American Latex Allergy Association

Stop the Sensitization

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Latex hypersensitivity has been implicated in occupationally-induced urticaria, rhinitis, asthma, and anaphylaxis.[1-4] The disorder occurs in 8% to 12% of the healthcare worker population and is due to sensitization to a variety of latex proteins.[5,6] Before the Occupational Safety and Health Administration mandate concerning protection of workers who have contact with body fluids, contact dermatitis, primarily caused by latex glove chemicals, was the most common form of adverse immune reaction to gloves in the healthcare worker population.[7]

In recent years it has become clear that latex protein, largely carried on the cornstarch used as donning powder in gloves, is inhaled and causes allergic sensitization.[8] Alternatively, the sensitizing antigens of latex may penetrate the skin after being solubilized by sweat or may enter through the skin inflamed by the contact dermatitis reaction. In fact, it appears that contact dermatitis often precedes other skin or respiratory symptoms in the healthcare worker.[9] Further, in recent years, exposure to latex protein antigens has been magnified by the marked increase in the use of examination gloves over surgical gloves, pointing to the increased exposure to latex from examination gloves as the major source of the rising rate of allergic sensitization. It would thus seem reasonable and immunologically sound to decrease glove allergenicity and worker exposure. This could be accomplished by elimination of glove powder or by use of alternative protective materials.

Recent studies measuring latex allergens in natural rubber latex gloves have demonstrated wide differences in allergen content among different brands.[10,11] Air sampling of environments in which powdered gloves with high protein content were used detected greater amounts of airborne, and thus inhalable, allergen than in environments in which low-allergen, especially low-allergen non-powdered latex gloves were used.[12,13]

Individuals working in environments where they use high-allergen gloves have more symptoms than those in environments where measurable latex protein antigen levels have been reduced by the use of non-powdered or latex-free gloves.[12,13] Furthermore, when patients allergic to latex practice strict latex protein avoidance, symptoms decrease, and evidence of immune sensitization, as manifested by skin reactivity to latex, diminishes.[13-15] Most important; however, when sensitized healthcare workers continue to be exposed to latex, asthma may develop, which may progress and persist even after strict avoidance of the workplace and all nonhospital sources of latex. Once established, the asthma may be triggered by nonspecific stimuli, and pulmonary function may remain permanently impaired even after leaving the healthcare profession, as in other cases of occupational asthma.[16] Thus healthcare workers have latex sensitivity that may result in progressive asthma, ending their career.

To control this serious and potentially disabling occupational disease, the process of sensitization, as well as treatment, of those healthcare workers already sensitized needs to be addressed. Low-antigen, nonpowdered latex gloves reduce inhalation of latex allergen and thus should significantly reduce the rate of sensitization of exposed healthcare workers and the progression of allergic disease in those already sensitized. All healthcare and especially hospital facilities should use only synthetic nonlatex or low-antigen, powder-free latex examination and surgical gloves. Reducing inhalation or contact with latex antigen should reduce sensitization and preserve functional capacity in health care workers who are at risk of sensitization. Because sensitized workers react to nonpowdered latex gloves,[17] they should be given nonlatex gloves with the same barrier properties as latex. A number of manufacturers market such gloves (Table 1). However, recent powder-free latex glove storage difficulties with generation of heat may have compromised the barrier properties of such gloves, perhaps related to chlorination.[18] Thus care should be taken in the choice of gloves. In spite of this problem, the universal use of nonlatex examination gloves with adequate barrier protection may be desirable because the majority of gloves used in healthcare are currently latex. If we are to reduce the problem of latex sensitivity in the nation?s healthcare workers, measurers shown to be effective need to be instituted as soon as possible.

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