What Could the Role of Can f 5 Allergen Be in Dog-Sensitized Patients in "Real Life"?

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To the Editor:

We read with interest the excellent article by Basagana et al [1] showing the increasing significance of Can f 5 as a sensitizing allergen in dog-allergic individuals and the central role of component-resolved diagnosis in the evaluation of the sensitization profile of these patients. However, based on our clinical and scientific experience, we would like to provide some comments on this article in order to propose hypotheses on the effective value of prevalent or exclusive allergic sensitization to Can f 5 in "real life".

The authors did not indicate whether their patients were monosensitized to dog epithelia or also sensitized to other inhalant allergens. The latter may be responsible, at least in part, for clinical symptoms and, thus, affect the real value of sensitization to dog epithelia. Moreover, no information is available on modalities of exposure to dog epithelia or dog-derived materials in the study population. We previously showed that neither pet ownership (cat or dog) nor the presence of pets in indoor environments can be considered the main criterion when assessing exposure to animals. This condition leads to a potential bias of underestimation in clinical practice and in large epidemiological studies [2-4]. In fact, direct exposure to dogs (and cats) can happen via several direct and indirect settings [5,6,Liccardi unpublished data]. Indirect exposure may explain the common findings that dog allergens (Can f 1 and Can f 2) are present in indoor environments where dogs cannot be kept. Some studies have highlighted the increasing importance of allergic sensitization to Can f 5 (a kallikrein), which is an androgen-regulated protein expressed in the prostate and detectable only in male dogs (small amounts might also be present in dog epithelia). In addition, Can f 5 may be involved in human seminal plasma allergy [7]. Schoos et al [8] recently suggested that patients monosensitized to Can f 5 seem to tolerate female dogs. In fact, a 54-year-old woman reported respiratory symptoms only after exposure to male dogs [8]. Diagnostic procedures (in vitro and in vivo tests including the conjunctival provocation test) confirmed the absence of reaction to allergenic materials extracted from a female dog but not to those from a male dog. To our knowledge, no study has demonstrated passive transport of Can f 5 in dog-free indoor environments. Therefore, and considering that the source of Can f 5 is dog prostate, we believe that the main route of exposure to this allergen is direct exposure through dog ownership or direct contact elsewhere. In a previous study on a similar topic, we demonstrated that sensitization to urine allergens was exclusive to patients with a rabbit at home, whereas individuals exposed indirectly to rabbit-derived materials exhibited allergic sensitization only to epithelial allergens [9].

Unfortunately, Basagana et al [1] did not report information on modalities of exposure to dog (such as the presence or not of dogs at home) or on the gender of dogs, particularly in the 26 individuals reacting only to rCan f 5.

We believe that the availability of such information in individuals with a prevalent sensitization to rCan f 5 could be very useful for several reasons: (*a*) owners of a male dog may have to relocate the animal in the case of uncontrolled respiratory symptoms; (*b*) dog lovers, especially children, may wish to have a female dog at home; (*c*) some authors provide a possible explanation for the variable efficacy of dog allergen immunotherapy [10,11]; (*d*) excluding the similarity with the human prostatic allergen, Can f 5 should not cross-react with other mammalian panallergens such as albumins or lipocalins; (*e*) further studies should be planned to evaluate the presence of Can f 5 in dog-free indoor environments as a consequence of an eventual passive transport, as demonstrated with Can f 1 and Can f 2. The possible lack of passive transport could decrease the risk of indirect allergic sensitization resulting from the ubiquity of dog allergens, thus reducing the risk due to domestic exposure.

In conclusion, the article by Basagana et al [1] has the merit of highlighting the role of Can f 5 as a sensitizing agent that may be prevalent in a considerable percentage of dog-sensitized patients, thus confirming previous findings [12,13]. Essential information collected for the clinical history and further studies assessing the eventual ubiquity of Can f 5 could be useful when attempting to establish its value in real life. Paradoxically, a prevalent or exclusive allergic sensitization to Can f 5 could be a favorable event in dog-sensitized patients if compared with those sensitized to Can f 1 and Can f 2.

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Conflicts of Interest

The authors declare that they have no conflicts of interest.

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