust samples were collected from 10 classrooms and analysed for Der p 1 and Der f 1 allergens.

Out of the 110 students tested, 48 (43.6%) had skin sensitisations to at least one allergen. The main sensitiser was *Dermatophagoides* with 43 (39.0%) sensitised to *D. pteronyssinus*, and 33 (30.0%) to *D. farinae* (Table 1). Parents of 99 students responded to the questionnaires and among those students we found 25 (25.2%) asthmatics (8 previously diagnosed by a physician and 17 previously undiagnosed). Table 2 shows the clinical characteristics of the 25 asthmatic students. Twenty-one (84%) of the 25 asthmatics had a family history of allergies, and 18 (72%) had skin tests positive to at least one allergen. Also *Dermatophagoides* was the main allergen among asthmatics, with 17 (68%) of them sensitised to *D. pteronyssinus* and 15 (60%) to *D. farinae*. Differences were not significant comparing the asthmatics and their sensitisation to *D. pteronyssinus*, in any age or sex group. The other allergens tested produced statistical lesser sensitisations than those obtained with *Dermatophagoides*, in the group of 110 students and in the group of 25 asthmatic children. Seven (28%) of the 25 asthmatic students presented a PEFR lower to the 80% of the predicted values and three (12%) presented current wheezing upon physical examination. We have not found a relationship between asthma and parental smoking. High Levels of Der p 1 (geometric mean of 6.76 ug/g, range from 3.4 to 77.7) and Der f 1 (5.93 ug/g, range from 1.6 to 79.5) were found in 50% of the dust samples collected (Table 3). In most cases allergen levels exceeded the concentrations which have been proposed for sensitisation and presence of symptoms.[4] In similar studies, detectable but lower levels

Table 3 Der p 1 y Der f 1 levels in 10 classroom dust samples

Der p 1	% > 0 μg	50
	% > 2 μg	30 sample size
	% > 10 μg	20
	Geom. mean	6.7
	Range	3.4–77.7
Der f 1	% > 0 μg	50
	% > 2 μg	40 sample size
	% > 10 μg	10
	Geom. mean	5.9
	Range	1.6–79.5

of dust allergens were reported by North American authors.[5,6]

In conclusion, there is a considerable proportion of dust mite allergic school children in Quito. Dust mite allergens may be present in schools in Quito in concentrations to induce allergic/asthmatic symptoms. The humidity of 75% in spite of the height of 2,800 m above sea level may explain the presence of dust mites.

References

1. Valdivieso R, Iraola V, Estupiñán M, Fernández-Caldas E. Sensitization and exposure to house dust and storage mites in high-altitude areas of Ecuador. Ann Allergy Asthma Immunol. 2006;97:532–8.
2. Valdivieso R, Estupiñán M, Acosta ME. Asthma and its relation with Dermatophagoides pteronyssinus and Dermatophagoides farinae in Andean altitudes (Quito, Ecuador). J Invest Allergol Clin Immunol. 1997;7:46–50.
3. Valdivieso R, Acosta ME, Estupiñán M. Dust mites but not grass pollen are important sensitizers in asthmatic childen in the Ecuadorian Andes. J Invest Allergol Clin Immunol. 1999;9:288–92.
4. Platts-Mills TA, Vervloet D, Thomas WR, Aalberse RC, Chapman MD. Indoor allergens and asthma. Report of the third international workshop. J Allergy Clin Immunol. 1997;100:S1–24.
5. Amr S, Bollinger ME, Myers M, Hamilton RG, Weiss SR, Rossman M, et al. Environmental allergens and asthma in urban elementary schools. Ann Allergy Asthma Immunol. 2003;90:34–40.
6. Perry TT, Vargas PA, Bufford J, Feild C, Flick M, Simpson PM, et al. Classroom aeroallergen exposure in Arkansas head start centers. Ann Allergy Asthma Immunol. 2008;100:358–63.

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Immunophenotypic abnormalities of CD8$^+$ T-cell subsets in a patient with unusual Good's Syndrome

To the Editor:

Good's syndrome is characterised by hypogammaglobulinemia associated with thymoma. It accounts for 7% to 13% of adult onset cases of hypogammaglobulinemia and patients usually present over 4th or 5th decade of life.[1,2] These patients are at high risk for recurrent infections, and the most common are sinopulmonary infections by encapsulated bacteria. Chronic diarrhoea is also a very common manifestation although pathogens are not always isolated.[2] Patients develop opportunistic fungal and viral infections more frequently than in common variable immunodeficiency (CVID) patients. The cause and pathogenesis of Good's Syndrome are still unknown. The data on abnormalities in T cell immunophenotype and function are limited[2]. We here report on immunophenotypic T-cell abnormalities in an unusual case of Good's Syndrome.

In 1999, a 45-year-old woman was discovered to have panhypogammaglobulinemia. She was previously diagnosed of inflammatory bowel disease (Crohn's disease) with chronic diarrhoea, neutropenia secondary to 5-aminosalicylic acid, sulfamides allergy, iron deficiency anaemia and renal lithiasis. At that moment she had no history of recurrent infections. Peripheral blood tests showed mild anaemia (Hb: 10.9 g/dl), and confirmed panhypogammaglobulinemia by nephelometry (IgG: 348 mg/dL, IgA: 70 mg/dL, IgM: $<$7 mg/dl, IgE $<$2 mg/dL). Lymphocyte surface markers (performed by flow cytometry) in peripheral blood revealed no circulating B cells (CD19$^+$: 0%), normal CD3$^+$ T-cell counts and inverted CD4$^+$/CD8$^+$ ratio. There was no specific antibody production after tetanus immunisation. Specific antibody production to pneumococcus polysaccharide vaccination was abnormally low. Agglutinins to Candida and serum complement levels were normal. Antinuclear antibodies were negative and she had no acute phase reactants. Serologic testing for HIV, HBV and HCV were negative. Biochemical parameters were within normal ranges. Intravenous immunoglobulin (IVIG) infusions were started at substitutive doses of 400 mg/kg every 4 weeks.

During follow-up she developed episodes of upper respiratory tract infections and two episodes of pneumonia (2002 and 2004), which responded to intravenous antibiotic treatment. Although diarrhoea due to inflammatory bowel disease diminished in frequency, by 2004 she had developed intestinal infection due to *Campylobacter jejuni* and was