OPINION ARTICLE

Epidemiology of Contact Allergy in Europe: Current Situation and Outlook for the Future

La epidemiología de la alergia de contacto en Europa. Situación actual y perspectivas

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Contact allergies, and indeed contact dermatitis in general, are currently a major health problem. While their clinical manifestations are not usually very severe, they inevitably affect patients’ quality of life, interfering with both social relations and work activities and generating significant economic costs. It is crucial, therefore, to gather, analyze, and interpret all information that can help us to better understand the epidemiology of contact allergies in the general population and, subsequently, to propose preventive measures. The classic epidemiological approach is to obtain a representative sample of the population, study it (for example, by collecting demographic data, information on possible exposure to allergens, and previous episodes of contact dermatitis), and finally to perform diagnostic patch testing of individuals in that sample. This approach is rarely used, however, because it presents several drawbacks, some of which are summarized in the conclusions of the Glostrup studies. Among them are the following: a) high costs; b) practical difficulties, such as studying only a limited number of allergens; c) the need to recruit a large number of patients, usually several thousand, in order to make relatively accurate estimates, even with less common allergens; and d) limited agreement to participation, leading to the possibility of selection bias, which can undermine the main advantage of such population studies.

In view of these design difficulties, the epidemiological study of contact allergies relies greatly on the analysis of data from the practices of several skin allergy units or dermatology departments. This approach also presents certain advantages, such as lower costs, the possibility of ongoing epidemiological surveillance, and the high positive predictive value of performing patch tests in individuals with suspected disease. Contact allergy research groups in several countries have in fact recognized the potential value of such multicenter cooperative efforts.

Benefits of Clinical-Epidemiological Surveillance Networks

Unlike the results obtained from a single department or from sporadic special studies, the continuous collection
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and subsequent analysis of demographic and clinical data from several centers offer the following advantages:

1. Quality control: comparison of the results of a given dermatology department with the mean results for all departments in order to identify any divergence. This is both a consequence of and a prerequisite for further studies.

2. Subgroup analysis: only on the basis of a large enough sample can a higher risk of contact allergy in small, well-defined subgroups be identified.

3. Epidemiological surveillance: on the basis of sufficiently reliable data it is possible to evaluate time trends as well as regional differences in the prevalence of sensitization to certain allergens.

Quality Control

Each department takes responsibility for its own clinical practice, trying to follow the appropriate guidelines for all procedures, including patch testing.\(^5\)\(^5\) Confidence in the group’s method and results, however, can only be built by comparing them either with a standardized reference (obtained, for example, by using a “round robin” procedure to review entries) or with the results of the other departments. With regard to patch testing, both British and central European groups have successfully implemented quality control and standardization procedures.\(^6\)\(^7\) In European countries with centrally managed health care, the participation of contact allergy units in setting standards of care should facilitate dermatologists’ efforts to provide good medical care.

Subgroup Studies

Certain contact allergies are only important in small subgroups of the population, such as those working in certain occupations. From the statistical point of view, such subgroups can only be identified if they are part of a database (usually from multicenter projects) that is large enough to make it possible to detect characteristic patterns of contact allergy. Sample size is also important if certain statistical biases (sex, age, etc) are to be corrected for and scientifically valid conclusions reached.\(^8\) We have recently seen an example of this in the German Information Network of Departments of Dermatology (IVDK) with regard to the preservative methylchloroisothiazolinone-methylisothiazolinone (MCI-MI): we detected an abnormally high prevalence (around 10%) of sensitivity in a subgroup of patients whose common characteristic was nonoccupational exposure to paint. This finding served to alert the authorities. This has recently been seen in the case of some preservatives used in cosmetics.\(^10\)

Epidemiological Surveillance

Unlike quality control (which may be seen by some as a necessary evil), epidemiological surveillance is an exciting possibility offered by networks, as seen in the previous example. Surveillance involves the continuous collection and analysis of data; this makes it possible to identify both time trends and regional differences that can lead to further research or directly to preventive actions. Surveillance data need not be complete or totally accurate, and therefore a commitment to surveillance requires no more than the usual quality measures applied in clinical practice.

Increased frequency of sensitization to a substance is obviously an indication of an emerging problem that will alert researchers and, hopefully, the regulatory authorities. This has recently been seen in the case of some preservatives used in cosmetics.\(^10\)

As a result, limits on the use of MCI-MI in water-based paints were established. It was later confirmed that the levels of sensitization to the substance returned to normal in the subgroup of users.\(^9\) Clearly, this type of analysis is only possible with a) continuous data collection, b) ongoing analysis of the data, and c) sufficiently large databases.
Prospects

Despite some similarities, the result of a common European market, exposure to contact allergens may vary greatly from one European country to another, reflecting differences in industrial profile, regulations, and consumer habits. The discrepancies between the data obtained from skin allergy units from different countries\textsuperscript{8,12,24,25} can guide us to a better understanding of the different routes of exposure (although there may be methodological differences despite adherence to international guidelines).

In 1996 a European surveillance network was created to analyze routinely collected data in various contact allergy units in several European countries (European Surveillance System on Contact Allergies [ESSCA]; www.essca-dc.org). ESSCA has been fully operational since 2001, with several surveillance networks currently participating, among them the British Contact Dermatitis Group; the IVDK in Germany, Switzerland, and Austria; the Northeast Italian Contact Dermatitis Group; and, more recently, the 5 hospital dermatology departments affiliated with the Spanish Group for Research Into Contact Dermatitis and Skin Allergy/ Spanish Surveillance System on Contact Allergies (see the article by García-Gavin et al in this issue). The role of ESSCA is to provide ongoing feedback to its members concerning data collected and results obtained, and then, provided that the quality of these is adequate, to proceed to analyze the data, initially for surveillance purposes and subsequently for subgroup analysis as the data sample grows.

The ultimate goal is for ESSCA to act as a network of networks, unifying the data collected by national surveillance networks through their centrally coordinated efforts. As an alternative to the publication of data on an individual basis, the national surveillance networks, as well as the hospitals themselves (as is the case of St John’s in London and the Hospital Gentofte in Copenhagen), may contribute to European surveillance by either providing their data or publishing them following ESSCA guidelines (for example, after correcting for age and sex).\textsuperscript{8} Only by coordinating and standardizing the publication of results and by following established epidemiological and clinical procedures will researchers interested in contact allergy achieve the greatest impact on public health in this area in Europe.

Conflict of Interest

The author declares that he has no conflict of interest.

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References


