
Lessons learned from latex allergy

Natural rubber latex (NRL) allergy and hypersensitivity were first recognized in health care workers (HCWs) in the late 1980s. Since then epidemiologic data have identified at-risk groups and factors responsible for NRL sensitization.^{1,2} Both HCWs and children with spina bifida are the major recognized groups at risk for the development of type 1 latex allergy. A genetic atopic predisposition and exposure to relevant NRL allergens primarily in gloves are linked to the development of NRL hypersensitivity responses.³

As a result of research data that supported the identification of glove-related components, powder, protein, and chemical additives were measures instituted to deal with this growing and increasingly important health concern. Guidelines recommended the use of nonlatex gloves where the barrier protection was unnecessary and the use of low-protein, powder-free (LPPF) gloves where it was necessary.³⁻⁵ The implementation of these guidelines has resulted in a gradual decline in the prevalence of NRL allergy.^{6,7} It appeared that the application of these recommendations and guidelines was having the expected results.

In this issue of the *Annals*, Zeiss et al⁸ report a large epidemiologic study of latex hypersensitivity in Department of Veterans Affairs (VA) HCWs. Their study found a low prevalence of NRL allergic symptoms (133/1,950, 6.8%) and confirmed (11/1,959, 0.6%) latex allergy. In 1998, the VA hospitals had established a policy that mandated the restricted use of NRL gloves for universal precautions with only LPPF latex gloves. The small numbers of confirmed latex allergic individuals in this study was probably a direct result of institution of these guidelines.

There was a statistical positive correlation with general atopy, increased exposure to NRL gloves, and latex sensitization as identified by CAP assay result positivity. This confirmed generally accepted results of other studies.

However, several unresolved issues remain. Zeiss et al found that 122 (91.7%) of the 133 study participants had latex allergic symptoms but a negative CAP assay result. Many subjects (58%) reported glove dermatitis, a non-IgE-mediated reaction. Some individuals may have only attributed symptoms to latex exposure and allergy. Occasionally, there are patients with negative specific IgE test results with clinical allergy. These individuals are identified by a direct NRL glove challenge procedure.

In the study by Zeiss et al, 25 (1.3%) of the 1,959 subjects had positive CAP assay results to latex without symptoms. Asymptomatic latex sensitivity may be a false-positive test result related to the known extensive cross-reactivity with

NRL foods and inhalants. It is also possible that these subjects may develop a clinical latex allergy in the future.

This research study also identified a significant cluster of individuals with positive CAP assay results to latex (18/25, 72%) at their Chicago, IL, site. This high sensitization rate was likely related to increased exposure to NRL in air exchanges and ventilation systems. NRL glove exposure is the most likely source of this sensitization.

The data of Zeiss et al confirm research that has been performed during the past decade. However, we must guard against complacency. The recommendations of NRL policies and guidelines must continue to be followed not only by HCWs but also by everyone at risk for the development of NRL allergy. This includes food handlers, day care workers, and car mechanics, jobs in which powdered NRL glove use continues to grow. This population is at risk for the development of NRL allergy.

The nonessential use of NRL gloves by the food industry should be discouraged not only to prevent NRL sensitization but also to eliminate reactions in our latex allergic patients. We must recognize that the pool of NRL allergic individuals still exists just like other allergic individuals, such as those allergic to peanut or shellfish. These patients are at risk for hidden allergic reactions transferred by the NRL gloves of food handlers.⁹ Let's all learn from the HCW experience to prevent future epidemics of NRL allergy and hypersensitivity.

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