

Allergy and consumer products; what constitutes an epidemic?

In this edition, Thyssen and White (1) refer to contact allergy epidemics to *p*-phenylenediamine in Asia. So what constitutes an epidemic in contact dermatitis?

The term 'epidemic' has been used as a potent description for infectious diseases; it alerts the public to danger, heightens physicians' awareness, and obliges regulatory or government agencies to take appropriate measures to protect the public. One working definition of an epidemic is 'the occurrence in a community or region of cases of an illness, specified health behaviour, or other health-related events clearly in excess of normal expectancy' (2). Modern use of the term 'epidemic' has also been used to cover a wide range of non-infectious conditions including heart disease and behaviour patterns such as smoking (2). An associated term is 'endemic' where cases of the disease occur in a particular population and 'hyperendemic' where there is a constantly high incidence of the disease in the population. Perhaps the term 'hyperendemic' is the most appropriate description for overall epidemiological data on hair dye allergy from the three continents as described by Thyssen and White (1).

While physicians can use a qualitative definition of an 'epidemic', there is no such luxury for legislators and regulatory authorities who require a quantitative definition to know when to act. Previously, these quantitative levels have always been arbitrary values. For example, in Burkina Faso, a threshold of 15 cases per 100 000 per week from active surveillance data was used as the 'epidemic threshold' so that special preventative measures (such as mass vaccination) could be instituted rapidly (2, 3).

When assessing the prevalence of contact allergy to chemicals, patch test data are most commonly used. Some argue that it is an unreliable guide, the population tested being selective and that it may grossly over estimate the prevalence in the general population. However, the relationship of contact allergy prevalence in a general versus an eczema population has been thoroughly reviewed in this journal; it is possible to estimate

contact allergy in the general population to different agents from data derived from contact dermatitis clinics. For *p*-phenylenediamine allergy, prevalence rates derived from clinics is estimated as between 2.1 and 3.2 times higher than in the general population (4). Even this may be conservative; in the largest screening of the normal population for *p*-phenylenediamine allergy, 2.7% of the adult Bangkok population was patch test positive compared with 4.6% in a Bangkok clinic (ratio of 1.7) (5).

If levels of contact allergy to agents in consumer products, such as hair dyes, reaches an arbitrary level deemed to be unacceptable to the general health of the public, what actions could be taken? Banning of some hair dye chemicals has been attempted in the past (6), but alternative aromatic amines have been used, and in any case the cultural demand for hair dyeing (and there is little alternative to aromatic amine use as a hair dyes at present) is too great. Prohibiting sales of hair dyes to individuals below a certain age is certainly one sensible measure. The most obvious measure is to review the allowable limit of aromatic amine agents such as *p*-phenylenediamine in hair dyes. Reduction of allowable limits of contact allergens such as nickel in jewellery and chromate in cement has resulted in significant reductions in allergy prevalence (7).

At present, there is no formal surveillance system for contact allergy to consumer products with the obligation to report to regulatory authorities. In Europe, cosmetics placed on the market are strictly regulated under legislation, namely Council Directive 76/78/EEC and its amendments. The Scientific Committee on Consumer Products (DG SANCO, European Commission) assess aspects of risk to consumer health and provide opinions for the Commission.

At some stage, we can envisage the setting up of a formal surveillance system. This surveillance system, consisting of highly specialized centres, geographically representative of the European population, would formally record their annual rates of contact allergy to chemicals

in consumer products that most commonly cause allergic dermatitis and report these to the European Commission. When levels of allergy to an agent reach an arbitrary level, which is estimated to reflect a threshold prevalence rate in the general population, then action could be triggered causing permitted levels of that substance (and related substances) to be reduced.

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