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The American Academy of Allergy Asthma and Immunology held its annual conference in Denver, Colorado in March. The following are some of the abstracts presented. (Note: All of the abstracts presented are available in full-text form in the Journal of Allergy and Clinical Immunology, as well as on the AAAAI website:**http://www.aaaai.org**[1])

A Four-Year Prospective Study To Evaluate the Efficacy of Glove Interventions In Preventing Natural Latex Sensitization in Healthcare Workers at Two Hospitals

Kelly, K. J., et al.

Background: Cross-sectional studies have implicated exposure to powdered natural latex gloves in development of latex sensitization (LS) among healthcare workers (HCW). Starting in 1998, we prospectively determined the incidence of latex sensitization before and after glove interventions in HCW at two hospitals.

Objectives: (1) To determine the initial prevalence of LS among HCW in Hospital A (used synthetic gloves and powdered latex surgeon and prepackaged kit gloves) and in Hospital B (used powdered latex examination, surgeon, and prepackaged kit gloves). (2) To determine the incidence of LS before and after glove interventions.

Methods: HCW underwent initial and yearly latex skin prick testing (clone 600 IND #6365). In Hospital A, the glove intervention consisted of replacing all gloves with either powder-free latex or synthetic gloves, and in Hospital B consisted of replacing all gloves with powder-free latex gloves.

Results: Between 8/98 and 8/02, participating HCW (A-305, B-500) completed 2,775 serial skin tests (A-972, B-1803). Initial prevalence of LS was A-18/305 (5.9%) and
B-21/500 (4.3%). Prior to the glove interventions, HCW from both hospitals developed LS (A-2/257, B-5/448) over 12 months, but after the glove interventions, no HCW developed LS during 32 months of observation. Before the interventions, no HCW reverted from skin test positive to negative; afterward four reverted.

Conclusions: LS is associated with use of powdered latex gloves in hospitals and can be controlled by the exclusive use of powder-free latex or synthetic gloves.

Primary Prevention of Natural Rubber Latex Allergy in Health Care Workers

Allmers, H., et al.

Rationale: The development of occupational asthma (OA) and allergic skin reactions due to natural rubber latex (NRL) allergy are risks for healthcare workers (HCW). This study assesses the effects of intervention to reduce the incidence of NRL allergy in personnel working in acute care hospitals insured by the German statutory accident insurance company for healthcare workers ?Berufsgenossenschaft fore Gesundheitsdienst und Wohlfahrtspflege? (BGW) by switching to powder-free NRL gloves.

Methods: We analyzed the annual numbers of reported suspected cases of NRL- caused occupational allergies since 1996 and the amount and type of gloves used in German acute care hospitals since 1986.

Results: The purchase of powder-free NRL examination gloves exceeded powdered gloves for the first time in 1998. The incidence of suspected occupational allergy cases caused by NRL rose until 1997 (OA) and 1998 (skin allergies). By 2000, there was a 69% decrease of new skin allergy cases, and by 2001, there was an 86% reduction of reported new cases of OA.
Conclusions: Despite the effect of increased recognition of NRL allergies, the introduction of powder-free gloves has been associated with a decline in the number of suspected cases of occupational asthma and allergic skin symptoms caused by NRL in German acute care hospitals. These results indicate that primary prevention of occupational NRL allergies can be achieved by switching to powder-free NRL gloves in healthcare facilities.

Why Do Parents Not Use EpiPens When Children Experience Anaphylaxis?

Dilay, D. J. & Roberts, J. R.

Rationale: Failure to use epinephrine early in anaphylaxis has been linked to fatalities. We wondered why well-informed parents often failed to administer an EpiPen when it was indicated.
Methods: Members of a support group for parents of children with anaphylaxis responded anonymously to a mail-in survey regarding their experiences with use of EpiPens.
Results: Of 75 respondents, 41 reported one or more allergic reactions. Eleven (27%) had used the EpiPen. Of the 30 who had not, 21 (72%) felt that the reaction had not been severe enough to warrant it. Other reasons given included: hospital close by (8), new trigger causing reaction (6), concern regarding side effects (4) or pain (3), EpiPen not available (2), advice from medical personnel (2), and frightened child, uncertainty whether symptoms were allergic, and perception that the responsible allergen would cause only a mild reaction (1 each). Eight out of thirty (27%) had urticaria/angioedema only. Twenty-two out of thirty (73%) had respiratory distress (11), dysphonia/dysphagia (12), vomiting/abdominal pain (11), or leth-argy (10). All 11 patients given the EpiPen were taken to ER. Sixteen out of thirty not given EpiPen went to ER. Fourteen out of thirty did not receive EpiPen, nor ER assessment. Six out of fourteen had urticaria/ angioedema only. The other 8 (57%) had respiratory distress (4), vomiting (3), and/or lethargy (4).
Conclusions: Even when well educated regarding anaphylaxis, it appears that parents deny or fail to appreciate the severity of allergic reactions, leading to hesitancy to use the EpiPen and failure to seek ER treatment.

Parent and Adolescent Perceptions on Food Allergy

Noone, S.A., et al.

Rationale: Adolelescents are at highest risk of death from food allergy, possibly because of their perceptions regarding their illness. This study was undertaken to identify and compare quality of life issues regarding food allergy in teens/pre-teens and their parents.
Methods: A self-administered 29 question survey was completed independently by parent-teen/pre-teen pairs at three Food Allergy and Anaphylaxis Network patient conferences.
Results: Thirty-seven pairs particiated (teens: 19 female, mean age 13 years, range 11-19 years, 26 with multiple food allergies). Parents reported that 100% were prescribed epinephrine [concordace rate (CR), 97%]. Parents underestimated that their children would self-administer epinephrine (53%) compared to teen responses (73% would, CR=54%). Unfortunately, 50% reported being ?harassed? about their allergies; parents suspected a similar proportion (57%) with poor concordance (62%). Social activities were curtailed up to half the time for 46% of teens; parents perceived a similar rate (45%) with poor concordance (53%). When asked about the hardest/worst part of their disease, teens named items categorized by social isolation (94%), while parents identified issues of fear/death (50%, p **Conclusions:** Teens may be at higher risk for fatal food allergies because they are reluctant to use medications, and impacted more by social ramifications than by fear of reactions. Parents may not appreciate these views in their children. These topics should be addressed in anticipatory guidance for food-allergic teens.

Cross-Reactive Carbohydrate Determinants (CCD): Mimickers of Allergy

Bridts, C. H., et al.

Rationale: To investigate the prevalensce of anti-CCD-IgE in healthy controls and patients allergic to pollen, house dust mite (HDM), natural rubber latex (NRL), and hymenoptera venom. To study the contribution of anti-CCD-IgE as a cause of clinically irrelevant IgE for NRL and apple.

Methods: IgE antibodies were quantified by Immuno-CAP. Skin prick tests (SPT) were performed with HAL extracts, except for bromelain (500 micrograms/milliliter, Sigma-Aldrich). Patients were identified as anti-CCD-IgE positve if they had a negative SPT and positive IgE for bromelain. Sera containing IgE against apple or NRL were classified as true-positive or false-positive according to the presence or absence of an oral allergy syndrome (OAS) or NRL-induced anaphylaxis.
Results: No anti-CCD-IgE was found in controls (n=12), patients monosensitized to NRL (n=19), pets (n=7), HDM (n=28), or birch pollen (n=32). In contrast, anti-CCD-IgE was present in 21% (4/19) of patients with grass pollinosis; in 25% (4/20) of patients with combined grass and birch pollinosis; in 4/8 of patients with combined grass, tree, and weed pollinosis (p=0.03); and in 14% (4/28) of patients with venom anaphylaxis. False-positive NRL individuals had a higher prevalence of anti-CCD-IgE than NRL allergic patients [78% (18/23) versus 0% (0/19), p **Conclusions:** Sensitization to CCD, caused by grass pollen or hymen-optera venom allergens, can mimic NRL and apple allergy. Patients monosensitized to NRL or birch pollen showed no anti-CCD-IgE.

Allergy Prevalence Increase in Latex-Sensitized Spina Bifida Patients

Romeira, A. M., et al.
Purpose: The aim of the present study was to determine the prevalence of latex sensitization and allergy in spina bifida patients followed in our Immunoallergy Department, where latex eviction is recommended, for a period of 18 months (January 2001 to June 2002), relating these results with the ones obtained in 1997.
Methods: All patients performed a questionnaire, skin prick tests with five commercial latex extracts (ALK-Abello, Bial, Leti, Lofarma, and Stallergenes), common aeroallergens and foods cross reacting with latex.
Results: We included 52 spina bifida patients, aged 10 months to 23 years (mean age: 8.9 years) with female/ male ratio of 1.4/1. The prevalence of latex sensitization was 46%. Of the 24 sensitized patients, 13 (54%) had clinical symptoms upon latex exposure: mucocutaneous-92%, respiratory-46%, and ocular-31%.
Conclusions: In spina bifida patients, we found a high prevalence of sensitization and allergy to natural rubber latex. A more than four-fold increase of the prevalence of clinical symptoms of latex-sensitized patients enhances the difficulties of performing strict avoidance measures of latex allergens.

Latex-Specific IgE Assay Sensitivity Enhanced Using Hev b 5 Enriched Latex Allergosorbent

Hamilton, R. G., et al.
Rationale: All clinically available FDA-cleared serological assays for latex-specific IgE display less than ideal diagnostic sensitivity as a result of allergenic epitopes from multiple Hevb allergens that are either missing or denatured during the allergosorbent manufacturing process (JACI 2002; 109:S259, abstract 790). We have studied the extent of performance enhancement in IgE anti-latex detection using a recombinant Hevb5-enriched allergosorbant.
Methods: Serum from 68 latex allergic (clinical history [Hx] positive, Greer investigational skin test [G-ST] positive) and 48 non-latex allergic (Hx negative, G-ST negative) were analyzed in the Pharmacia CAP System using the standard latex (K82) and Hevb5-enriched latex (K85-S) allergosorbents.
Results: Based on this cohort of subjects, the diagnostic sensitivity of the CAP System increased significantly (p2-fold increase in quantitative kIU/L levels of IgE antibody detected in sera from 37% of the Hx/G-ST positive subjects, with one third of these representing a seroconversion from negative-(K82) to postive-(K82-S).
Conclusions: The enrichment of the latex CAP allergosorbent with recombinant Hevb5 results in modest improvements in diagnostic sensitivity and qualitative latex-specific IgE antibody detection, with no appreciable loss in diagnostic specificity. Even so, the Pharmacia CAP System still fails to detect latex-specificIgE antibody in up to 38% of latex Hx and G-ST positive subjects. Supplementation of native latex allergens with other recombinant allergens should be a future manufacturing goal.

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[1] http://www.aaaai.org