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EDITORIAL

Measuring potency of allergenic extracts

The article published in this issue of Allergologia et Immunopathologia by Larenas et al.[1] is notable because it adds some sense to a confusing situation. Ever since the time when Noon and Cooke began to treat allergies with a process of injecting allergenic substances the quest for determining the strength and potency of these materials has been ongoing. From the beginning, one hundred years ago, there have been different measures of allergenic substances potency. There were Noon units, then protein nitrogen units using conventional methods of protein concentration and weight per volume based on the amount of crude antigenic material and the volume of extracting fluid (usually a buffered saline) added to it. None of these methods measured actual biologic potency, and for years allergists approximated strength by comparative skin testing in allergic individuals. After the discovery of IgE, and the development of tests which utilised specific anti IgE antibodies, in vitro methods of measuring potency existed along with the in vivo methods mentioned above. In the USA in the late 1980 s extracts began to be standardised using reference standards stored at the National Institutes of Health. Currently, the only standardised extracts are those of dust mites, cat, grass, ragweed and hymenoptera venom. All the others use w/v or PNUs as the measure of strength in the USA. European extract manufacturers have used multiple internal methods to determine the strength of their extracts. Some companies measure micrograms of major allergens and the information may be available, but methods are not identical by the various companies.[2] Also measuring the major allergen may miss minor allergens of clinical significance. While approximate calculations of comparative strengths can be made there have been no documented well-done studies to establish direct comparisons. This is the mission of Larenas et al. and they have previously published some comparative studies of European extracts.[3] These studies become important in comparing results with immunotherapy in the USA with those of other countries. From Larenas et al. it is clear that for Cat, *derm p* and Bermuda grass US extracts are generally more potent than European extracts which in turn were more potent than the Mexican extracts. One can speculate that the more potent extracts in USA when used for diagnosis find more positives than the weaker extracts and when used for treatment give successful results, possibly selecting patients for immunotherapy with lesser sensitivity, while in Europe fewer allergens are detected and fewer allergens used for treatment, and possibly fewer patients are treated. As more studies are done comparing available extracts with standards with regard to biologic potency the morass of multiple systems will be eliminated or at least better understood.

References

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