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LETTER TO THE EDITOR

Are new pets really responsible for development of new allergies?

To the Editor,

We read with interest the article from Marenco-Arellano et al.¹ showing that introduction at home of a new pet (the less common hamster) increases the risk of allergic sensitisation and exacerbation of respiratory symptoms as a consequence of the exposure to this pet. Although it is indubitable that the presence of a common as well as an “exotic” furred pet at home greatly increases the amounts of pet allergens indoors, we think this criterion of direct exposure alone does not represent what really happens in “real life”.

First of all, hamster or other furred pet keeping alone should not be considered the main risk factor for development of allergic sensitisation.²

On the basis of our experience in the Naples area, only about 50% of atopic patients sensitised to common pets (cats/dogs) are directly exposed to these animals, whereas the other half are indirectly exposed (through the contact with cat/dog owners) or not exposed.³ If we consider allergic sensitisation and modalities of exposure to other furry animals such as rabbits, hamsters, rats, horses, cows and mice, the percentage of sensitised individuals exposed directly to these animals ranges between 0 and 33.3% whereas sensitised patients with indirect or no animal contact ranges between 66.7 and 100%.³

Secondly, the authors do not provide information on the presence of cat/dog at home (or on possible indirect exposure to dog/cat) in the three patients enrolled in the study. They reported only an allergic sensitisation to horse and cat in the second patient. This is a crucial point because we have recently shown that exposure and allergic sensitisation to common pets (cats/dogs) increases about fourteen times the risk of developing sensitisation to other furry animals such as rabbits, hamsters, rats, horses, cows and mice.⁴ As a consequence of these observations we suggested also a possible predisposition to develop multiple sensitisations to animal allergens (allergic phenotype?).⁴

A likely explanation for the high prevalence of mammals sensitisation in subjects without known contact with animals could be an indirect exposure (through transport of animal allergens by the clothes or other items of animal

owners into animal-free environments) or a cross-allergic reaction. Cross-reactivity among major/minor allergens of several mammalian species including horses, cows, dogs, cats, guinea-pigs, rabbits, rats and mice has been shown. These cross-reacting allergens are usually lipocalins which are small proteins binding small hydrophobic molecules and serum albumin, a thermolabile protein which constitutes a panallergen involved in milk, meat, and epithelia allergy.⁵

Taken together, this background suggests that cross-reactions and indirect exposure may induce allergic sensitisation to furry animals without previous contact. It is a relevant risk for patients because they are not aware about the possibility of inducing respiratory symptoms also after an occasional animal exposure. Finally, a recent study of Nordlund et al.⁶ has shown that in severe asthmatic children multisensitisation to more than three positive components to animal derived lipocalin (nMus m 1, rEqu c 1, Fel d 4, rCan f 1-2), kallikrein (rCan f 5), secretoglobulin (rFel d 1) is more frequent than in the controlled (non-severe) asthmatic group. The evaluation of specific IgE response to these “new” animal allergens has been carried out using microarray component-resolved allergy diagnostics.⁶

In conclusion, some other non-reported risk factors could explain the “new-onset” hamster sensitisation among patients enrolled by Marenco-Arellano et al. In other words, these subjects were probably already sensitised to hamster allergens (lipocalins) through previously reported mechanisms and the introduction of the hamster at home could have only triggered respiratory symptoms. This should be taken into account by susceptible individuals before acquiring a hamster as well as other less common furry pets. As a consequence, in individuals already sensitised to common pets, it could be recommended to perform SPTs/evaluation of specific IgE antibodies also to less common (“new”) mammalian allergens to identify the occurrence of allergic sensitisation and consequently to avoid future exposures to these animal allergens.

Authorship

All authors contributed equally in the writing and revision of the manuscript.

Conflict of interest and financial resources

All authors declare that they have no conflict of interest and that the study has been carried out without any financial support.

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