

Correspondence

Reply

To the Editor:

Liccardi et al¹ discussed the complexity of classifying cat allergen exposure in subjects with cat allergy and its relationship with clinical symptoms. Indeed, although patients with a cat at home are clearly exposed to higher levels of cat allergens, Liccardi et al indicated that cat ownership “should not be considered as the only index of exposure to cat allergens” because “indirect” exposure to cat allergens can be sufficient to induce sensitization.

We agree that a study that examines the modulation of the allergen-specific immune response in conditions of direct and passive cat allergen exposure would be of interest. However, classifying subjects into an indirect exposure group can be logistically difficult. The study might also require monitoring of cat dander in homes and on subjects’ clothing. Published data suggest that the cat allergen-specific immune response and symptoms are predominantly modulated by current cat allergen exposure.²⁻⁴ Indeed, the cat allergen-specific IgG₄ response is significantly increased only during current exposure and related

to low sensitization (regarding the IgG₄/IgE ratio).²⁻⁴ These observations suggest that high cat allergen exposure is needed to modulate the immune system.

In our work,⁵ allergic patients were questioned about whether they had a cat at home. In accordance with previous publications,²⁻⁴ we observed higher IgG₄ levels, reduced skin reactions, and lesser allergic rhinitis symptoms in the group of patients who owned a cat. Because monosensitization to cat allergen is very uncommon in the Seattle metropolitan area, all subjects with cat allergy in our cohort were also sensitized to dust mites, mold, or both (Fig 1, A). In addition to assessing the rhinitis score, which was based on medication use and cat avoidance,⁵ we also questioned the majority of subjects regarding symptoms occurring in the presence of cat (itch, sneezes, runny nose, and wheeze) to generate a cat allergy symptom score (Fig 1, B and C). This score is lower in allergic patients with a cat, which confirms the related low sensitization observed during chronic allergen exposure (Fig 1, D).

As mentioned by Liccardi et al,¹ the benefit of having a pet at home on the development of allergic sensitization is debated, and

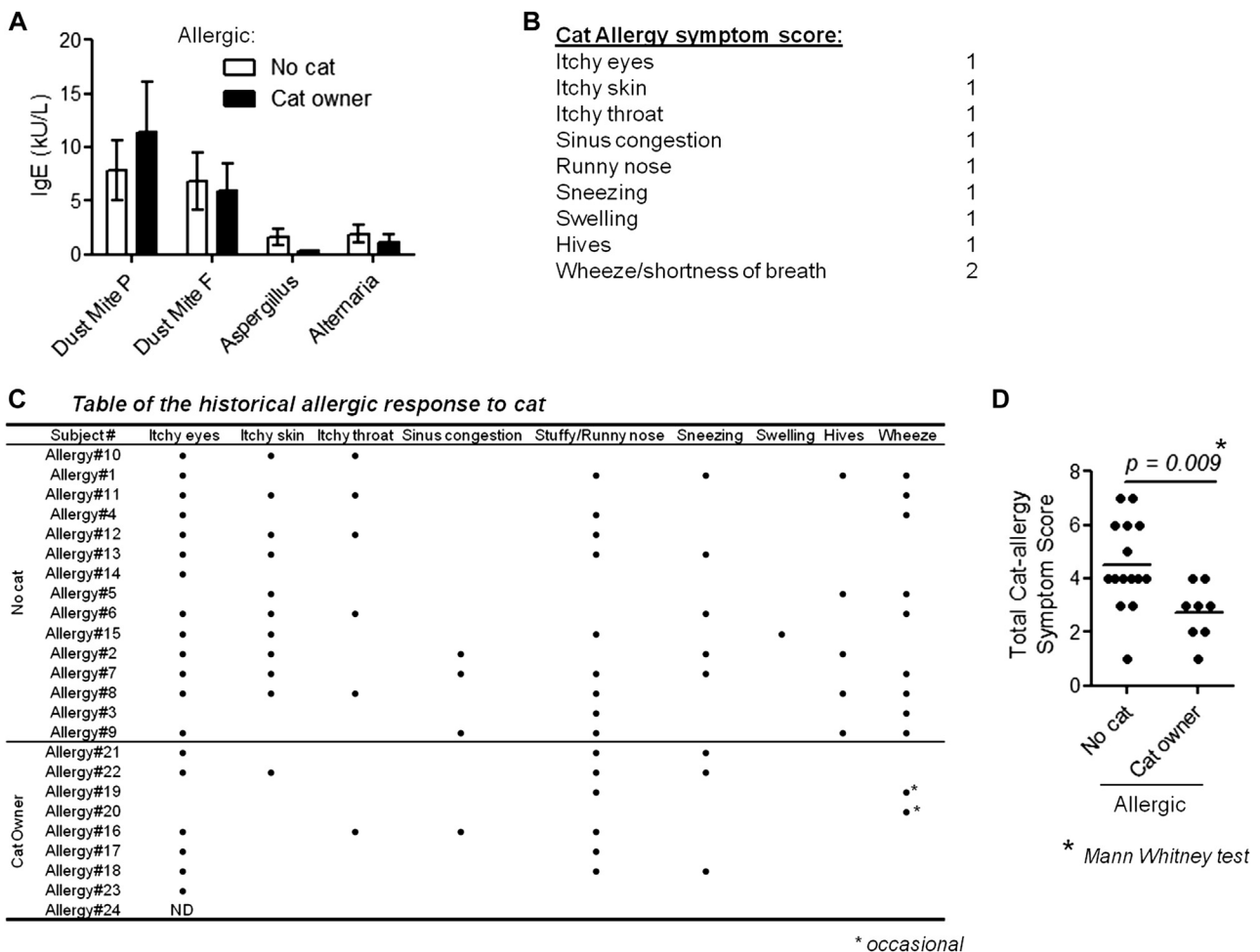


FIG 1. Attributes of subjects with cat allergy with or without cat at home. **A**, **C**, and **D**, Attributes of subjects with cat allergy. *Dust Mite F*, *Dermatophagoides farinae*; *Dust Mite P*, *Dermatophagoides pteronyssinus*. **B**, Symptom score system on cat exposure.

although allergic adults who own a cat have low sensitization, we cannot conclude that exposure to cat allergen is sufficient to “inhibit” the development of an allergic reaction. A longitudinal study that follows subjects from their first cat exposure will be needed to answer this question. However, the IgG₄-related low sensitization is clearly observed during natural chronic allergen exposure and also during allergen immunotherapy,^{6,7} which suggests a dynamic modulation of the allergen-specific immune response, including a counterbalance between anti-inflammatory IgG₄ and pathogenic IgE, on allergen exposure.

One of the objectives of our work was to understand T-cell responses during natural chronic allergen exposure. We observed accumulation of T_H2 cells, which facilitated IgG₄ production; T-cell tolerance induction was not observed.

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