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CONTACT ALLERGIC DERMATITIS: THE NEED FOR CONSISTENCY IN DATA COLLECTION AND ANALYSIS

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Synopsis

The alarm that clinical skin allergy reports generate is in some cases greater than that generated by reports of carcinogenicity e.g. cigarette smoking. It would be necessary for the medical community to educate the lay pubblic that the reported prevalence rates are clinical and therefore of not direct relevance to the general population.
It would be also of paramount importance to educate the public to realise that a positive patch-test is not, of itself, proof that the current clinical conditions was caused by that allergen.

Riassunto

L'attenzione che il grande pubblico riserva agli articoli riguardanti le allergie cutanee è spesso superiore dell'analoga attenzione rivolta ai rapporti sulla carcinogenesi provocata dall'uso delle sigarette. Sarebbe auspicabile, quindi che la classe medica educasse il pubblico a valutare piu attentamente i dati clinici perché non sempre l'allergene evidenziato è il vero responsabile di un dato quadro clinico e non sempre la specifica reattività cutanea di pochi individui e estensibile ad una vasta popolazione.

There is currently a heightened awareness, on the part of the general public, of the problems associated with skin allergy, contact allergic dermatitis. This awareness, particularly in the area of cosmetics and toiletries, is in some respects a consequence of our consumer conscious society and i fuelled, at least in part, by reports in the popular media derived from clinical data. Data are published by the practitioner in medical Journals such as the Lancet and Contact Dermatitis, and these are now common hunting grounds for scientific journalists. The concern and alarm that these allergy reports generate, can in some cases be greater than that generated by reports of carcinogenicity e.g. cigarette smoking. I believe that, given this climate, it would he timely for the medical community to educate the lay public to realise that the reported prevalence rates are clinical data, relating only to the clinic of generation and therefore not of direct relevance to the general population. What then is a prevalence rate? Within the individual clinics the prevalence rates are an expression of the number of patients with patch positive responses relative to a given baseline clinical population. The choice off this baseline population varies from clinic to clinic and so therefore do the prevalence rates. As an example of how the prevalence rates vary with the choice of denominator, consider the following simple model. Figure 1 shows the schematic flow of patients presenting with dermatological problems to the dermatology clinics. If actual patient numbers (de Groot 1988) are now superimposed on this scheme we arrive at the situation shown in figure 2. Using as the denominator for our calculation of prevalence rates the total number of patients attending the clinic, the total number patch tested (suspected of contact allergic dermatitis) or the number diagnosed as suffering from cosmetic allergy we can calculate the prevalence rates shown in table 1. As you can see they vary by several orders of magnitude. If this exercise is repeated, for example, with the group of patients with positive patch test reactions to biocides we get a similar set of disparate results. This highlights one of the inherent problems in comparing data reported by different practitioners with that in the medical literature (Wooder and Koch 1988). In addition,

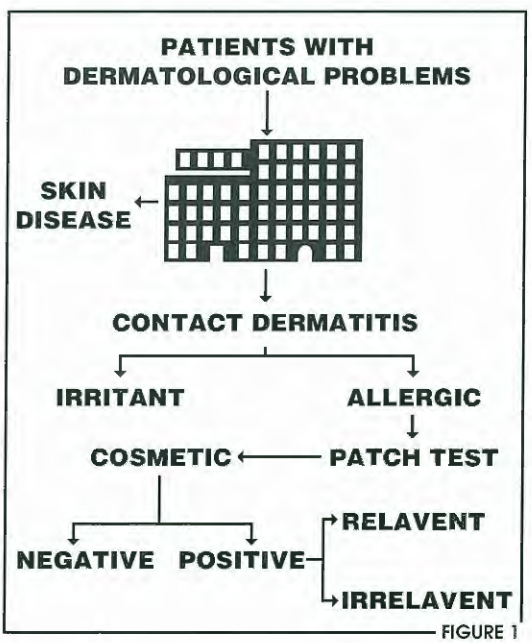

FIGURE 1

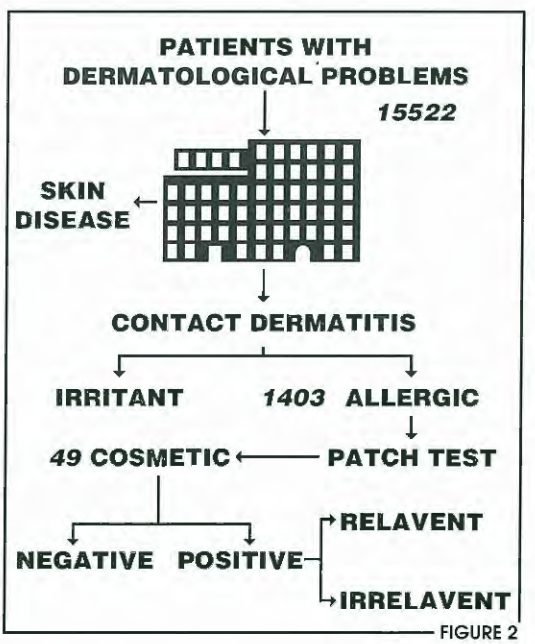

FIGURE 2

these prevalence rates relate only to the clinical population under study and not directly to the general public i.e. the measure of risk that we have comes not from the normal population but from patients patch-tested in the dermatology clinics. This obviously provides a biased population, as people only attend such clinics if they have skin problems, and the number of patch test positive reactions seen by dermatologists is bound to be greater than that you would expect to find in the normal population. Thus the high prevalence of positive patch-test reactions in patients attending dermatology clinics mean little more than the finding that there is a high prevalence of hyperglycemia/hypoglycemia in patients attending diabetes clinics. It is also of paramount importance that the public is educated to realise that a positive patch test to a particular allergen is not, of itself, proof that the current clinical conditions was caused by that allergen, i.e. whereas a negative test does not necessarily mean that the patient has a sensitivity which is relevant to their current clinical problem. Relevance of positive patch-test reactions has become a major area of concern for those working in the field of contact dermatitis. The reason that many positive reactions are not relevant is that the elicitation of sensitisation is not all or none phenomenon. Like the majority of effects seen in pharmacology and toxicology, skin sensitisation shows clear dose response relationships. Thus although the patient may react to a chemical in a patch-test at a particular concentration, they may never react to the much lower concentrations that they are exposed to in every day life. In other words, the patch-test response gives the most pessimistic measure of risk rather than the actual risk.

Thus it would be helpful if the term prevalence was used in a more precise way, i.e. either by carefully defining on each occasion, the group

Table I

EFFECT OF DENOMINATOR ON PREVALENCE RATES

BIOCIDE	N° POSITIVE	TOTAL PATIENTS	SUSPECTED CAD	COSMETIC ALLERGY	BIOCIDE ALLERGY
Benzoxonium Chloride	1	0.006	0.07	2.04	10
Chloroacetamide	1	0.006	0.07	2.04	10
Formaldehyde	1	0.006	0.07	2.04	10
Imidazolidinyl Urea	1	0.006	0.07	2.04	10
Kathon CG	3	0.02	0.21	6.12	30
Parabens	1	0.006	0.07	2.04	10
Quaternium-15	2	0.012	0.14	4.08	20

DeGroot 1989

to which it applies, and therefore the groups to which it does not apply, or better still agreeing a standardised definition that would allow genuine comparison of the valuable data from different clinics. In the same context I would also suggest that we need more information on the population prevalence rates. These additions, would I believe, greatly enhance good clinical and epidemiological practice.

Table II

EFFECT OF DENOMINATOR ON PREVALENCE RATES

CLASS OF INGREDIENT	N° POSITIVE	TOTAL PATIENTS	SUSPECTED CAD	COSMETIC ALLERGY
Fragrances	28	0.18	2.0	57
Biocides	10	0.06	0.71	20
Emulsifiers	4	0.03	0.3	8.16
Miscellaneous	9	0.06	0.64	18.37

DeGroot 1989

References

1. **De Groot AC (1988):** "Adverse reactions to cosmetics" *Thesis Rijksuniversiteit Groningen.*
2. **Wooder M.F. and Koch C (1988):** "Kathon CG - A 15 year experience" Poster presentation, *Forum Cosmeticum*, Basle.