

Low rate of cockroach sensitivity in Italian pre-school children

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Key words: allergy; asthma; children; cockroach.

It has been indicated that exposure in the first 3 months of life to cockroach (CR) allergens is associated with repeated wheezing and asthma (1–3), suggesting that precocious exposure to CR

may be involved in the development of early 'atopic' status and infantile wheezing (4). In US and in other countries this is particularly associated with urban and low socio-economic status (5). In this cross-sectional study, we aimed to investigate the prevalence of the CR sensitization and the association with allergic symptoms in a general population of pre-school children. All children aged 3–5 years attending 18 randomly selected nursery schools, located in the urban area of Verona, were considered suitable for the study. Parents filled ISAAC questionnaire (6) and child atopic status was verified by skin prick tests (SPT) using standardized extracts for German cockroach (*Blattella germanica*) (Stallergens, France) and the common inhalants as well as negative and histamine control (10 mg/ml) (ALK-Abello*, Milan, Italy).

Approval by local Ethical Committee and written informed consent by children's parents or guardians were obtained.

A total of 1121 children were screened by both SPT and ISAAC WQ and 18.3% of children presented at least one positive SPT. Only five subjects (0.45%), two males and three females, ranging in age between

4 and 5 years, were sensitive to CR. Mite, grass, alternaria and cat sensitivities were present, respectively, in 8.0, 7.8, 5.0 and 3.2% of population. CR sensitive children were all sensitive also to other allergens, particularly mites, grasses and alternaria. As results of multiple sensitivities, these five children presented allergic diseases as reported in the WQ. Two subjects presented wheezing, one patient eczema and asthma, and two subjects rhinitis.

Totally 169 children (12.1% of the total population) reported wheezing in the last 12 months; three of these children (1.7%) were also SPT positive to CR. Another 236 children (16.8% of the total population) suffered from rhinitis apart from cold in the last 12 months; of these children two (0.8%) were sensitive to CR.

Our data disclose the actual poor relevance of CR allergen in the population of our region in comparison with other more common allergens. Different socio-economic conditions may influence the indoor environment and differently drive the allergic sensitization. In our opinion the relevance of 'new' allergens should be continuously verified in each country in order to concentrate the efforts against the real local major allergens. From a clinical point of view we suggest that in our region CR investigation should be reserved only to selected patients.

Acknowledgements

We wish to express our gratitude to Glaxo-SmithKline for supporting the study. We are indebted to Dr Patrizia DiBlasi and Dr Giovanni Visona* of Glaxo-SmithKline for assistance in study planning and for statistical advice.

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Accepted for publication 19 December 2002
Allergy 2003; 58:531
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ISSN 0105-4538

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Removal of house-dust mites and Der p I during laundering of bedding

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Key words: allergen; bedding; Der p I; house-dust mite; laundering.

Bedding is an important habitat for house-dust mites, and acts as a sink for mite allergens. Previous research suggests that group I allergens are efficiently removed during domestic laundering (1) but temperatures of 53–58°C are required

to kill mites (1–3). However, this is near the upper limit of settings typically recommended for hot water cylinders, and heat losses incurred during laundering mean the maximum reached in many domestic washing machines may well be considerably lower than this. It has been suggested that commercial laundering might be better able to provide such conditions.

Using dataloggers embedded in duvets, temperature profiles for five domestic washing machines were obtained and compared with those for two commercial machines. Heat-escape bioassays (2) and monoclonal enzyme-linked immunosorbent assay (ELISA) of vacuumed dust from nine used duvets, were also used to determine reductions in mite and Der p I levels after commercial laundering.

The maximum temperature experienced within duvets during laundering varied greatly (range: 32.5–61.9°C), as did the length of time it was sustained (Fig. 1). Mean Der p I levels of 4.6 µg/m² (95% CI: 1.7–7.5) and 34.4 µg/g (95% CI: 12.0–56.8) were determined in dust sampled from duvets prior to washing, and found to be significantly reduced ($P \leq 0.01$) by washing. Mean reductions of 99.5% (95% CI: 99.1–99.9) for Der p I per unit area, and 97.7% (95% CI: 95.9–99.5) per unit mass were recorded. However, only one commercial and two domestic machines (Com. m/c 1 and Dom. m/c 2 and 3) sustained wash temperatures greater than 55°C for more than 10 min, suggesting appreciable mite survival on some samples. Using the best performing machine (Com. m/c 1) a significant reduction ($P \leq 0.001$) in mite numbers (mean: 87.8%; 95% CI: 77.9–96.7) was demonstrated after laundering of used duvets. This result was unaffected by the incorporation of laundry detergent ($P > 0.05$).

The conclusions are:

- Commercial, and likely also domestic, hot-laundering results in near complete removal of mite allergen from bedding.

Temperatures reached during both commercial and domestic hot-laundering vary greatly, and influence mite survival.

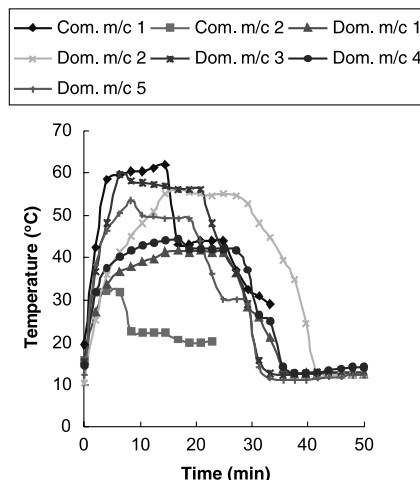


Figure 1. Temperature profiles obtained from commercial and domestic washing machines.

- A wash cycle where temperatures above 55°C are sustained for at least 12 min (or above 60°C for 8 min) is sufficient to eliminate >80% of mites.
- Considerable variation exists in the ability of both domestic and commercial machines to reach such temperatures, and this ability should be confirmed before recommending hot-laundering as a method of eliminating house-dust mites from textiles.

This research was supported by grants from the New Zealand Public Good Science Fund, Wellington, New Zealand and the RITS@WRONZ club. The latter is a grouping of NZ companies involved with the laundering, drycleaning, manufacturing, and retailing of textiles.

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Accepted for publication 6 February 2003
Allergy 2003; 58:531–532
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ISSN 0105-4538

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Allergy to *Ailanthus altissima* (tree of heaven) pollen

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Key words: allergy; *Ailanthus altissima*; tree of heaven; skin-prick test; cross-reaction.

Ailanthus altissima L. (= *A. glandulosa*), family Sumaroubaceae, commonly known as 'tree of heaven', 'tree of sun' or 'Persian sumach', is a native of China and Malaysia, very common in Eastern Asia and introduced in

The pollen of *Ailanthus altissima* (tree of heaven) is a new potential respiratory allergen.

Europe and in Italy. In the second half of 19th century it has been widely cultivated and used for the breeding of *Ailanthus*' sphinx (*Bombyx cynthia*) in replacement of silkworm (*Bombyx mori*). *Ailanthus* is a deciduous plant, reaches 15–20 m in height and 70 cm in diameter, has a leafy foliage and a cylindrical trunk which soars without branches in the first tract. The polygamous flowers, white-yellowish or greenish, are gathered in dense racemose cymes and have, like the leaves, an unpleasant smell. The pollination is anemophilous and lasts from April to June. The pollen grain, 22–25 µm, has three pores, is isopolar, ovoidal or spherical. *Ailanthus* is rapid growing, easily adapted to various lands, to drought and to winter's cold, and is used as ornamental plant and on lands subject