

**15th Annual Meeting of the
American Contact Dermatitis Society
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Oral Presentations

METHYLDIBROMO GLUTARONITRILE IN LEAVE-ON PRODUCTS

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The rapidly increasing frequency of contact allergy to methyldibromo glutaronitrile (MDBGN) is of concern. This study investigates the allergic response elicited in pre-sensitized individuals from exposure to a leave-on product preserved with 50 or 100 ppm MDBGN. *Material and methods:* Eighteen volunteers with contact allergy to MDBGN and 10 healthy controls were exposed to repeated open application tests (ROAT) with two moisturisers with a

high and a low lipid content, respectively, both containing MDBGN in a concentration of 50 ppm. The ROATs were performed on the left and the right side of the neck for 14 days, or until a positive reaction was seen. If a positive reaction did not develop within the first 14 days the application with two analogous moisturisers containing 100 ppm MDBGN continued for further 14 days.

Results: Eleven (61.1 %) developed dermatitis on the test area, and 10 (55.5%) developed a positive reaction to the moisturiser with 50 ppm MDBGN. Reactions to the low-lipid moisturiser were the most frequent. The controls all had negative ROATs.

Conclusion: A concentration of 50 ppm MDBGN in a leave-on product was found to elicit an allergic reaction in more than half of sensitised individuals when applied on the neck.

THE SENSITIZATION POTENTIAL OF FRAGRANCE INGREDIENT 3 and 4-(4-HYDROXY-4-METHYLPENTYL)-3-CYCLOHEXENE-1-CARBOXALDEHYDE (HMPCC)

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3 and 4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde (HMPCC, CAS Nos. 31906-04-4 and 51414-25-6) is a fragrance ingredient with a sweet, light and floral odor used in all types of cosmetic and household products. Currently, the use of this material in all skin contact leave-on and rinse-off products is limited to 1.5%. It is limited to 15% in all non-skin contact products (International fragrance Association, 2003). Three guinea pig studies – a modified Draize and two Magnusson and Kligman maximization tests – and a murine local lymph node assay show that the material has a weak potential to induce skin sensitization. The results from human predictive tests (numerous repeated insult patch tests and one human maximization test) conducted at various concentrations, also predict that the material is a weak skin sensitizer. The weight of evidence from animal and human predictive tests show that a no-effect level for sensitization is 4000 ug/cm². The diagnostic patch test data show that the material is a moderate to strong skin sensitizer. A quantitative dermal sensitization risk assessment for HMPC, which incorporates different product categories, is reviewed.

QUALITY OF LIFE IN PATIENTS WITH ALLERGIC CONTACT DERMATITIS: AN ANALYSIS BY GENDER, ETHNICITY, AGE, AND OCCUPATION

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Objectives: This study was conducted to investigate the relationship between quality of life (QoL) scores for patients with allergic contact dermatitis (ACD) and confounders, such as gender, ethnicity, age, and occupation.

Methods: A total of 428 subjects with ACD were, at varying times after diagnosis, mailed a QoL questionnaire modified from Skindex-16 to include an additional 5 items pertaining to occupational impact. The QoL scores were analyzed by gender, ethnicity, age, and occupation to ascertain factors that impact QoL in subjects with ACD.

Results: Three of the four confounders examined have a significant connection with QoL in patients with ACD. Non-Caucasians had significantly worse QoL scores than Caucasians within the functioning scale, and had more emotional distress secondary to their disease. There were no statistically significant gender-related differences in QoL scores, although females felt a higher degree of embarrassment and depression. Age significantly impacted items within the functioning and occupational scales, with subjects nearing retirement age and older reporting better QoL. In contrast, younger subjects, especially those in the 5th decade, were more likely to have difficulty pursuing daily activities, have more fear that they might need to leave their jobs, and have more concern for their financial futures. Office workers, students, and homemakers were primarily diagnosed with non-occupational ACD, while more industrial, health care and other wet workers suffered from occupationally related ACD. In the analyses of QoL by occupation, industrial workers reported significantly more impaired QoL than subjects in other professions.

HAND DERMATITIS IN MESSAGE THERAPISTS

Glen H. Crawford, M.D., Kenneth A. Katz, M.D., M.Sc., William D. James, M.D., University of Pennsylvania, Philadelphia

Background: Anecdotal reports have linked cases of hand dermatitis among massage therapists to the use of aromatherapy products. Massage therapists also encounter occupational exposures known to increase risk of hand dermatitis. The prevalence and risk factors for hand dermatitis among massage therapists have never been studied.

Objective: To determine the 12 month period prevalence of hand dermatitis among massage therapists in the greater Philadelphia region, to investigate a potential association between hand dermatitis and the use of aromatherapy products, and to study potential associations with other known risk factors for hand dermatitis.

Results: The number of respondents was 364 (59%). The 12 month period prevalence of hand dermatitis in included subjects was 15% by self-reported criteria and 23% by a symptom-based method. In multivariate analysis, statistically significant independent risk factors for self-reported hand dermatitis included use of aromatherapy products in massage oils, lotions, or creams (OR 3.27; 95% CI 1.53 – 7.02; $p < 0.01$); and history of atopic dermatitis (OR 8.06; 95% CI 3.39 – 19.17; $p < 0.01$).

Conclusions: The prevalence of hand dermatitis in massage therapists is high. Significant independent risk factors include use of aromatherapy products in massage oils, creams, or lotions; and history of atopic dermatitis.

UPDATE ON ALLERGENIC METALS IN COSMETICS

Kelly DeHart, Susan T. Nedorost M.D. University Hospitals of Cleveland/Case Western Reserve Univ.

Introduction: Contamination of cosmetics has been reported to be a source of dermatitis for patients allergic to metals. We investigated the current status of allergenic metals in cosmetics, especially those containing mica, which like metals, is an earth mineral.

Methods: A dimethylglyoxime (DMG) test for nickel and a 2-nitroso-1-naphthol-4-sulfonic acid test for cobalt were used to determine if these metals were present in various forms of cosmetics, especially glittery items. Cosmetic grade pure mica was also tested. Inductively coupled plasma mass spectrometry was performed to confirm absence of nickel at more than 2.5 ppm on 3 products with equivocal (very late positive) DMG results.

Results: All twenty-four cosmetics and the mica samples were negative with chemical spot tests for nickel and cobalt after 1 minute. The MSDS for mica did not list nickel or cobalt, but did list chromium as a possible component.

Conclusion: Nickel and cobalt allergic patients do not need to avoid cosmetics. Chromate allergic patients may react to mica containing products. We have also observed that patients with eyelid dermatitis often report exacerbation with mica containing cosmetics, probably due to mechanical irritancy; we suggest prolonged avoidance until recovery is complete.

BUILDING A PATCH TEST CLINIC

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Patch testing is critical to evaluation and treatment of contact dermatitis. Time, expense, and antigen accessibility may even seem prohibitive.

Objective: To develop a patch test clinic which is financially viable and clinically gratifying.

We started by purchasing supplies, hiring a detail-oriented nurse, and ordering antigens through Chemotechnique (CT). Pharmacy prepared additional antigens not available through CT. We then started our patch test clinic, testing 6 to 8 patients per week.

The initial start-up costs were approximately \$13,000. Antigents comprised most of the expense at \$9,000. At .625 FTE, the average nursing cost with fringe benefits is \$89 a test. The average number of patches per test is 82 for a total direct cost of \$159.00/test. At

\$24.00 per patch (comparable pricing), the average charge per test is \$1,968 and the average collection is \$1,141.00/test. Subtracting the direct expenses and allowing 45% of the revenue for indirect expense, the expected profit per test is \$470 or \$124,000 over 44 weeks.

These numbers reflect our clinic's first 7 months. We anticipate both collections and patient numbers to increase over time.

Conclusion: Developing a viable patch test clinic is possible, challenging and gratifying.

OCCUPATIONAL DISEASE SPECIALTY CLINIC – A NEW MODEL OF CARE

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Optimal care of a worker with occupational disease remains a challenge. A number of health service and workplace issues may impede early diagnosis and timely, safe return to work. We developed a model of specialty care at the WSIB to address these issues, initially focused on injury.

Our recent work in contact dermatitis has highlighted the importance of early diagnosis and identified a number of health service related barriers. Supported by this evidence, an Occupational Disease Specialty Clinic, including contact dermatitis program, has been created at St. Michael's Hospital.

The staffing includes dermatologists and occupational medicine physicians, nurse practitioners, an occupational hygienist, patch test technician and chemist. Dermatologists with an interest in contact dermatitis have been recruited. In addition to the diagnostic components, attention is paid to return to work, with assistance from the nurse practitioner and occupational hygienist. There is a strong customer focus to the service with a staff person devoted to facilitating the worker's flow through the program and patient satisfaction information routinely collected. The program is linked to medical education initiatives and our new Research Centre in Occupational Disease. This work is supported by research grants and a clinical and educational services contract from the Ontario WSIB.

DOCTOR, BACITRACIN BEWARE

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In 1943 it was discovered that the decanted supernatant fluid from the novel Tracey I strain of *Bacillus subtilis* contained powerful wide spectrum antibiotic action: 'bacitracin'. As a result of its nephrotoxicity, bacitracin became marketed for topical use. Sixty years later, it has produced both immediate (IgE) [over 16 cases reported] and delayed (cell mediated) reactions. Yet, it is over the counter in a variety of products [antibacterial topical ointments, cosmetics (Obagi, Nuderm), additives (FascianTM)], continued to be used routinely in dermatology practices and advocated for in the major dermatologic journals, by state regulation boards and in television advertising.

In a randomized, double-blinded, prospective trial of 922 patients with 1249 surgical wounds, Smack *et al.* compared the effect of white petrolatum versus bacitracin ointment. White petrolatum proved safe and effective with no ACD, compared with 0.9% of bacitracin group, while no statistically increased wound infections or compromise in healing results occurred [*JAMA* 1996; 276(12):972-1028].

Recently, Saripallie *et al.* reported bacitracin as #2 (of 50) most common allergens between 1995-2001 [*JAAD* 2003; 49 (1):65-69]. Dermatologists need to help educate physicians and surgeons of the health risk of routine bacitracin use for clean surgical procedures and advocate for the use of white petrolatum to reduce the chance of adverse reactions, including ACD and life-threatening contact urticaria and anaphylaxis.

POTASSIUM DICHROMATE: A PROMINENT ALLERGEN

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Background: Potassium Dichromate is a well-recognized contact and occupational allergen. The NACDG noted an increasing incidence of patch test reactivity to potassium dichromate in their report of 5833 patients studied from 1998-2000 (5.8%) with reported definite relevance of 2.4%.

Aim: To determine the reaction rate on patch testing to potassium dichromate at our institution (Mayo clinic Rochester, Scottsdale, and Jacksonville) during the same time period.

Methods: Patients were patch tested at Mayo Clinic between 1998-2000 and the allergic reaction rate was compared to that of the NACDG using a chi-square test.

Results: At Mayo Clinic Rochester, Scottsdale, and Jacksonville, 1273 patients were tested to potassium dichromate yielding an allergic reaction rate of 7.8% (95% CI, 6.3 to 9.3%; $p=0.008$), with 6.8% relevance.

Conclusion: The reaction rates to potassium dichromate at Mayo Clinic are higher than NACDG.

ALLERGIC CONTACT DERMATITIS TO DIPHENYL METHANE DIISOCYANATE IN A SCULPTOR

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Allergic contact dermatitis to diisocyanates is relatively uncommon. Diisocyanates undergo poly-addition reactions with diols to produce various polyurethane compounds. The most common cyanates implicated in allergic contact dermatitis include dicyclohexamethane 4,4 diisocyanate, toluene diisocyanate, diphenyl methane diisocyanate (MDI), and diaminodiphenylmethane (MDA) which is used as a catalyst in polyurethane production. Laboratory technicians and industrial workers involved in the production or use of moldings, textile or floor coatings, foam spraying, and wool processing have been reported to have had contact dermatitis to various cyanates confirmed by patch testing.

We present a case of allergic contact dermatitis that developed in a patient using a polyurethane foam as a medium for sculpting. A 21 year old female presented with a 6 month history of an acute dermatitis involving her arms and face severe enough to cause periorbital and diffuse facial swelling. She works as a part-time sculptor in a studio where she handles polyurethane enamels and foams as well as clay and epoxy resins. The particular foam she mixed for sculpting contained methylene diphenyldiisocyanate. Patch testing revealed positive reactions to MDI, MDA, isophorondiisocyanate, and epoxy resin.

This case demonstrates a unique occupational cause of allergic contact dermatitis along with review of polyurethane induced contact dermatitis.

OCCUPATIONAL HAZARDS: AIRBORNE ACD TO AZITHROMYCIN

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Azithromycin is an azalide antimicrobial agent that is chemically related to erythromycin. Its production is a three-stage process. As a result of aerosolization of the chemical's particles employees are required to wear a protective apparatus and a filtered respirator.

We report three male patients, employed in the blending department, at a pharmaceutical company with airborne contact dermatitis to azithromycin. These patients are involved in the production of different drugs and give a clear correlation between the onset of symptoms and handling azithromycin. The patients provided us with pure azithromycin as well as the compounded product, which were diluted to 5 and 10% concentrations in petrolatum. Two cases were confirmed allergic contact dermatitis by patch testing, and a third was felt to be irritant contact dermatitis.

Airborne allergic contact dermatitis to azithromycin occurred despite protective attire. Other causes of airborne contact dermatitis are reviewed in this report.

ORAL EROSIONS AS A MANIFESTATION OF CONTACT ALLERGY TO CINNAMON MINTS

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A 37-year-old woman with "reactive" arthritis, a 1-year history of episodic, painful palatal and buccal erosions, a positive indirect immunofluorescence (IIF) test on monkey esophagus (titer 1:160) and a presumptive diagnosis of pemphigus vulgaris was referred for evaluation. Subsequent IIF and ELISA testing were negative and biopsy of an infrequent active lesion was not diagnostic of a specific disease. On one occasion, the patient presented with grouped vesicles and superficial erosions on the left tonsil. Cultures for herpes simplex were negative, and a diagnosis of aphthous stomatitis was made. Colchicine (0.6 mg bid) was instituted and the frequency of lesion development decreased. After discontinuation of colchicine, the patient noted that lesions developed shortly after exposure to cinnamon-flavored breath mints. In retrospect, she recalled frequent use of mints coincided with increased disease activity. Patch testing revealed positive reactions to fragrance mix (1+), cinnamic aldehyde (1+) and crushed mints (1+). Contact allergic reactions to components in breath mints should be included in the differential diagnosis of atypical oral erosions.

BASIC RED 46: AN IMPORTANT ALLERGEN IN FOOT DERMATITIS?

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Background: 2 patients with severe foot dermatitis were seen in 1998. Extensive patch testing to determine the cause of their dermatitis revealed only strong reactions to Basic Red 46 (BR 46), a cationic azo dye. As they wore the same brand of work boots, their boots were initially suspected as causing the eruption.

Results: Eventually testing was performed on the workers' boots and socks, utilizing chromatography and mass spectrometry. BR 46 was found to be present in the patients' dark colored, acrylic/acrylic blend "loop knit" style socks.

Subsequently, 15 additional patients allergic to BR 46 were identified. On telephone follow up, 12/17 had noted improvement of their foot dermatitis when they stopped wearing coloured socks.

In 555 patients attending a patch test clinic, with the addition of BR 46 to the patch test series, the prevalence of BR 46 allergy was 1.2%. There was a highly significant association between the presence of foot dermatitis and a positive BR 46 reaction.

In the last 2 years, 7 more cases have been identified.

Conclusion: In Melbourne, BR 46 in acrylic/acrylic-blend socks appears to be an important cause of foot dermatitis.

A CASE OF CONTACT LEUKODERMA TO PHENOLIC RESINS IN A CAR BRAKE LINE ASSEMBLY WORKER

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Contact leukoderma (or contact vitiligo) is defined as a complete depigmentation often without preceding inflammation. Exposure to Paratertiary Butylphenol; Alkyphenols; Hydroquinone are examples of chemicals capable of producing contact vitiligo. Due to its frequent association with workplace exposure, it is often called occupational leukoderma or vitiligo.

We present the case of a 44 year old female with one year history of widespread, symmetrical, depigmented patches after exposure to phenolic resins in brake lining fluid. More recently, she developed an eczematous dermatitis involving the volar aspect of her arms and forearms. These symptoms are also suspected to be work-related.

The patient was patch tested to the NACDG standard series, epoxy and acrylate series, metal series and to some of her own products. Both 48 and 96 hour patch tests results were negative. Results of repeat patch testing to the various phenolic resins are discussed.

A brief review of pathogenesis, causes and the role of patch testing in contact leukoderma are presented.

ATOPY PATCH TESTING TO COMMENSAL SKIN ORGANISMS IN PATIENTS WITH SYMPTOMS OF VULVAR ITCH

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Introduction:

Allergy may contribute to idiopathic vulvodynia.

Methods:

In this IRB approved study, 13 patients with history of vulvar itch and/or burning were patch tested to a standard series, a customized vulvar series and commensal organisms including: UV-killed *Candida albicans* (Ca), *Malassezia sympodialis*, and dust mite. Patch test sites were examined for reactivity at 6 hr, 48 hr and 7 days. Comparison was made to a group of female Atopic Dermatitis patients.

Results:

Patients with vulvar symptoms were significantly ($p=0.0046$) more likely to have reactions to Ca than the comparison group. Positive reactions to commensal organisms in this group of patients were more common than to chemical allergens. The vulvar series demonstrated more relevant patient responses than did a standard series. Ca patch tests exhibited an inverse dose response relationship.

Conclusion:

Patients with vulvar symptoms may benefit from patch testing to a customized vulvar series as well as to low concentration Ca. An open trial of systemic anti-fungal therapy shows promise for some patients.

SERUM NITRIC OXIDE LEVELS IN RED PATIENTS

by Marvin J. Rapaport, M.D. and Vicki H. Rapaport, M.D.
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Searching for hidden allergens including “allergy” to corticosteroids in atopic patients with worsening eczematous problems has been a mainstay of the diagnostic workup. These patients usually necessitate increasing amounts of topical and systemic corticosteroids and, at times, immunosuppressive drugs as sustaining therapy.

It is suggested that the increasing and spreading erythema and eczematous rash is due to vascular dilatation, not worsening eczema nor allergen exposures. Because nitric oxide is synthesized by the endothelium of the vasculature and functions as a vasodilator, it was considered to be an area of investigation to explain this phenomenon.

The serum nitric oxide levels were measured in 38 consecutive corticosteroid-addicted red patients while undergoing withdrawal. These results were compared with 26 previously addicted but now cured patients and with 20 mild eczema patients who were using no therapy.

The overall levels of nitric oxide in patients with corticosteroid addiction withdrawal were significantly higher, p less than 0.0001 than in “cured” previously addicted patients and in active mild eczema patients.

This data may have an impact on prognosis and treatment for these two distinct types of patients and may help to define the yet-unexplained erythematous flares seen in patients who have used an excess of corticosteroids.

CHLORACNE

Anne E. Rothman, M.D., M.P.H., Department of Dermatology, University of Maryland, Baltimore, MD

Chloracne is an acneiform skin eruption associated with systemic poisoning by halogenated aromatic compounds. Dioxin is the most potent acnegen on record. The threshold for acnegenicity of the chloracnogens has not been established in human or animal models. Patients who report occupational and/or environmental exposures to pesticides, such as Agent Orange, are often given a diagnosis of chloracne. Chloracne can be differentiated from acne vulgaris based on the characteristic distribution of the lesions, the involvement of the meibomian glands, the absence of sebaceous glands, and the refractory nature of the disease. This presentation will review the pathogenesis and clinical features of chloracne and provide a framework for the proper identification of patients with this rare disease.

A SYSTEMATIC REVIEW OF TREATMENTS FOR CONTACT DERMATITIS

Joan Saary, MD¹, Roohi Qureshi, MD¹, Valerie Palda, MD², Joel DeKoven, MD¹, Melanie Pratt, MD³, Sandy Skotnicki-Grant, MD¹, Linn Holness, MD¹

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Background: No systematic reviews of treatments for contact dermatitis exist.

Methods: Multiple databases were systematically searched. Using independent double review and published criteria, articles were quality-rated. Conclusions about treatment benefit were based on the rated strength of evidence.

Results: 49 studies met inclusion criteria. Barrier creams containing dimethicone or perfluoropolyethers, cotton liners, and softened fabrics *prevent* irritant contact dermatitis (ICD). Lipid-rich moisturizers both *prevent and treat* ICD. Potent or moderately potent steroids effectively *treat* allergic contact dermatitis (ACD). Specific treatments can effectively prevent Rhus, nickel, chrome, and copper dermatitis.

Conclusions: Available evidence suggests a limited number of interventions effectively prevent or treat ICD and ACD, but well-controlled, outcome-blinded studies, particularly in the area of ACD prevention are needed. There are currently no macrolide immunomodulator trials that meet inclusion criteria.

CONTACT DERMATITIS OF THE SCALP

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Maria Hordinsky, MD, Dept. of Dermatology, Univ. of MN, Minneapolis, MN, USA

Objective: To evaluate how relevant/useful patch testing is in patients with scalp inflammation.

Methods: Retrospective chart review of 65 patients followed in the Hair Disorders Clinic who were patch tested between 1/1/98 and 3/31/01.

Results: 92% (60) had positive patch test reactions. Of these, 75% (45 of 60) were felt to be possibly relevant. The most common relevant allergens were fragrance mix (22%), shampoo (18%), Minoxidil (12%), Quaternium 15 (9%), Formaldehyde (9%), Balsam of Peru (8%), Cocamidopropyl betaine (8%), and Paraphenylenediamine (7%).

Follow up data was available on 76% (34 of 45) of patients with possibly relevant reactions with 79% (27 of 34) improving with withdrawal of the allergen(s).

Conclusions: Patch testing is useful in patients with symptomatic scalps.

CONTACT ALLERGY TO A COMMERCIAL ALCOHOL PREP SWAB

James S. Taylor, Emel Erkek, Yung-Hian Leow, and Donald W. Jacobsen, Cleveland Clinic Foundation, Cleveland, OH

Allergic contact dermatitis to prepackaged disposable alcohol prep swabs is infrequently reported.

A 60-year-old woman developed repeated episodes of dermatitis at sites of injections and venipunctures. History and patch testing revealed contact allergy to Kendall Webcol alcohol prep swabs. There were negative patch test results to isopropyl alcohol (IPA), but positive reactions to the Webcol swab, to the inner surface of the packaging foil, to two other brands of alcohol swabs, and to bacitracin.

UV absorbance profile analysis revealed the presence of UV absorbing materials at peaks of 221 and 280nm within commercial IPA samples, including one from Kendall, which were absent from reagent grade IPA.

Reports of similar cases identified IPA, propylene oxide, or both as the allergens; when swab ingredients were negative, compound allergy was proposed. A very recent report from Korea identified dodecyl diaminoethylglycine and IPA as the allergens in a commercial disinfectant swab.

Although the exact allergen is undetermined in our case, it may represent a chemical compound or contaminant that is used or acquired during the manufacturing of the swabs or foils.

FACILITATION OF THE MANAGEMENT OF ALLERGIC CONTACT DERMATITIS VIA ON-LINE TOOLS

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Once patch tests have been performed, one of the most challenging aspects regarding patient management is the successful avoidance of the identified allergens. Specifically, skin care product allergen avoidance can be difficult for both the clinician and the patient, especially if the patient is allergic to numerous and potentially cross-reacting antigens. Fortunately, with a minimum amount of training for the health care provider, electronic resources from the American Contact Dermatitis Society (www.contactderm.org) can be used successfully to facilitate patch testing identified allergens.

This presentation will describe the utility of the following electronic tools and provide an overview of how to access and use them:

1. Contact Allergen Replacement Database (CARD), Mayo Clinic Scottsdale
 - a. Provides skin care product "shopping list" for patients free of unlimited number of antigens and their cross reactors identified by patch testing
2. Specific Cosmetic Ingredient & Manufacturer Information
 - a. Cosmetic, Toiletry, and Fragrance Association (CTFA)
 - i. International Cosmetic Ingredient Dictionary & Handbook
 - ii. Cosmetic Ingredient Review
 - iii. Botanical Cross Reference Lists
 - iv. Cosmetic Industry On Call
 - b. Research Institute for Fragrance Materials (RIFM)
 - i. toxicological data, chemical & physical characteristics of individual fragrance materials
3. ACDS Members Only "List Serv"
 - a. On line "chat room" for discussion of cases

Poster Presentations

A RANDOMIZED DOUBLE-BLIND CONTROLLED TRIAL COMPARING EXTRA-VIRGIN COCONUT OIL WITH MINERAL OIL AS A MOISTURIZER FOR MILD TO MODERATE XEROSIS

Anna Liza C. Agero, M.D.* and Vermén M. Verallo-Rowell, M.D.**

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Coconut oil, a traditional moisturizer used for centuries by people in the tropics, does not have any clinical studies documenting its effectivity and safety. This study aims to determine effectivity and safety of coconut oil compared to mineral oil as moisturizer for mild to moderate xerosis.

A review board-approved randomized double-blind controlled trial was conducted in 34 patients after negative patch-testing. Patients applied either coconut or mineral oil twice a day for two weeks. Quantitative outcomes for effectivity, measured at baseline and each weekly visit, were skin hydration (Corneometer CM825[®]) and skin lipids (Sebumeter SM810[®]); for safety, transepidermal water loss [TEWL] (Tewameter TM210[®]) and skin surface pH (Skin pH meter PH900[®]). Patients and investigator evaluated symptoms of dryness, scaling, roughness, and pruritus using visual analogue scales (VAS) and grading of xerosis.

Both groups showed significant improvement in skin hydration and increased skin surface lipid levels. TEWL and Skin pH were not affected. Objective instrumental determinations showed no significant difference between both groups. Patient and investigator subjective grading of xerosis and VAS showed general trend toward better, though not statistically evident, with coconut over mineral oil.

Coconut oil is as effective and safe as mineral oil as a moisturizer.

OPTIMIZING REPRODUCIBILITY FOR CLINICAL STUDIES INVOLVING PATCH TESTING AND APPLICATION OF TOPICAL PREPARATIONS

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Objective: Reproducibility and consistency in patch testing is problematic, making controlled clinical trials of patch testing difficult. We present a novel method of applying controlled quantities of both antigens to Finn Chambers[®] (Epitest Ltd OY, Tuusula, Finland) and topical medications to desired areas.

Methods/Results: After exploring several application techniques, the use of 1mL oral syringes (Exacta-Med Dispenser, Baxa, Denmark) were found to be the most convenient and effective. The most efficient method of loading individual 1 mL syringes involved loading the compound into a 30 to 50 mL syringe, and expressing the cream, ointment or solution into the barrel of the 1mL syringe after removing the plunger. This allows accurate filling and the elimination of significant air bubbles.

Expressing .05 mL of antigen on each Finn Chamber[®] allows antigens to be accurately and reproducibly applied.

Conclusion: With maximal control of the amount of antigen and topical preparations applied in clinical patch test studies, much of the subjectivity can be eliminated. The increased reproducibility may allow for more accurate confirmatory studies, and an improved ability to compare one patch test study to another.

IRRITANT CONTACT DERMATITIS UNMASKS AN ALLERGIC CONTACT DERMATITIS

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This is a case report of a patient with a hand dermatitis initially thought to result from contact with calcium hydroxide. When the patient failed to clear despite treatment, she underwent patch testing and was shown to be allergic to other materials at work that she had previously tolerated.

The patient was employed at a company that manufactures and processes bone replacement parts and she was specifically involved in the making of cranial implants. The work was by hand and she was consistently coming into contact with benzoyl peroxide, hydroxyethyl methacrylate, triethylene glycol, dimethylacrylate, barium sulfate, and more recently calcium hydroxide.

Patch testing was performed and the patient had strong relevant reactions to ethyleneglycol dimethacrylate 2%, 2-hydroxyethyl acrylate 0.1%, and 2-hydroxyethyl methacrylate 2%. She was not patch tested to calcium hydroxide due to its caustic nature.

The cause of her occupational hand dermatitis was most likely two-fold. The initial episode was triggered by an irritant contact dermatitis to calcium hydroxide; this subsequently unmasked an allergic contact dermatitis to other materials that were also present in the work environment.

HYPERSENSITIVITY TO PARABENS – A RETROSPECTIVE STUDY

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Introduction: Parabens are the most frequently used preservatives nowadays. In spite of its broad application to personal use products, food, medicine, the occurrence of allergic contact dermatitis is rare.

Methods: A retrospective study was done based on 688 patients referred to a contact dermatitis clinic, and patch-tested to the Brazilian standard series, from February 1999 to January 2003.

Results: 23 patients (3.34%), 15 females and 8 males, were positive to paraben mix. Atopy was present in 8 patients (34.7%). Over 3 allergens proved to be present in 14 patients (60.8%). In 15 cases (65%) there was an association with varied allergens present in personal use products, and in 7 cases (30.4%) to topical therapeutics. The most frequent ones were perfume mix (9 patients – 39.1%) and p-Phenylenediamine (8 patients – 34.7%). In 4 cases there was an occupational correlation, and in 2 an association with stasis dermatitis.

Conclusion: The incidence of hypersensitivity to parabens is low. In this study it appeared associated with other allergens present mainly in personal use products or topical therapeutics sometimes due to cross-reactions (p-phenylenediamine) or co-sensitization. The most frequent associated allergens were perfume-mix and p-phenylenediamine.

CUTANEOUS & ORAL ERUPTION TO ORAL NICKEL EXPOSURE FROM DENTAL BRACES

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Background: Oral eruptions to nickel allergy are rare. Common presentations for intra-oral contact dermatitis are lichenoid plaques on the buccal mucosa adjacent to the offending antigen.

Case Report: An 11 year-old boy was referred by his orthodontist to the University of Minnesota Patch Test Clinic to evaluate a possible metal allergy. The patient developed an itchy rash on his abdomen and under his wristwatch one week after dental braces were placed. He was diagnosed with allergic contact dermatitis to nickel. The patient practiced cutaneous nickel avoidance with minimal resolution of his symptoms. One year later, the patient developed swelling and burning of his lips. Secondary to extreme discomfort, the braces were removed. The braces contained nickel, titanium and zinc. The patient underwent standard patch testing with the final 96 hour reading showing a +3 reaction to nickel, palladium, cobalt chloride and neomycin. The patient had relief of his symptoms after removal of the braces. No current relevance to palladium, cobalt or neomycin were found.

Discussion: An interesting case of oral eruption to nickel in dental materials.

ALLERGENICITY AND CROSS-REACTIVITY OF COCONUT DERIVATIVES

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Objective: To determine cross-reactivity to coconut derivatives in patients previously patch test positive to cocamidopropyl betaine (CAPB).

Methods: Double blind, controlled, randomized, IRB approved, pilot study. Thirteen patients with prior positive patch test reactions (PPPTR) to CAPB and ten control patients were tested to 13 coconut derived allergens, CAPB and two negative controls. Standard patch test methods were used with readings at 48 and 92 hours.

Results: Eight controls (80%) showed irritant reactions to coconut allergens, only one showed an allergic reaction. Seven PPPTR patients (54%) showed positive reactions to other coconut allergens of which cocamine oxide was most common. Only 3 (23%) of PPPTR patients showed reaction again to CAPB.

Conclusions: Irritant reactions are common with coconut allergens. Prior sensitivity to CAPB is associated with sensitivity to other coconut allergens. The reproducibility of sensitivity to CAPB requires further investigation with dose ranging studies.

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