American Contact Dermatitis Society

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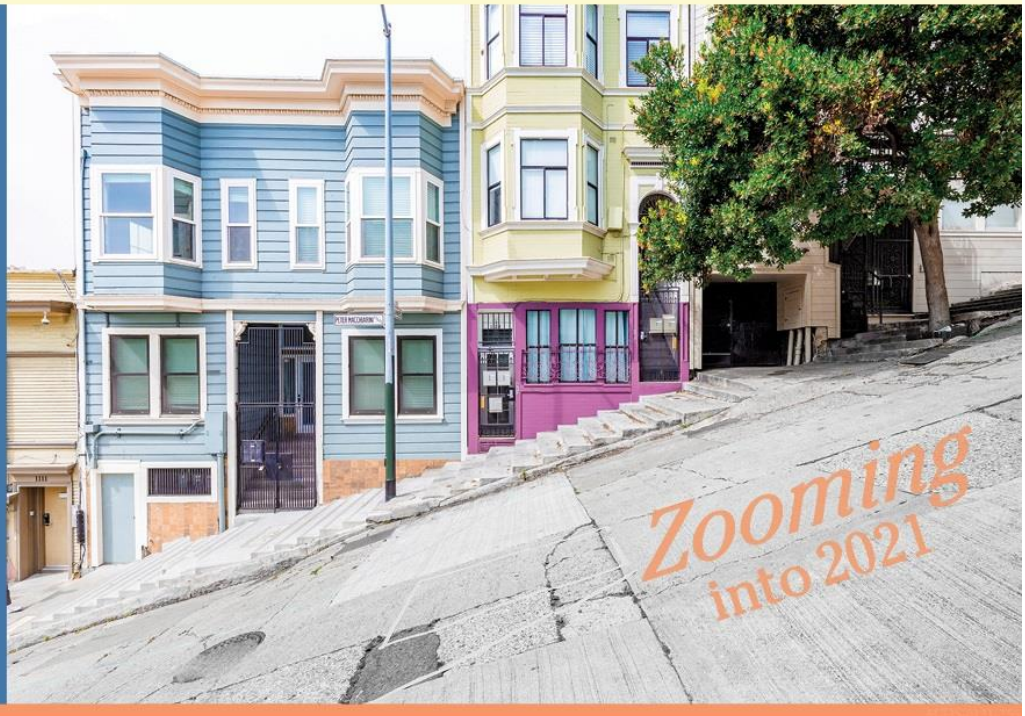
ABSTRACTS

ACDS is going *Virtual!*



Fisher Presentations

General Session Presentations

Poster Presentations

Poster Presentations (continued)

********* FISHER PRESENTATIONS ********

Abstract Title: Characterization of Residual Facial Dermatitis on Dupilumab (DFD): A Retrospective Chart Review to Delineate the Potential Role of Expanded Series Patch Testing

Authors and Affiliations: Alyssa Ashbaugh, University of California, Irvine; Emi Murase, N/A; Jodie Raffi, University of California, San Francisco; Nina Botto, UCSF; Jenny Murase, UCSF/PAMF

Abstract

Objectives:
The underlying mechanisms of duplimuab facial dermatitis (DFD) in patients on dupilumab for atopic dermatitis (AD) are poorly understood. We sought to evaluate the incidence of DFD in patients receiving dupilumab as well as the rate of resolution of facial dermatitis (FD) after patch testing (PT) and allergen avoidance.

Methods:
This is a retrospective chart review of 80 patients with AD who were evaluated for DFD after treatment with dupilumab. PT findings and response to allergen avoidance was assessed in the subset of patient with DFD who subsequently underwent PT while continuing to receive dupilumab.

Results:
Fourteen (28.6%) patients who had facial dermatitis prior to starting dupilumab experienced resolution of facial dermatitis by the first follow-up appointment on dupilumab alone. Fourteen (40%) of 35 patients with DFD at the first follow-up appointment were patch tested while on dupilumab, and 92.9% of patients patch tested had one or more relevant positive patch test result. Importantly, 85.7% of patients who were patch tested endorsed that patch testing was at least “somewhat” helpful, with 50% of patients endorsing being mostly to completely clear of facial dermatitis after allergen avoidance. Importantly, 50.6% of positive reactions were to allergens not included on the NACDG Core 80.

Conclusions:
Many patients with DFD on dupilumab benefit from patch testing and subsequent allergen avoidance. Expanded series patch testing should be offered to patients who experience DFD in order to ensure that such patients have eliminated any exogenous component of their dermatitis, such as concomitant allergic contact dermatitis.

Acknowledgements:

Abstract Title: Patch Testing to Sodium Disulfite: North American Contact Dermatitis Group Experience, 2017-2018

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Michele Buonomo; Joel DeKoven, Uinversity of Toronto- Sunnybrook; Amber Atwater, Duke University Dermatology; Margo Reeder, UW School of Medicine & Public Health; Donald Belsito, Columbia University Irving Medical Center; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; James Taylor, Cleveland Clinic Lerner College of Medicine; Howard Maibach, Univ of California Hospital; Kathryn Zug, Dartmouth-Hitchock Medical Center

Abstract

Objectives:
Sodium disulfite (SD), also known as sodium metabisulfite, is an increasingly recognized cause of allergic contact dermatitis. Objectives for this study were to characterize individuals with positive patch test reactions to SD as well as analyze reaction strength, clinical relevance and sources.

Methods:
Retrospective analysis of patients patch tested to SD (1% pet) by the North American Contact Dermatitis Group (NACDG), 2017 to 2018.

Results:
Of 4,885 patients tested to SD, 132 (2.7%) had a positive reaction. Common primary anatomic sites of dermatitis included face (28.8%), hands (20.5%) and a scattered/generalized distribution (13.6%). Compared to SD negative patients, SD positive patients were more likely male (OR 2.81; 95% CI 1.98, 4.00) and/or >40 years (OR 1.95; 95% CI 1.30, 2.94). Reactions were most commonly + (50.4%) or ++ (34.1%); 65.2% were considered currently relevant. 15.2% were definitively confirmed in sources, commonly personal care products (18.9%, especially hair dye) and drugs/medications/alcoholic beverages (9.1%). Only 2.3% of positive reactions were linked to occupation.

Conclusions:
Positive reactions to SD occurred in 2.7% of tested patients. Reactions were often clinically relevant and linked to personal care products and drugs/medications/alcoholic beverages.

Acknowledgements:

Abstract Title: Patterns of Allergic Contact Dermatitis in African Americans and Caucasians in a Major Metropolitan Area Over a Ten-Year Period

Authors and Affiliations: Vaibhav Garg, Sidney Kimmel Medical College; Tingting Zhan, Thomas Jefferson University; Bruce Brod, University of Pennsylvania; Anthony Gaspari, Thomas Jefferson University

Abstract

Objectives:
The objective of this study was to investigate patterns of allergic contact dermatitis (ACD) in African American and Caucasian patch tested patients in a distinct metropolitan area over a 10-year time frame.

Methods:
We conducted a retrospective chart review of ACD patients patch tested from 2009 to 2019 by two dermatologists at different academic medical centers. We evaluated differences in allergen frequency and exposure between African American and Caucasian patients. Pearson's $?^2$ and Fisher's Exact Test analyses were performed to examine these differences.

Results:
Among 297 patients, 215 were Caucasian and 47 were African American. The majority of patients was female (77% and 87%, respectively). Both groups showed similar rates of atopic dermatitis.
The most common sensitizers and the frequency of allergens differed between the two groups. Notably, African American patients reacted with statistically significant greater frequency to disperse dye blue ($p=0.019$) and textile dye mix ($p=0.001$). The most common source of positive patch tests for all patients was personal care products (72%). Occupational allergy was significantly greater in African American males and personal care product exposure was greater in Caucasian males ($p=0.009$).

Conclusions:
Allergen frequency differed between African American and Caucasian patients. The overall differing patterns relate most to personal care product use and occupational exposures. Additional studies with larger sample sizes are needed to expand upon these differences. The disproportionately low number of African American patients underscores the need for future research on possible healthcare disparities with regard to patch testing and ACD.

Acknowledgements:
*Funds from the American Contact Dermatitis Society Clinical Research Award were utilized for biostatistician support.

Abstract Title: Patch Testing to Mercapto Compounds: Trends, Sources, and Co-Reactivity

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Rachit Gupta, University of Minnesota Medical School

Abstract

Objectives:
Mercapto compounds, including 2-mercaptobenzothiazole (MBT), morpholinyl mercaptobenzothiazole (MOR), dibenzothiazyl sulfide (MBTS), and N-cyclohexyl-2-benzothiazyl sulfonamide (CBS), are rubber accelerators well-recognized for causing allergic contact dermatitis. The aim of this study was to determine the frequency of reactions to mercapto mix (MM) and 2-mercaptobenzothiazole, analyze chronological trends of mercapto allergy, and characterize co-reactivity with other rubber accelerators.

Methods:
North American Contact Dermatitis Group (NACDG) data, 1994-2016, was retrospectively analyzed. Study groups included 1) Mercapto+ (patients with positive/allergic patch test reactions to either 1% pet MM [0.25% MBT, 0.25% MOR, 0.25% MBTS, 0.25% CBS] and/or 1% pet MBT) and 2) Mercapto- (patients negative to MM and MBT). Concomitant reactions to carba mix (CM) and thiuram mix (TM) in Mercapto+ patients were assessed.

Results:
49,795 patients were tested from 1994-2016 to either MBT alone or both MBT and MM; 633 were Mercapto+ (1.3%). There were 526 positive reactions to MBT (1.1%, 1994-2016) and 370 positive reactions to MM (0.9%, 1994-2012). The proportions of positive reactions to MBT and MM significantly decreased from 1994 to 2016 ($p<0.0001$). As compared to Mercapto- patients, Mercapto+ patients were more likely to be male, have hand and/or feet dermatitis, and/or have occupationally related skin disease. Concomitant reactions to CM and TM were frequent (23.4% and 32.5%, respectively).

Conclusions:
Allergy to mercapto compounds has decreased significantly over the last two decades but remains clinically and occupationally relevant.

Acknowledgements:
The authors acknowledge the Pacific Northwest National Laboratory for use of their Venn Diagram Plotter tool.

Abstract Title: Stasis Dermatitis in Patients Referred for Patch Testing, North American Contact Dermatitis Group Data, 2001-2016

Authors and Affiliations: Alexander Hou, Northwestern University Feinberg School of Medicine; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences

Abstract

Objectives:
Previous studies showed high rates of allergic contact dermatitis (ACD) among patients with stasis dermatitis (SD). We sought to examine the prevalence trends, associations, and most common positive and relevant allergens in patients with SD referred for patch testing

Methods:
Retrospective analysis of 38,723 patients from the North American Contact Dermatitis Group.

Results:
Overall, 303 (0.8%) patients had a final diagnosis of SD, of which 140 (46.2%) had a concomitant diagnosis of ACD. The most common sites of dermatitis were the legs alone and legs in combination with a generalized distribution. The prevalence of SD in patients referred for patch testing decreased gradually from 1.2% in 2001-2002 to 0.4% in 2015-2016 while prevalence of ACD in patients with SD fluctuated (46.7% to 43.5%). SD was associated with older age, male sex, unemployment, and no history of atopic dermatitis or hay fever. The proportion of patients with =1 positive patch test reactions and mean number of positive patch test reactions were similar in patients with and without SD. Though, SD patients had higher odds of a positive patch test to multiple specific allergens, such as bacitracin, myroxylon pereirae resin, and benzalkonium chloride, but lower odds of a patch test reaction to nickel sulfate. The most relevant allergens in SD patients included fragrance mix I, myroxylon pereirae resin, bacitracin, quaternium-15, formaldehyde and/or methyldibromoglutaronitrile/phenoxyethanol 0.4% pet.

Conclusions:
Patients with SD had high proportions of ACD and number of positive patch test reactions, with a similar likelihood as patients without SD. SD was associated with a distinct and heterogeneous profile of allergens.

Acknowledgements:
None.

Abstract Title: Consort Allergic Contact Dermatitis: A Systematic Review

Authors and Affiliations: Jaewon Lee, Saint Louis University School of Medicine; Sarah Guo, Keck School of Medicine, University of Southern California; Jennifer Dinalo, Norris Medical Library, University of Southern California; Vincent DeLeo, USC Dermatology; Brandon Adler, University of Southern California

Abstract

Objectives:
Consort allergic contact dermatitis (CACD), also known as connubial or proxy contact dermatitis, is ACD following exposure to an agent originating from another individual. The diagnosis is often not straightforward. A comprehensive synthesis of published cases to better characterize CACD has not yet been performed.

Methods:
Systematic review was conducted following PRISMA guidelines, including original reports of CACD in any language.

Results:
182 articles (258 patients) were included. Mean age was 40.9 years (7.0% pediatric), with female predominance (66.0%). The most commonly involved sites were face (49.2%), hands (30.8%), arms (21.2%), neck (18.0%), and genitals (10.4%). Unilateral involvement occurred in 18.0% of cases. The mechanism of allergen exposure was via direct contact with another individual/handling their product (81.5% of cases), airborne (14.6%), or indirect transfer (7.9%). The most common consorts were partners/spouses (51.2%, with 28.2% involving sexual contact), children (20.3%), healthcare providers (8.2%), parents (6.6%), and pets (5.9%). Consort's occupation was involved in 15.3% of cases. Non-occupational caregiver relationships comprised 27.9% of cases, usually featuring medication administration. The most frequently implicated products were medications (36.6%), plants/botanicals (12.1%), fragrances (8.9%), sex-related (7.0%), and hair dyes (6.6%); patch testing revealed a wide variety of culprit allergens. Photoallergic contact dermatitis/photo-aggravated ACD were diagnosed in 7.4% of cases.

Conclusions:
This systematic review is the most comprehensive review of consort ACD reports to date. The number and variety of cases found suggests CACD may not be uncommon, particularly among caregivers. Obtaining a holistic history encompassing environmental, social, sexual, and occupational factors can aid in diagnosing CACD.

Acknowledgements:

Abstract Title: Formaldehyde Release from Electronic Cigarette Liquid (E-Liquid)

Authors and Affiliations: Jenna Ruggiero, University of Minnesota Medical School; Sara Hylwa, Hennepin Healthcare and HealthPartners Institute

Abstract

Objectives:
While thought to be a safer alternative to traditional cigarettes, the aerosolized liquid (e-liquid) of electronic cigarettes can be toxic. Besides the solvent (propylene glycol, vegetable glycerin) and nicotine, little is known about the liquid composition. Formaldehyde, a carcinogen and source of contact dermatitis, has been reported in the vaporized e-liquid, but no studies have assessed the actual e-liquid products. We evaluated various e-liquid products for the presence of formaldehyde using the chromotropic acid method (CAM) of testing.

Methods:
E-liquid products from 7 different companies were purchased and tested for the release of formaldehyde using standardized CAM procedures; 2 were sold at local MN vape shops that follow state regulations and 5 were from large U.S. manufacturers. For each e-liquid brand, both flavored and non-flavored (tobacco or menthol) products were purchased for comparison, when available.

Results:
Fourteen e-liquid products were tested; 7 were flavored and 7 were non-flavored. Four (28.6%) e-liquids were positive for the presence of formaldehyde; of these, 2 were flavored and 2 were non-flavored. All positive e-liquids were in pods or disposable e-cigarette devices and 2 were from local vape shops. The average nicotine content in the positive e-liquids was 3.85% and 2.83% in the negative e-liquids.

Conclusions:
Continued analysis of e-liquids is needed, as products contain toxic chemicals that are not declared by the company, as shown in this study with 28.6% of e-liquids containing formaldehyde. Ten e-liquids were found to be formaldehyde-free and may be safer alternatives, especially for individuals with cutaneous sensitivities.

Acknowledgements:

Abstract Title: Contact Allergy in Music Professions: Retrospective Analysis of North American Contact Dermatitis Group Data, 1996-2018

Authors and Affiliations: Rob Shaver, Veteran's Administration (MN); Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Joel DeKoven, Uinversity of Toronto- Sunnybrook; Howard Maibach, Univ of California Hospital; James Taylor, Cleveland Clinic Lerner College of Medicine; Amber Atwater, Duke University Dermatology; Donald Belsito, Columbia University Irving Medical Center; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; Margo Reeder, UW School of Medicine & Public Health; Kathryn Zug, Dartmouth-Hitchock Medical Center

Abstract

Objectives:
Musicians, through consistent prolonged contact with instruments and accessories, are at risk for allergic contact dermatitis. This study summarizes patch test reactions to individuals working in music-based professions in the North American Contact Dermatitis Group database.

Methods:
Inclusion criteria include patch tested patients from 1996-2018 with an occupation of musician/composer, music teacher, music store worker, or 'camera, watch, and musical instrument repairers'. Demographics, allergens, reaction characteristics, clinical relevance, and source details were analyzed.

Results:
Of 53,707 patch tested individuals, 59 patients with 103 positive patch test reactions met study criteria. 52.5% (31/59) were >40 years old and 62.7% (37/59) had a history of atopy. Face (33.9%, 20/59) and hand (27.1%, 16/59) were most prevalent anatomic sites. 32.2% (19/59) of music personnel had no positive reactions. In those with positive reactions, the average number of reactions was 2.5. 59.2% (61/103) of the reactions were currently relevant. The most common allergens were nickel (9.7%, 10/103), neomycin (7.8%, 8/103), bacitracin (6.8%, 7/103), colophony (5.8%, 6/103), fragrance mix I (5.8%, 6/103), and formaldehyde 1.0% aq (5.8%, 6/103). Only 2 reactions were occupationally relevant (nickel and colophony), both of which were associated with musical instruments and the occupation of musician/composer.

Conclusions:
Approximately two-thirds of music personnel referred for patch testing had positive patch test reactions; however occupationally relevant reactions were rare. Possible explanations include low referral rates in this cohort.

Acknowledgements:

Abstract Title: Occupational Dermatoses in Healthcare Workers Deployed in COVID-19 Centres.

Authors and Affiliations: Mehak Singh, JK Hospital and LN Medical College; Manoj Pawar, MVP's Dr.VPMCH, Nashik, Maharashtra, India; Atul Bothra, Gauhati Medical College & Hospital; Prakhar Gupta, JK Hospital and LN Medical College; Anshu Maheshwari, Consultant Dermatologist, Private Practice, New Delhi ,India; Apoorv Tiwari, All India Institute of Medical Sciences (AIIMS), Bhopal India

Abstract

Objectives:
During the Covid-19 pandemic, frontline Health Care Workers (HCWs) had prolonged contact with personal protective equipment and exaggerated hand hygiene protocols, which led to various skin reactions. Thus, the aim of this study was to report clinical features, risk factors and demographics of HCWs who experienced varied dermatoses due to these practices.

Methods:
An observational, multi-centric study was conducted from 24th March till 25th December 2020. HCWs presenting with occupational dermatoses were enrolled- their medical history, type of PPE/ hand sanitiser used, symptoms, duration and distribution/evolution, clinical features and associated symptoms were recorded.

Results:
571 HCWs presented with 733 occupational dermatoses with mean age of 31.28 ? 10.61 years, with women being the majority (62.00%).The most common noted dermatoses was irritant contact dermatitis (ICD) (46.11%) followed by friction dermatitis (24.83%) and allergic in 9.00%. Hand dermatitis accounted for 68.62% instances, with sanitizers being the culprit in 39.16% and gloves in 60.84%.Amongst facial dermatoses(34.24%), N95 masks were the most common culprits (51.79%) with the nasal bridge (62.95%) the commonest affected anatomical site. Gowns were responsible for 12.55%. However, there was a considerable overlap of different dermatoses with affliction of multiple sites. The most common symptom was pruritus (68.76%), while the most observed sign was dryness (57.98%) and erythema (53.49%). The duration of wearing the goggles and mask, excessive sweating and ill-fitting masks, all were associated with increased sensation of irritation.Headache and suffusion were most common systemic features. Overall, 19.09% patients suffered from work absenteeism.

Conclusions:
Air-conditioning, proper fitting masks, use of better material and frequent rotations may help in alleviation of dermatoses. Limitations included patch tests couldn’t be performed in all.

Acknowledgements:
We would like to thank all frontline Health care workers for all their contributions and sufferings they endured during the COVID-19 pandemic.

Abstract Title: Assessment of Skin of Color and Diversity and Inclusion Content Published in Dermatitis and Contact Dermatitis: An Analysis and Call to Action

Authors and Affiliations: Britney Wilson, Memorial Sloan Kettering Cancer Center; Mary Sun, Icahn School of Medicine at Mount Sinai; Alyssa Gwen Ashbaugh, University of California, Irvine School of Medicine; Simran Ohri, New Jersey Medical School; Christopher Yeh, Rutgers, New Jersey Medical School; Dedee Murrell, The George Institute of Global Healt and UNSW, Sydney, Australia; Jenny Murase, UCSF/PAMF

Abstract

Objectives:
It is perceived that dermatology is a field of medicine where despite being a field that is supposed to be interested in the skin, there is an underrepresentation of education and publication on skin of color people in our literature. This study develops criteria to assess skin of color related publications in two major journals, Dermatitis and Contact Dermatitis.

Methods:
We developed the first ever prespecified criteria that allows for the assessment of diversity in dermatology literature. Using this criteria, the archives of 52 dermatology journals from January 2018 to October 2020, selected based on Impact Factor and Scopus Ranking, were analyzed for association with skin and hair of color, diversity and inclusion and socioeconomic/health care disparities that affect under-represented minorities.

Results:
Out of 52 journals, Dermatitis and Contact Dermatitis ranked 45th and 46th respectively regarding the percentage of their articles relevant to skin of color.

Conclusions:
We hope the results of our study will assist the field of dermatology in its continuous and noteworthy efforts of becoming a more inclusive and diverse specialty. We encourage journal editors to use the criteria we developed to evaluate their issues for skin of color content and to provide guidance for publication invitations that are dedicated to topics relevant to patients of color.

Acknowledgements:
The authors thank Genentech and National Medical Fellowships for making this mentoring partnership possible.

Abstract Title: Shoe Allergens: Retrospective Analysis of Cross-Sectional Data from the North American Contact Dermatitis Group, 2005-2018

Authors and Affiliations: Raina Bembry, Duke University Medical Center; Raina Bembry, Duke University Medical Center

Abstract

Objectives:
Characterize demographics, clinical characteristics, patch test results and occupational data for North American Contact Dermatitis Group (NACDG) patients with shoe contact allergy.

Methods:
Retrospective study of 33,661 patients, patch-tested 2005-2018, with shoe source, foot as one of 3 sites of dermatitis and final primary diagnosis of allergic contact dermatitis.

Results:
352 patients met inclusion criteria. They were more likely male (odds ratio 3.36, confidence interval [2.71, 4.17]) and less likely age >40 (odds ratio 0.49, confidence interval [0.40, 0.61]) compared to others with positive patch test reactions. The most common relevant NACDG screening allergens were potassium dichromate (29.8%), p-tert-butylphenol formaldehyde resin (PTBFR) (20.1%), thiuram mix (13.3%), mixed dialkyl thioureas (12.6%) and carba mix (12%). 29.8% (105/352) had positive patch test reactions to supplemental allergens, and 12.2% (43/352) only had reactions to supplemental allergens.

Conclusions:
Shoe contact allergy was more common in younger individuals and males. Potassium dichromate and PTBFR were the top shoe allergens. Testing supplemental allergens, personal care products and shoe components should be part of a comprehensive evaluation of suspected shoe contact allergy.

Acknowledgements:
ARA received the Pfizer Independent Grant for Learning & Change and has consulted for Henkel.

Abstract Title: North American Contact Dermatitis Group Patch Test Results: 2017 - 2018

Authors and Affiliations: Joel DeKoven, Uinversity of Toronto- Sunnybrook; Joel DeKoven, Uinversity of Toronto- Sunnybrook; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Amber Atwater, Duke University Dermatology; Margo Reeder, UW School of Medicine & Public Health; Denis Sasseville, Montreal General Hospital; James Taylor, Cleveland Clinic Lerner College of Medicine; Kathryn Zug, Dartmouth-Hitchock Medical Center; Donald Belsito, Columbia University Irving Medical Center; Howard Maibach, Univ of California Hospital; Melanie Pratt, The Ottawa Hospital, University of Ottawa; Vincent DeLeo, USC Dermatology; Joseph Fowler, DS Research; C.G. Mathias, Trihealth

Abstract

Objectives:
This study documents the North American Contact Dermatitis Group (NACDG) patch testing results from March 1, 2017 to December 31, 2018.

Methods:
At 14 centers in North America, patients were tested in a standardized manner with a screening series of 70 allergens and supplemental allergens as clinically indicated. Data were entered into a central database. Descriptive statistics were estimated, and trends were analyzed using Chi-squared [? 2] test.

Results:
Of 4947 patients tested, 3235 (65.4%) had = 1 positive reaction; 2495 patients (50.4%) had a primary diagnosis of allergic contact dermatitis. Nickel remained the most commonly detected allergen [16.2%] followed by methylisothiazolinone (0.2% aq) [15.3%] and methylchloroisothiazolinone/methylisothiazolinone (0.02% aq; 200ppm) [11.0%].
The patch test positivity for major fragrance markers showed a statistically significant downtrend when comparing 2017-18 to the pooled proportions for 2007-16 for fragrance mix 1 (RR 0.87 [0.79,0.95]), cinnamic aldehyde (RR 0.73 [0.60, 0.88]), fragrance mix II (RR 0.83 [0.70, 0.98]), and Myroxylon pereirae (RR 0.88 [0.79, 0.98])
Four newly added allergens, hydroperoxides of linalool [8.9%], benzisothiazolinone [7.3%], sodium metabisulfite [2.7%], and hydroperoxides of limonene [2.6%] all had a prevalence of > 2%. 1 in 5 tested patients had = 1 clinically relevant reaction to an allergen not on the screening series.

Conclusions:
Methylisothiazolinone continues to be a significant allergen in North America. The pattern of contact allergy to fragrance may be changing. Patch testing with allergens beyond a screening tray is necessary for complete evaluation of occupational and non-occupational allergic contact dermatitis.

Acknowledgements:

Abstract Title: Prevalence and Trend of Allergen Sensitization in Adults and Children with Atopic Dermatitis Referred for Patch Testing, North American Contact Dermatitis Group Data, 2001-2016

Authors and Affiliations: Alexander Hou, Northwestern University Feinberg School of Medicine; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences

Abstract

Objectives:
Little is known of the association between atopic dermatitis (AD) and allergic contact dermatitis (ACD). We sought to analyze the prevalence, strength of reaction, and trends of the most commonly positive and relevant allergens in patients with AD referred for patch testing.

Methods:
Retrospective analysis of 36,834 patients from the North American Contact Dermatitis Group.

Results:
Most adults (56.0%) and children (52.8%) with a history AD had a final diagnosis of ACD. Adults (66.5% vs. 65.6%; Chi-square, P=0.1459) and children (61.4% vs. 62.3%, P=0.7074) with or without a history of AD had similar proportions of having =1 allergic reaction. Adults with AD had a greater number of allergic reactions than without (2.0±2.4 vs. 1.9±2.3; t-test, P<0.0001), while children did not (1.5±1.8 vs 1.4±1.6, P=0.3839). Nickel sulfate, methylisothiazolone, formaldehyde, fragrance mix I, sodium gold thiosulfate, and thimerosal were among the most common allergens in adults and children with AD. In adults, history of AD was associated with increased odds of 10 of the top 25 NACDG screening allergens. Most allergens had similar strengths of reaction in adults or children with and without AD, while some varied.

Conclusions:
The majority of patients referred for patch testing with AD history had a final diagnosis of ACD. Patients with AD history had similar likelihood of having a positive patch test reaction, but had a higher number of reactions, increased probability of being allergic to certain allergens and varying strength of reaction for some allergens, with differences observed between children and adults.

Acknowledgements:
None.

Abstract Title: The Use of Social Media Platforms to Discuss and Educate the Public on Allergic Contact Dermatitis

Authors and Affiliations: Morgan Nguyen, Northwestern University Feinberg School of Medicine; Slaton Case, Northwestern University Feinberg School of Medicine; Nina Botto, UCSF; Walter Liszewski, Northwestern University

Abstract

Objectives:
Social media platforms are increasingly used by patients to research and discuss medical problems. The aim of this study was to identify the social media footprint of allergic contact dermatitis (ACD) by investigating how frequently, and by whom, allergic contact dermatitis is discussed on social media sites.

Methods:
Search terms allergic contact dermatitis and contact dermatitis were queried across Twitter, Instagram, Reddit, Facebook, YouTube, and Google search metrics. The frequency, content, and creators of content were assessed.

Results:
ACD content was identified on all platforms, however, the quality and volume of content varied. Identified content was made by patients, physicians, professional organizations, and companies. Instagram was more popular than Twitter, particularly among patients. Although numerous contact dermatitis YouTube videos were identified, the content was often of poor quality (mean QUEST score 7.4/28). Google search metrics predicted 8322 monthly searches related to “contact dermatitis.” Patient support groups for allergic contact dermatitis exist on Facebook, however, specific communities do not currently exist on Reddit.

Conclusions:
Patients, physicians, professional organizations, and companies are all generating content on social media platforms. There is an opportunity for patch testing physicians to create and disperse educational content for patients using these sites. Furthermore, patch testing physicians should be aware that online support communities exist for patients with allergic contact dermatitis. Limitations of this study include being conducted during COVID-19 pandemic with associated variance in social media usage, and lack of specificity with search term “contact dermatitis” being non-unique to ACD.

Acknowledgements:

Abstract Title: Contact Dermatitis Associated with Hair Care Products: Retrospective Analysis of North American Contact Dermatitis Group Data (NACDG), 2001 to 2016

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Jenna Ruggiero, University of Minnesota Medical School

Abstract

Objectives:
Hair care products (HCPs) may cause both allergic (ACD) and irritant contact dermatitis (ICD). This study evaluated the prevalence of HCP-associated reactions and relevant allergens.

Methods:
Retrospective, cross-sectional analysis of North American Contact Dermatitis Group (NACDG) patch test data (2001-2016). Patients with positive patch test reactions to HCP sources were included.

Results:
Of 38,775 patients tested, 3,481 (9.0%) had positive patch test reactions associated with HCPs. HCP-positive patients were significantly more likely female (79.9% vs. 66.0%) and/or present with primary sites of dermatitis on the face (32.0% vs. 27.8%) or scalp (15.4% vs. 2.2%) compared to HCP-negative patients (p values <0.0001). Of 4,908 HCP-associated positive patch test reactions, 86.9% (n=4,263) were due to allergens on the NACDG screening series; paraphenylenediamine (35.8%), methylisothiazolinone (9.7%), methylchloroisothiazolinone/methylisothiazolinone (8.7%), and cocamidopropyl betaine (5.9%) were the most frequent. Most (87.7%, 3,736/4,263) were currently clinically relevant and shampoos/conditioners were the most frequent HCP source (47.3% 2,016/4,263). The most common job in individuals with occupationally related NACDG HCP-associated allergens was hairdresser/cosmetologist (71.9%, 263/366). HCP-associated ICD was seen in 282 patients (0.7%), most commonly due to shampoos/conditioners (45.0%). Of the HCP-positive patients, 18.5% had HCP reactions to allergens not on the NACDG screening series.

Conclusions:
HCPs are important, clinically relevant causes of contact dermatitis and should be suspected among patients with facial and/or scalp dermatitis. Approximately 20% of patients had HCP reactions to non-NACDG screening allergens, underscoring the importance of patch testing to expanded series in patients suspected of HCP allergy.

Acknowledgements:

Abstract Title: Occupational Contact Dermatitis in Dental Professionals: Retrospective Analysis of North American Contact Dermatitis Group (NACDG) Data, 2001-2018

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Jenna Ruggiero, University of Minnesota Medical School

Abstract

Objectives:
Occupational contact dermatitis (OCD) in dental professionals has been reported but not well described. We sought to determine the prevalence of OCD amongst dental professionals referred for patch testing and characterize relevant allergens and sources.

Methods:
Retrospective, cross-sectional analysis of NACDG data, 2001-2018. Patients in dental occupations/industries were included.

Results:
Of 41,109 patients, 585 (1.4%) were dental professionals; dental professionals were significantly more likely than non-dental professionals to be female (75.7% vs. 67.4%, $p<0.0001$), have occupationally related dermatitis (35.7% vs. 11.5%, $p<0.0001$), and have primary hand involvement (48.6% vs. 22.5%, $p<0.0001$). Of the 1,207 positive patch test reactions to NACDG screening allergens in dental professionals, nickel 2.5% (8.7%), thiuram mix (5.6%), glutaral (4.8%), and fragrance mix I (4.6%) were the most common; 244 reactions were occupationally relevant, most commonly to glutaral (18.4%) and thiuram mix (16.4%). Gloves (30.7%), sterilizing solutions (13.1%), and dental materials (11.9%) were common sources of NACDG allergens. Of dental professionals, 27.7% had >1 positive patch test reaction to allergens not on the screening series. ICD was seen in 164 (28.0%) dental professionals, most commonly to non-skin soaps/detergents/disinfectants (26.4%).

Conclusions:
Dental professionals are susceptible to OCD, particularly hand dermatitis associated with gloves or cleaning products, underscoring the importance of non-allergenic personal protective equipment. Testing this population with supplemental series is essential, as over one-fourth of patients had reactions which would have been missed if only tested with the screening series.

Acknowledgements:

Abstract Title: Hand Dermatitis in Children, Not Just Little Adults: Analysis of North American Contact Dermatitis Group Data, 2000–2016

Authors and Affiliations: Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Howard Maibach, Univ of California Hospital; Joel DeKoven, Uinversity of Toronto-Sunnybrook; James Taylor, Cleveland Clinic Lerner College of Medicine; Amber Atwater, Duke University Dermatology; Denis Sasseville, Montreal General Hospital; Kathryn Zug, Dartmouth-Hitchock Medical Center; Margo Reeder, UW School of Medicine & Public Health; Joseph Fowler, DS Research

Abstract

Objectives:
Little is known about the etiologies and relevant allergens in pediatric patients with hand eczema (HE). We sought to characterize the etiologies and determine proportion of positive and currently relevant allergens in children/adolescents with HE referred for patch testing.

Methods:
Retrospective analysis (2000–2016) of North American Contact Dermatitis Group data.

Results:
Of 1,634 pediatric patients, 237 (14.5%) had any involvement of the hands. Final diagnoses included allergic contact (49.4%), atopic (37.1%) and irritant contact dermatitis (16.9%). In multivariable logistic regression models, employment was the only association with increased odds of any HE or primary HE. Children with vs. without HE had similar proportions of positive patch tests (56.1% vs. 61.7%; Chi-square, P=0.11). The five most common currently relevant allergens were nickel, methylisothiazolinone, propylene glycol, decyl glucoside and lanolin. Of the top 20 allergens, HE was associated with significantly higher odds of currently relevant reactions to lanolin, quaternium-15, Compositae mix, thiuram mix, 2-mercaptobenzathiazole and colophony. Allergens with highest mean SPIN were methylisothiazolinone, carba mix, thiuram mix, nickel, methylchloroisothiazolinone/methylisothiazolinone.

Conclusions:
Children with HE who were referred for patch testing had a high proportion of positive patch tests, which was similar to children without HE. Children with HE had a distinct and fairly narrow profile of currently relevant allergens.

Acknowledgements:

Abstract Title: Patch Test Reactions Associated with Medications: Retrospective Analysis of North American Contact Dermatitis Group Data, 2001-2018

Authors and Affiliations: Rob Shaver, Veteran's Administration (MN); Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Joel DeKoven, Uinversity of Toronto- Sunnybrook; Howard Maibach, Univ of California Hospital; James Taylor, Cleveland Clinic Lerner College of Medicine; Amber Atwater, Duke University Dermatology; Donald Belsito, Columbia University Irving Medical Center; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; Margo Reeder, UW School of Medicine & Public Health; Kathryn Zug, Dartmouth-Hitchock Medical Center

Abstract

Objectives:
Allergens in topical and non-topical medications include active and inactive ingredients. This study characterizes positive patch test reactions associated with medications in patients evaluated by the North American Contact Dermatitis Group.

Methods:
Patients with at least one positive patch test reaction associated with a medication source (2001-2018) comprised the medication positive group. Demographics were compared to patch tested patients without an associated medication source. Allergens, reaction characteristics, clinical relevance and source details were tabulated.

Results:
Of 43,722 patients, 6688 (15.3%) had positive allergic patch test reactions associated with >1 medication source. Patients with vs. without allergic reactions to medications were more likely > 40 years old ($p<0.0001$), and/or have primary sites of dematitis on legs, anal/genital region, or trunk ($p<0.0001$). There were 9034 reactions to NACDG allergens; the most common were neomycin (28.6%), bacitracin (28.3%), tixocortol-17-pivalate (10.0%), lidocaine (8.4%), budesonide (4.9%), and dibucaine (4.6%). Propylene glycol was the most common inactive ingredient (5.5%). Current relevance was present in 61.3%. 7.1% of individuals with medication allergy would have had >1 positive patch test reaction missed if only tested to the NACDG series.

Conclusions:
Positive patch test reactions associated with medications were common and most were currently relevant. Specific anatomic sites (legs, anal/genital, trunk) were associated with medication allergy. Active ingredients were the most common allergens; propylene glycol was the most common inactive ingredient. Almost 15% of individuals with reactions associated with medications would have been missed by testing only to the screening series.

Acknowledgements:

********* POSTER PRESENTATIONS ********

Abstract Title: Immediate Hypersensitivity Reaction to Carboxymethylcellulose in White Chalk

Authors and Affiliations: Valérie Beaulieu, Université Laval; Marie-Claude Houle, Laval University

Abstract

Objectives:
A 44-year-old teacher was referred to our Contact Dermatitis Clinic for a history of pruritic erythematous papules and respiratory symptoms within minutes to hours after contact with blackboard chalk.
Our objective is to report a case of an immediate hypersensitivity reaction to carboxymethylcellulose (CMC) found in chalk.

Methods:
Open and prick tests with readings after 15, 30 and 180 minutes were performed with CMC 100% and three different brands of white chalks. Patch tests with readings at 48 and 96 hours were performed with CMC 10% aqueous, calcium carbonate 100%, three types of white chalks, and the North American Contact Dermatitis Group standard series.

Results:
Our patient experienced strong urticarial reactions to prick testing with CMC and all three types of white chalks at the three hours reading. Patch tests were only weakly positive for gold and doubtful for thimerosal and linalool. Those results were deemed non relevant.

Conclusions:
Carboxymethylcellulose is a water-soluble cellulose derivative polymer. It acts as a binder in chalk and makes it dustless and less friable. CMC is also used as a thickener, stabilizer and emulsifier in foods, pharmaceuticals, and personal products, among others. Its allergenic potential has been described, but only one case of contact urticaria to CMC from chalk has been reported in the literature. Our case confirms the possibility of an immediate hypersensitivity reaction to CMC in chalk and prompts us to stay vigilant.

Acknowledgements:

Abstract Title: Patch Testing to Ethylhexylglycerin: The North American Contact Dermatitis Group Experience, 2013–2018

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Michele Buonomo; Howard Maibach, Univ of California Hospital; James Taylor, Cleveland Clinic Lerner College of Medicine; Kathryn Zug, Dartmouth-Hitchock Medical Center; Amber Atwater, Duke University Dermatology; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; Donald Belsito, Columbia University Irving Medical Center; Anthony Fransway, Associates in Dermatology Mds Pl; Joel DeKoven, Uinversity of Toronto-Sunnybrook

Abstract

Objectives:
Ethylhexylglycerin (EHG) is a recently recognized contact allergen. Objectives of this study were to characterize individuals with positive patch test reactions to EHG and analyze reaction strength, clinical relevance and allergen sources.

Methods:
Retrospective analysis of patients patch tested to EHG (5% pet) by the North American Contact Dermatitis Group (NACDG), 2013 to 2018.

Results:
Of 15,560 patients tested to EHG, 39 (0.25%) had positive (final interpretation of “allergic”) reactions. Most (71.8%) were female and/or >40 years (76.9%). There were no statistically significant differences between age, sex or atopic history when compared to EHG negative patients. The most common anatomic sites of dermatitis were face (28.2%) and scattered generalized distribution (25.6%). Most EHG positive reactions were + (35.9%) or ++ (33.3%). Current clinical relevance was high (79.5%); none, however, were related to occupation. Personal care products were the most common source of exposure to EHG (59.0%).

Conclusions:
Ethylhexylglycerin is a rare contact allergen; the positive frequency of 0.25% is similar to other low allergenic preservatives including parabens, benzyl alcohol, and phenoxyethanol. The patch test concentration of 5.0% appears to be non-irritating. While relatively uncommon, EHG reactions were usually (79.5%) clinically relevant, often due to moisturizers/lotions/creams.

Acknowledgements:

Abstract Title: Routine Patch Testing to Methyldibromoglutaronitrile/Phenoxyethanol: North American Contact Dermatitis Group Experience, 1994-2018

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Michele Buonomo; Joel DeKoven, Uinversity of Toronto- Sunnybrook; James Taylor, Cleveland Clinic Lerner College of Medicine; Donald Belsito, Columbia University Irving Medical Center; Howard Maibach, Univ of California Hospital; Kathryn Zug, Dartmouth-Hitchock Medical Center; Margo Reeder, UW School of Medicine & Public Health; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; Amber Atwater, Duke University Dermatology

Abstract

Objectives:
Methyldibromoglutaronitrile/phenoxyethanol (MDBGN/PE) is a broad-spectrum preservative used in consumer and industrial products. Objectives were to (1) characterize the prevalence and clinical relevance of patch-test reactions to MDBGN/PE and the epidemiology of positive patients; and (2) determine frequency of concomitant reactions of MDBGN/PE and its components.

Methods:
Retrospective analysis of cross-sectional data compiled by the North American Contact Dermatitis Group (NACDG) from 1994 to 2018.

Results:
Of 55,477 tested patients, 2,674 (4.8%) had positive patch test reactions to MDBGN/PE (1.0-2.5% pet); most were + (63.3%) or ++ (22.3%). Clinical relevance was considered definite in 3.0% and probable in 19.3% of reactions. Common dermatitis sites included hands (26.4%), scattered/generalized distribution (24.7%) and face (18.3%). Patients with a positive reaction to MDBGN/PE and/or MDBGN and/or PE were significantly more likely male, >40 years, and/or had hand dermatitis (p values < 0.0033). Positivity to MDBGN/PE 2.0% pet decreased significantly over time (from 6.0% in 1998-2000 to 2.5% in 2017-2018, p < .0001). Personal care products were the most common exposure source (53.2%).

Conclusions:
Over the study period, positivity to MDBGN/PE 2.0% pet decreased significantly from 6.0% (in 1998-2000) to 2.5% (in 2017-2018). The high proportion of doubtful (9.8%) and weak (63.2%) reactions underscore the need for careful interpretation of patch test sites. Important demographic associations included male sex and age >40 years old.

Acknowledgements:

Abstract Title: Allergic Contact Dermatitis to Azelaic Acid

Authors and Affiliations: Michele Buonomo; Jenna Ruggiero, University of Minnesota Medical School; Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet

Abstract

Objectives:
Azelaic acid is an effective first-line therapy for inflammatory papulopustular rosacea. This case describes a patient with suspected rosacea refractory to treatment found to have allergic contact dermatitis to her azelaic acid gel.

Methods:
A 37-year-old woman presented with a two-year history of persistent pruritic papules involving the nose and cheeks as well as episodic rash on her forearms associated with sun exposure. She was patch tested to the North American Contact Dermatitis Group (NACDG) screening series as well as photopatch tested to the NACDG photoallergen series (irradiation with 5 J/cm2 UVA), and three personal items.

Results:
Patch testing demonstrated relevant mild (+) reactions to methylisothiazolinone (present in her shampoo), and her azelaic acid 15% gel tested “as is”. Subsequent patch testing to the inactive ingredients of the azelaic acid gel (benzoic acid 5% pet, sodium carbomer 20% pet, ethylenediamine tetraacetic acid disodium dihydrate (EDTA) 1% pet, propylene glycol 100%, sorbic acid 2% pet and sorbitan sesquioleate 20% pet) were negative. 5 controls were negative to azelaic acid 15% gel as is.

Conclusions:
Given the patient’s negative patch tests to the inactive ingredients of the azelaic acid gel, the active agent was concluded to be the allergen. Purified azelaic acid is not commercially available for patch testing. This case underscores the importance of patch testing to patients’ personal products.

Acknowledgements:

Abstract Title: Allergenic Ingredients in Sunless Tanning Products

Authors and Affiliations: Michele Buonomo; Sara Hylwa, Hennepin Healthcare and HealthPartners Institute

Abstract

Objectives:
Allergic contact dermatitis due to cosmetics is a common dermatologic complaint. Sunless tanning products may be an under-recognized source of allergens. The aim of this study was to investigate the frequency of allergenic ingredients in sunless tanning products.

Methods:
Ingredient lists from all sunless tanning products sold at 4 large retailers were compiled. Ingredients were compared with the American Contact Dermatitis Society 2020 Core Allergen Series and cross-reactors.

Results:
A total of 262 sunless tanning products were evaluated. Products were categorized as lotions (n=115), mousses/foams (n=58), serums/gels (n=48), sprays (n=32), and wipes/towelettes (n=9). All 262 products contained one or more allergens. 36 different ACDS Core Allergens were identified (average of 6.4 allergens per product). The most common allergens were fragrance (98.5%), phenoxyethanol (67.2%), tocopherol (65.7%), sorbic acid derivatives (56.1%), propylene glycol (48.9%), benzoates (46.6%), and cetyl stearyl alcohol (35.1%). Glucosides and cocamidopropyl betaine were found in 62.1% and 32.8% of mousse/foam preparations, respectively. On average, sprays contained the fewest ACDS core allergens per product (5.3), while lotions contained the most (7.0). Notably, MCI/MI was identified in only 1/262 (0.4%) and formaldehyde-releasers in 22/262 (8.4%) of sunless tanning products examined.

Conclusions:
There are many potential allergens in sunless tanning products, especially fragrance and preservatives.

Acknowledgements:

Abstract Title: Treatment Patterns and Associations with Healthcare Utilization for Toxicodendron Dermatitis

Authors and Affiliations: Melisa Butt, Penn State College of Medicine; James Marks, Penn State Hershey Med Center; Alexandra Flamm, Penn State Hershey Medical Center

Abstract

Objectives:
Recent studies have shown that the treatment of Toxicodendron Dermatitis (TD) can be variable and is primarily treated by non-dermatologists. The objective of this study was to evaluate the treatment patterns for TD and determine if those patterns had an impact on return healthcare visits.

Methods:
This study utilized healthcare claims from the IBM® MarketScan® Research Databases for 2017. Outpatient claims for TD and prescription claims for oral corticosteroids were linked and follow-up visits were considered to be returns if they occurred within 28 days of the first outpatient claim.

Results:
A total of 56,517 claims from 52,407 patients were present in 2017. Dermatologists only made up for 9.2% (n=5,181) of treating providers. There were 4,110 (7.3%) return claims with 265 (6.4%) of those to the emergency department (ED). Of those with an oral corticosteroid prescription prescribed at the initial visit, 19,999 (82.6%) were for a supply of 1-13 days. Receiving an oral corticosteroid of 1-13 days' supply was predictive of a return healthcare visit (OR: 1.38 [1.19, 1.60]; $p<0.0001$) as well as initial treatment in the ED (OR: 1.35 [1.16, 1.58]; $p=0.0001$).

Conclusions:
This study revealed that oral corticosteroids are commonly used to treat TD. Despite the frequency with which patients are prescribed oral corticosteroids, the vast majority of these claims were for less than the commonly recommended two weeks of coverage as found in the literature. Future studies should aim to education non-dermatologists on the recommended treatment of TD.

Acknowledgements:

Abstract Title: Establishing Consensus on the Treatment of Toxicodendron Dermatitis

Authors and Affiliations: Alexandra Flamm, Penn State Hershey Medical Center; Melisa Butt, Penn State College of Medicine; James Marks, Penn State Hershey Med Center

Abstract

Objectives:
Recent studies have shown that while there are general recommendations for the treatment of Toxicodendron Dermatitis (TD), there are no treatment algorithms for providers to follow when patients present with TD. As the vast majority of cases are treated by non-dermatologists, the objective of this study was to achieve consensus on the treatment of TD to educate non-dermatologists.

Methods:
Data were collected from March to December 2020. This study included focus groups and a Delphi Study with dermatologists. Themes and processes from the focus group were used to design the first round of the Delphi, which was virtually distributed to practicing dermatologists.

Results:
A total of 53 providers were included in the first round of responses. Most providers (n=43; 81.1%) providers agreed to take part in subsequent rounds, and 33 (76.7%) of those responded to the second and third rounds. Providers had a high level of agreement that mid-potency topical corticosteroids are sufficient for more mild forms of TD, while severe cases require a minimum of 2 weeks of oral corticosteroids in addition to high potency topical corticosteroids.

Conclusions:
Literature designed to guide non-dermatological providers on the treatment of TD are scarce and lack the specificity to offer structured treatment guidelines. The use of the Delphi Method and focus groups can help to expand dermatological resources and training to general providers such as pediatricians, family practice clinicians, and emergency room providers.

Acknowledgements:
This study was supported by the Clinical Research Award from the American Contact Dermatitis Society.

Abstract Title: Asthma Symptoms Secondary to Povidone- and Crospovidone-Containing Medications

Authors and Affiliations: Lara Gruye, Tufts University School of Medicine; Ari Goldminz, Brigham & Women's Hospital

Abstract

***Case Description**:*
A 64-year-old woman presented with lip swelling and sores, facial pruritus, and asthma symptoms. Following patch testing and allergen avoidance recommendations her pruritus and lip swelling and sores resolved, but she had persistent asthma exacerbations. Additional investigation revealed that several of her medications contained povidone (PVP) or crospovidone (PVPP), including multiple oral medications and her budesonide/formoterol inhaler. She noted that shortly after using the inhaler her asthma symptoms worsened. She also recalled burning symptoms at sites of topical povidone-iodine exposure following previous surgery. Within 1 week of replacing her medications with povidone- and crospovidone-free options her asthma symptoms mostly resolved. Approximately 6 months later she noted a worsening of her asthma symptoms. A review of her medications' inactive ingredients revealed crospovidone present in her recently prescribed atorvastatin; an alternative brand was recommended.

***Discussion**:*
PVP is commonly found in medications[1], cosmetics, and hair products[2]; in topicals they are often present as copolymers. Type IV hypersensitivity[3] and type I hypersensitivity[3-5] reactions have both been described with PVP/PVP-copolymer. In the present case, exposure to PVP- and PVPP-containing medications, including an inhaler, were associated with worsening asthma. While skin testing to PVP and PVPP was not performed, the time course of her symptoms related to PVP and PVPP exposure, improvement with avoidance, and recurrence after inadvertent reintroduction of PVPP in a newly added medication support the hypothesis. Our case illustrates the importance of thorough history taking, and the opportunity to use methods of investigation essential to solving cases of contact dermatitis for seemingly unrelated problems.

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Abstract Title: Common Sources of Workplace Exposure to Occupational Allergens

Authors and Affiliations: Joel DeKoven, Uinversity of Toronto- Sunnybrook; Benjamin DeKoven, St Michael's Hospital; Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; C.G. Mathias, Trihealth; James Taylor, Cleveland Clinic Lerner College of Medicine; Denis Sasseville, Montreal General Hospital; Donald Belsito, Columbia University Irving Medical Center; Joseph Fowler, DS Research; Melanie Pratt, The Ottawa Hospital, University of Ottawa; D. Linn Holness, University of Toronto and St Michael's Hospital; Kathryn Zug, Dartmouth-Hitchock Medical Center; Howard Maibach, Univ of California Hospital; Vincent DeLeo, USC Dermatology; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; Amber Atwater, Duke University Dermatology; Margo Reeder, UW School of Medicine & Public Health

Abstract

Objectives:
Background: Occupational allergic contact dermatitis is diagnosed with patch testing and then connecting positive results to workplace exposures. It is helpful to understand the common sources of exposure for occupational allergens.
Objective: To examine the main sources of exposure for the common occupational allergens.

Methods:
Methods: Patients with occupationally related dermatoses from eight North American Contact Dermatitis Group (NACDG) datasets from 2001-2016 were analyzed for the frequency of occupationally relevant allergic reactions to the standard screening tray of allergens and their sources of exposure.

Results:
Results: Of 38,614 patients, 4471 (11.6%) had occupationally-related skin disease; 70.5% of individuals with occupationally-related skin disease had a final diagnosis of allergic contact dermatitis. The most common source of occupational contact allergy among screening allergens overall was gloves, followed by hair dyes; cement/concrete/mortar; adhesives/glues/bonding agents; and coatings including paint/lacquer/shellac/varnish/ stains The most prevalent sources of non-NACDG occupational allergens were adhesives/glues/bonding agents; hair dyes; gloves; coatings; moisturizers/lotions/creams; and metalworking fluids/cutting oils.

Conclusions:
Conclusion: Occupational skin disease was seen in 11.6% of patch-tested patients; most had allergic contact dermatitis. Understanding the common sources of occupational allergens will assist with both diagnosis of work-related disease and for successful return to work.

Acknowledgements:

Abstract Title: Healthcare Workers and Occupational Contact Dermatitis

Authors and Affiliations: D. Linn Holness, University of Toronto and St Michael's Hospital; Sandra Skotnicki-Grant, Bay Dermatology Center; Joel DeKoven, Uinversity of Toronto- Sunnybrook

Abstract

Objectives:
Workers in the healthcare sector are at higher risk of occupational skin disease.
Objective: To examine the diagnosis, common workplace allergens and prevention practices in healthcare workers HCW) seen in a tertiary referral centre in Toronto, Canada.

Methods:
Demographic, clinical, patch test and workplace information was collected for patients seen in a tertiary referral patch test clinic between 2012 and 2019. Basic descriptive statistics were generated to compare workers in common job categories across the sector.

Results:
308 HCW were assessed including 154 nurses, 34 PSWs, 28 dental workers and 22 cleaners. Overall, 90% had a diagnosis of occupational irritant contact dermatitis and 34% had occupational allergic contact dermatitis. The dental workers had very different results from the other job categories. They were more likely to work in a small workplace and less likely to take time off work, file a compensation claim or to have received health and safety and skin specific workplace training. They had the highest rate of allergic contact dermatitis and higher percentages of occupationally relevant rubber (carba mix and thiuram) and acrylate positives on patch testing.

Conclusions:
Collection of detailed workplace as well as clinical information in an occupational patch test database facilitates a better understanding of the diagnosis and also the workplace characteristics that may place some HCW at increased risk for occupational skin disease. This provides useful information that can be used to target workplace prevention activities.

Acknowledgements:

Abstract Title: Prevalence and Trend of Allergen Sensitization in Patients with Nummular Eczema Referred for Patch Testing, North American Contact Dermatitis Group Data, 2001-2016

Authors and Affiliations: Alexander Hou, Northwestern University Feinberg School of Medicine; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences

Abstract

Objectives:
Few studies examined the clinical characteristics of nummular eczema (NE) and the relationship of NE with allergic contact dermatitis (ACD). We sought to examine the trends and associations, and clinical relevance of ACD in NE patients.

Methods:
Retrospective analysis of 38,613 patients from the North American Contact Dermatitis Group.

Results:
Overall, 748 (1.9%) patients had a diagnosis of NE, of which 23.9% had a concomitant diagnosis of ACD. The most common sites of dermatitis were a generalized distribution, the legs, and the trunk. The prevalence of NE fluctuated over time between 2001-2002 and 2015-2016, with no overall change in prevalence in diagnosis of NE, while prevalence of ACD in patients with NE increased overall (25.3% to 32.1%). In multivariable logistic regression models, NE steadily increased with age and was associated with male sex, Asian and other race/ethnicity, and inversely associated with a history of AD and hay fever. Patients with NE were less likely to have =1 positive allergic reaction and had lower odds of a positive reaction for multiple individual allergens. The most commonly relevant allergens in patients with NE were formaldehyde 2.0% aq., methylisothiazolinone, quaternium-15, fragrance mix I, and propylene glycol.

Conclusions:
NE is a heterogeneous disorder with distinct subsets of lesional distribution and profile of relevant allergens, especially formaldehyde and formaldehyde releasers. A large subset of NE patients had ACD, supporting the role of patch testing in NE patients.

Acknowledgements:
None.

Abstract Title: Prevalence of Allergens in Laundry Detergents: A Review

Authors and Affiliations: Kalliope Kyriakides, SBH Health System (St. Barnabas Hospital); Aurel Apple, NYIT College of Osteopathic Medicine; Sarah Stano, SBH Health System (St. Barnabas Hospital); Cindy Hoffman, SBH Health System (St. Barnabas Hospital); Ronald Brancaccio, Skin Institute of New York

Abstract

Objectives:
Allergens that cause contact dermatitis are often found in laundry detergent products. The aim of this review is to examine the prevalence of allergens found in laundry detergents and fabric softeners sold in the United States.

Methods:
Our review was conducted through literature searches pertaining to allergens and detergent/softener ingredients. We examined product information from 76 liquid and pod laundry detergents and 70 liquid fabric softeners which we gathered from various online resources.

Results:
Of the 76 laundry detergents included in this search, 77.6% contained preservatives, most frequently 1,2-benzisothiazolin-3-one (BIT) at 53.9% and Methylisothiazolinone (MI) at 44.7%. Propylene glycol was a frequently listed solvent (57.9%). A majority of the detergents reviewed contained fragrances (90.8%), with the most common being hexyl cinnamal (63.2%), limonene (55.3%), linalool (40.8%), butylphenyl methylpropional (27.6%), and geraniol (11.8%). Of the 70 liquid fabric softeners searched, MI was the most commonly found preservative (41.4%). BIT and MCI were found much less frequently (15.7% and 14.3% respectively). Propylene glycol was also found in about 25% of the liquid fabric softeners investigated. Fragrances were frequently found in the liquid fabric softeners reviewed (94.3%).

Conclusions:
Through evaluation of U.S. laundry detergents and fabric softeners, we gathered that over 95% of the studied products contain allergenic preservatives, solvents, and/or fragrances. Further, products marketed as “free and clear”, “natural”, or for “sensitive skin” were included in this majority. Limitations to our study include utilization of only U.S. and European data and limited products included in our search of U.S. laundry detergents.

Acknowledgements:

Abstract Title: Systemic Contact Dermatitis and Epicutaneous Allergic Contact Dermatitis to Benzyl Alcohol

Authors and Affiliations: Mary Laird, Yale University School of Medicine; Kalman Watsky, Yale University School of Medicine

Abstract

Objectives:
Benzyl alcohol is a commonly found preservative in medications and personal care products. Systemic contact dermatitis to benzyl alcohol has not been well described. We report a case of benzyl alcohol contact dermatitis to multiple medicaments, including a systemic contact dermatitis to intramuscular progesterone.

Methods:
Case report of a 39-year-old physician with history of dermatitis at injection sites of intramuscular progesterone oil. After several weeks of local injection site reactions, she developed eruptions at distant sites including on the thigh and a vesicular hand dermatitis, for which hydrocortisone cream was ineffective. She later developed dermatitis at the site of ultrasound gel. Patch testing was completed using IQ Ultra chambers with a modified American Contact Dermatitis Society 80 allergen series, a corticosteroid series, a fragrance series, and a cosmetic series (Chemotechnique, Malmo, Sweden).

Results:
Patch testing revealed a 2+ reaction to benzyl alcohol and a 1+ reaction to balsam of Peru; no other positive reactions were noted. Benzyl alcohol was noted to be an ingredient in the injectable progesterone oil, the hydrocortisone cream, and the ultrasound gel. The patient had complete resolution upon avoidance of benzyl alcohol.

Conclusions:
This is a unique case of sensitization to benzyl alcohol leading to systemic contact dermatitis and subsequent epicutaneous allergic contact dermatitis. Although it is a weak sensitizer, it is widely found in numerous systemic medications, topical medications, and personal care products and this case highlights the importance of including this in patch testing.

Acknowledgements:

Abstract Title: Allergenicity and Economic Value of Store-Brand Versus Comparable Name-Brand Personal Care Products

Authors and Affiliations: Jaewon Lee, Saint Louis University School of Medicine; Anita Yau, Southern California Clinical and Translational Science Institute, USC; Vincent DeLeo, USC Dermatology; Brandon Adler, University of Southern California

Abstract

Objectives:
There has not been substantial research investigating the characteristics and economic values of store-brand and name-brand personal care products (PCPs). We compared ingredient profiles, allergenicity, and cost between store-brand PCPs sold in major American retailers and comparable name-brand products.

Methods:
In May 2020, online searches were performed to sample store-brand PCPs (moisturizers, sunscreens, shampoos, face and body washes) from Amazon, Walmart, Target, and CVS. For each product category, the first 5 products featuring a comparison statement (e.g., "Compare to [name-brand product]") were included. We performed pairwise comparisons between store-brand products and name-brand comparators analyzing unit price, ingredient composition, and NACDG 2015-16 allergens.

Results:
Among 186 included PCPs (93 store-brand, 93 name-brand), unit price was significantly lower for store-brand vs. name-brand ($P < 0.0001$). Across the 4 retailers, there was a significant difference in total allergens between store-brands vs. name-brands ($P < 0.02$), with Target showing the largest difference, and Amazon the smallest. Allergen-level analysis revealed significant differences for paraben mix ($P = 0.0004$) and methylchloroisothiazolinone/methylisothiazolinone (MCI/MI, $P = 0.017$). Walmart and Amazon products contained the least paraben mix; CVS contained the most. Walmart products contained more MCI/MI than other retailers. No significant relationship was found between price and allergenicity.

Conclusions:
This is the largest study of allergenicity and economic value between store-brand and name-brand PCPs to date. While store-brand products were more affordable, in some instances, they were more likely to contain allergens with higher sensitizing potential than name-brands. Patients should be educated about these differences when selecting safe PCPs following patch testing.

Acknowledgements:

Abstract Title: Systemic Pustular Allergic Contact Dermatitis Induced by Thioureas: Report of a Case With Recurrence Upon Patch Testing

Authors and Affiliations: Laurence Lemieux, Université Laval

Abstract

Objectives:
A 25 year-old-man presented with erythematous plaques with numerous pinpoints pustules that appeared 24 hours after wearing a scuba diving suit made of neoprene.
The objective is to report a case of a systemic pustular allergic contact dermatitis induced by thioureas with recurrence upon patch testing.

Methods:
Patch tests were performed with the North American 80 Comprehensive Series, the rubber series and a piece of his scuba diving suit.

Results:
After 48 hours, he was found to have a 3+ pustular reaction to mixed dialkyl thiourea, diethyl thiourea, dibutyl thiourea and a sample of his suit. Simultaneously, the patient developed a widespread eruption consisting of erythematous edematous plaques with nonfollicular micropustules. The latter, although more severe, was similar to the one induced by wearing scuba diving suit. No fever or malaise was noted.
Cutaneous biopsy of the patch test reaction demonstrated pustular spongiotic dermatitis with epidermal neutrophilic exocytosis and rare eosinophils. Culture of a pustule showed normal skin flora.

Conclusions:
Pustular patch test reactions are well-known to occur with metals and often considered to be an irritant reaction. However, pustular allergic contact dermatitis (ACD) is a rare entity.
A pustular reaction induced by thioureas on patch testing with a pustular eruption, reminiscent of acute generalized exanthematous pustulosis (AGEP) has not been described. Although reactivation of previous dermatitis induced by patch testing is common, this clinical presentation suggests a systemic reactivation induced by patch testing to the culprit allergen. The pustular spongiosis is consistent with a subtype of ACD, which is usually not found in AGEP.

Acknowledgements:

Abstract Title: Patch Testing in a Patient with Dupilumab Therapy: Confirmation of Polysensitization Especially to Topical Medicaments

Authors and Affiliations: Laurence Mainville, Université Laval; Hélène Veillette, Laval University; Marie-Claude Houle, Laval University

Abstract

Objectives:
Impact of dupilumab on patch testing is still incompletely understood.

Methods:
We report the case of an adult male patch tested under dupilumab with proven allergic contact dermatitis (ACD) to all corticosteroids, lanolin and fucidic acid.

Results:
A 52 years old male working as an industrial mechanic presented at the ACD clinic for patch testing. Medical history included severe atopic dermatitis (AD), recurring multifactorial ulcers and prurigo-like lesions since 2017. Ulcers recurred despite proper wound care including fucidic acid ointment. Other regular treatments included topical corticosteroids. He was put on dupilumab in January 2020 following an exacerbation of pruritus and eczematous plaques on the legs.
ACD to fucidic acid was suspected following improvement of an ulcer after its discontinuation. Patch testing was then performed with the North American standard series, cosmetics, corticosteroids, and medicaments series. It revealed ACD to lanolin (3+), fucidic acid (2+), thiuram mix (1+), tert-butylphenol formaldehyde resin (1+), and all corticosteroids molecules (all 1+). Interestingly, the observed reaction to lanolin consisted in a crusted papular lesion similar to those described as prurigo in this patient.
In regard to history of regular topical therapy with corticosteroids and fucidic acid, lack of previous history confirming atopy, and recent patch testing results, we believe ACD is the entity that could best explain his recurring cutaneous symptoms.

Conclusions:
Positive patch test results for fucidic acid, lanolin, and corticosteroids were observed even if performed on dupilumab. Severe ACD may mimick AD and should be considered for all patients prior to starting dupilumab treatment.

Acknowledgements:

Abstract Title: A Case of Allergic Contact Dermatitis to Aloe Vera

Authors and Affiliations: Jacqueline Masehi-Lano, Stanford University School of Medicine; Jennifer Chen, Stanford University

Abstract

Objectives:
We present a rare case of allergic contact dermatitis (ACD) to Aloe vera, serving as a reminder that this may occasionally cause ACD.

Methods:
A non-atopic woman in her 60s presented with a 6-month history of dermatitis where she had been wearing a knee brace for a year for bursitis. For months, she had used over-the-counter hydrocortisone ointment, triple antibiotic ointment, Burn Balm (Great Cape Herbs, Brewster, MA), Benadryl itch gel (Johnson & Johnson, Fortworth, PA), Vaseline Intensive Care Aloe Soothe (Unilever, Englewood Cliffs, NJ), and compresses consisting of Aloe vera leaf cuttings. Patch testing at 96 hours revealed positive reactions to an Aloe leaf cutting, Vaseline Intensive Care Aloe Soothe, mixed dialkyl thioureas, Benadryl itch gel, and her knee brace.

Results:
Her favored diagnosis was an initial ACD to thioureas in her knee brace. Subsequently, she developed ACD to agents used to treat her dermatitis, including Benadryl itch gel, Aloe leaf cuttings, and Aloe-containing medication. She improved with fluocinonide 0.05% ointment and allergen avoidance.

Conclusions:
Allergic reactions to Aloe vera are rare despite widespread use. Sensitization has primarily occurred from preparations with Aloe leaves. The leaf bark contains phenolic compounds known to be irritants, although allergy can occur. Aloe gel, found in the leaf center and currently used almost exclusively, consists of water and carbohydrates and is less likely to induce a reaction. It has been suggested to patch test Aloe in 10% petrolatum or alcohol. Notably, sorbic acid is frequently contained in Aloe products and should also be tested whenever possible.

Acknowledgements:

Abstract Title: A Reference for Common Contact Allergens in Topical Corticosteroid Vehicles

Authors and Affiliations: Mia Mologousis, Tufts University School of Medicine; Ari Goldminz, Brigham & Women's Hospital

Abstract

Objectives:
For patients with allergic contact dermatitis challenges exist when choosing a specific topical corticosteroid (TC), particularly for prescribers without access to the Contact Allergen Management Program (CAMP) or SkinSAFE. Since referring physicians and other providers often do not have access to these references, questions on TC selection routinely arise post-patch testing. Potential contact allergens in TCs are most often present within the inactive ingredients; these vary between active ingredients, vehicles, and even manufacturers. Therefore, our objective was to characterize inactive ingredients across different TCs and create a reference for prescribers.

Methods:
We compiled ingredient lists for ointment and cream formulations of 12 commonly prescribed TCs and analyzed their inactive ingredients for contact allergens present on patch testing core series (American Contact Dermatitis Society [ACDS] or North American Contact Dermatitis Group [NACDG]).

Results:
We reviewed a total of 112 TCs. Propylene glycol was the most commonly identified potential allergen among inactive ingredients, present in 51/112 (46%). Additional examples of inactive ingredients included methylchloroisothiazolinone/methylisothiazolinone, lanolin, diazolidinyl urea, beeswax, coconut derivatives, parabens, and benzyl alcohol, among others.

Conclusions:
When prescribing TCs for patients with contact allergies we recommend including a note to the pharmacist indicating which ingredients should be avoided and specifying at least one manufacturer that produces an appropriate version. To better assist prescribers without CAMP or SkinSAFE access, we created a table featuring common contact allergens present in each TC formulation according to manufacturer. We intend to make an updated version of this reference available on a quarterly basis.

Acknowledgements:
None.

Abstract Title: Prevalence of Contact Allergens in Dry Shampoo Products

Authors and Affiliations: Phoebe Newell, Northwestern University; Walter Liszewski, Northwestern University

Abstract

Objectives:
Dry shampoos are increasingly popular leave-in personal care products used to quickly cleanse hair without the need for water. There is potential for allergens present in them to trigger allergic contact dermatitis (ACD). This study reports on the prevalence of common contact allergens present in dry shampoos sold in the US.

Methods:
Dry shampoos were identified by searching 5 major retailer's websites (Ulta, Sephora, Target, Walgreens, and CVS). All listed ingredients were tabulated and compared against the American Contact Dermatitis Society Core Allergen Series. The presence of fragrance/parfum, limonene, linalool was also noted.

Results:
228 unique dry shampoo products were identified. Only 2 were free of all allergens studied - Pssst! Instant Dry Shampoo Unscented and Redken Dry Shampoo Powder 02 with Charcoal. The most common allergen was "fragrance/parfum" (94.7%). Amongst specific fragrances, the most common were limonene (36.4%), linalool (35.5%), and citronellol (22.8%). Only 5 products were found to be free of any type of fragrance. The most common preservatives were phenoxyethanol (17.5%), benzyl alcohol (7.5%), and ethylhexyglycerin (7.5%). Other notable allergens were tocopherol (15.4%), benzophenone-4 (4.4%), and octinoxate (12.3%).

Conclusions:
Considering the growing popularity of dry shampoos, dermatologists must consider them as potential sources of allergens when advising patients. Particular care should be taken in those with suspected or confirmed fragrance allergies, given fragrance was present in nearly all products studied.

Acknowledgements:

Abstract Title: Preliminary Report: Allergic Contact Dermatitis in Racial Minorities

Authors and Affiliations: Chidubem Okeke, Howard University College of Medicine; Sydney Sullivan, University of California, Davis; Lauren Hastings, University of California Davis; Iryna Rybak, University of California Davis; Peggy Wu, University of California - Davis

Abstract

Objectives:
The published literature on allergic contact dermatitis (ACD) in the United States has limited data on non-white patients. Here, we evaluate the association of race with patients' clinical presentation and quality of life (QoL) at baseline in patch-test patients presenting to an academic dermatology clinic.

Methods:
This retrospective and prospective database has been approved by the University of California, Davis Institutional Review Board. De-identified information is recorded in REDCap™ and analyzed with Excel and STATA®. Fisher's exact, students t test, and Wilcoxin rank-sum tests were used for statistical analysis.

Results:
Of 274 participants seen between 2018 and 2020, 62.7% were self-reported White, 13.14% Asian, 3.28% Black/African-American, 0.36% Hispanic, 0.73% American-Indian/Alaska-Native, 1.46% Native-Hawaiian or Other Pacific-Islander, 1.46% more than one race, and 16.7% did not report. Compared to the 2010 United States Census of Sacramento, the race distribution of patch-test patients in the database had fewer Black/African-American and Hispanic (10.9% and 23.6%, respectively, in Sacramento) patients represented. At the final patch test reading, 73.2% (41/56) of non-white, compared to 63.9% (110/172) of white patients, were diagnosed with ACD. There were no statistically significant differences in patients' reported severity at presentation, global QoL, anatomic areas of involvement, duration of symptoms, estimated body surface area, or investigator global assessment score between non-white and white participants.

Conclusions:
This preliminary analysis provides support that racial minorities are also affected by ACD. In future studies, we hope to bring further awareness of ACD in skin of color patch-test patients and identify potential gaps in care.

Acknowledgements:
We are grateful to Angelina Samchuk and Destiny Turner for the hard work of running the patch test clinic and for organizing our research efforts.

Abstract Title: Seven Cases of Suppressed Patch Testing Reactions Due to Methotrexate Therapy

Authors and Affiliations: Forrest Roberson, University of North Carolina; Estefania Cruzval-O'Reilly; Aida Lugo-Somolinos, UNC Dermatology

Abstract

Objectives:
To describe a case series of patients with positive patch test results that subsequently tested negative while taking methotrexate.

Methods:
A retrospective review of patients patch tested at UNC Dermatology in Chapel Hill, NC from 2010 to 2019.

Results:
Seven cases of patients with previous positive patch testing were re-patch tested while on methotrexate therapy. None of the patients showed positive results while on methotrexate. The average weekly dose of methotrexate was 17.5 mg, while the average total accumulated dose was 233.75 mg. The average length of treatment prior to testing was 5 months.

Conclusions:
Though developing a positive patch test reaction is possible while on methotrexate, cases of suppression of positive reactions have not been previously reported. We present the first reported cases of patients with suppressed patch testing reactions due to methotrexate use.

Acknowledgements:

Abstract Title: Orofacial Granulomatosis Due to Carvone Allergy in a Pediatric Patient

Authors and Affiliations: Jenna Ruggiero, University of Minnesota Medical School; Rob Shaver, Veteran's Administration (MN); Anne Neeley, Park Nicollet Dermatology

Abstract

Objectives:
Carvone, a flavoring and fragrance chemical used in various personal care products, is a known contact sensitizer. Only one other case of carvone associated orofacial granulomatosis has been reported. This vignette illustrates an unusual case of orofacial granulomatosis due to carvone and the importance of patch testing in these patients.

Methods:
A 9-year-old female presented with a one-year history of lip and facial swelling. Punch biopsy revealed mid-dermal granulomatous inflammation and mild spongiosis of the mucosal epithelium; she was diagnosed with orofacial granulomatosis. Patch testing was completed with the North American Contact Dermatitis Group screening series, supplemental series, and personal products to rule out contact allergy.

Results:
Patch testing demonstrated strong (++) reactions to carvone, limonene, and her Crest® 3D White Stain Eraser Icy Clean Mint toothpaste, as well as mild (+) reactions to fragrance mix I, linalool and dodecyl gallate, and doubtful (+/-) reactions to tinuvin P, diallyl disulfide and octyl gallate. Her Crest® toothpaste listed “flavor” as an ingredient and the manufacturer confirmed that the product contained spearmint. Twelve weeks after discontinuing the offending toothpaste, her lip swelling had markedly improved.

Conclusions:
While carvone was not explicitly declared in the Crest® toothpaste, spearmint and carvone are known cross-reactors. Additionally, with our patient’s dramatic improvement after discontinuing this toothpaste, we feel the presence of carvone in this product is highly likely. These findings suggest that carvone allergy should be considered in patients with orofacial granulomatosis.

Acknowledgements:

Abstract Title: Patch Testing With Tocopherol and Tocopherol Acetate: The North American Contact Dermatitis Group (NACDG) Experience, 2001 to 2016

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Jenna Ruggiero, University of Minnesota Medical School

Abstract

Objectives:
Vitamin E, or tocopherol, a naturally occurring mixture of antioxidants commonly used in topical skin care products, may cause allergic contact dermatitis. We sought to characterize positive patch test reactions to tocopherol and tocopherol acetate.

Methods:
Retrospective, cross-sectional analysis of NACDG patch test data to tocopherols (DL-a-tocopherol 100% and/or DL-a-tocopherol acetate 100%), 2001 to 2016. All patients with a final interpretation code of "allergic" to either tocopherols were included.

Results:
Of the 38,699 patients patch tested to tocopherol and/or tocopherol acetate, 349 (0.9%) had positive reactions; of these, 87.6% were currently relevant. Most (51.4%) were weak (+) and/or not related to occupation (99.1%). Compared to tocopherol-negative patients, tocopherol-positive individuals were more likely to be female (72.5% vs. 67.2%, $p=0.0355$), have a final primary diagnosis of allergic contact dermatitis (74.2% vs 52.6%, $p<0.0001$), and have dermatitis in a scattered generalized distribution (23.8% vs. 18.2%, $p=0.0072$); they were also less likely to have hand involvement (16.6% vs. 22.3%, $p=0.0064$). The most common source of tocopherol was personal care products, especially moisturizers.

Conclusions:
Positive patch test reactions to tocopherols were relatively rare given widespread use. When positive, current clinical relevance was high. Tocopherol-positive patients were more likely to be female and present with dermatitis in a scattered generalized pattern.

Acknowledgements:

Abstract Title: Patch Testing with Ammonium Persulfate: The North American Contact Dermatitis Group Experience, 2015-2018

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Jenna Ruggiero, University of Minnesota Medical School

Abstract

Objectives:
Ammonium persulfate (APS), an oxidizing agent commonly used in manufacturing and hair products, may cause allergic contact dermatitis. This study sought to determine the prevalence of positive patch test reactions to APS.

Methods:
Retrospective analysis of patients with positive patch tests to APS (2.5% pet) by the NACDG, 2015-2018.

Results:
Of 10,526 patients, 193 (1.8%) had positive patch test reactions to APS. As compared to APS-negative patients, APS-positive patients were significantly more likely male (43.2% vs. 28.0%, $p<0.0001$), have occupationally related dermatitis (22.2% vs. 10.9%, $p<0.0001$), and have dermatitis primarily involving the hands (30.2% vs. 22.0%, $p=0.0064$). Over half (52.3%) of the positive reactions were weak (+) and/or currently clinically relevant (57.0%); 19 (9.8%) reactions were related to occupation, most (68.4%) in hairdressers. Swimming pools/spas (23.3%) and hair care products (19.2%) were the most common sources.

Conclusions:
The proportion of positive reactions to APS in routine testing was 1.8%. Reactions were more frequent in males and hand dermatitis was a common presentation. Approximately 10% were related to occupation, especially hairdressing.

Acknowledgements:

Abstract Title: Prevalence of Potentially Allergenic Ingredients in Products Labeled for Eczema Care

Authors and Affiliations: Ben Schwartz, Stanford University School of Medicine; Golara Honari, Stanford University; Albert Chiou, Stanford University School of Medicine; Justin Ko, Stanford University School of Medicine; Kavita Sarin, Stanford University School of Medicine; Jennifer Chen, Stanford University

Abstract

Objectives:
To evaluate the allergen content in products labeled specifically for eczema.

Methods:
We searched CVS, Walgreens, and Amazon's websites to identify products labeled for use in eczema, yielding 128, 84, and 100 products respectively. Products with the term "eczema" in the product name or label were included, resulting in the inclusion of 74 unique products verifiable by the manufacturer's website and/or product photographs on the retailer's website. Allergens from the North American Contact Dermatitis Group (NACDG) series were cross-referenced with product ingredient lists.

Results:
The average number of allergens per product was 2.4. 12 (16.2%) products had no NACDG allergens, 62 (83.8%) had =1 allergen, 49 (66.2%) =2, and 12 (16.2%) =5. The most common allergens were fragrance (47.3% products) and Compositae (37.8%). 25 products bore the National Eczema Association seal, averaging 2.3 allergens per product.

Conclusions:
Our study demonstrates that products labeled for eczema frequently contain potential allergens. The most common allergen was fragrance, followed by Compositae. A recent metanalysis noted a statistically significant increased risk of Compositae contact allergy in atopic dermatitis patients. The frequent inclusion of Compositae plants, which have purported soothing properties, in eczema products may be contributing to the heightened rate of sensitization, and further study is warranted.

Acknowledgements:

Abstract Title: Searching the Holy Grail – Evaluating Contact Allergens in Popular Reddit Starter Skincare Routine

Authors and Affiliations: Rob Shaver, Veteran's Administration (MN); Rachit Gupta, University of Minnesota Medical School; Sara Hylwa, Hennepin Healthcare and HealthPartners Institute

Abstract

Objectives:
Social media is increasingly the preferred platform for information on all topics - including skincare. Reddit is the sixth most-visited website in the United States, sixteenth globally, with over 430 million monthly users. The Reddit community r/SkincareAddiction (SCA) has over 1.2 million+ subscribers; many of whom use SCA to discuss their skincare routine. SCA has a recommended starter routine consisting of crowdsourced 'Holy Grail' product recommendations, which includes sunscreens, cleansers, and moisturizers. This list is unique because products can become more or less prominent depending on their user-determined popularity. We analyzed these 'Holy Grail' products for the presence of contact allergens.

Methods:
All 74 SCA-recommended '2020 Holy Grail' products were reviewed for presence of the ACDS Core 80 allergens or cross reactors as defined by the ACDS CAMP database.

Results:
The top three ACDS 80 Core allergens present were phenoxyethanol (n=37, 50.0%), tocopherol (n=33, 44.6%), and fragrance (n=17, 23.0%). With cross reactors included, the most common allergen was fragrance (n=41, 55.4%). User-determined popularity was examined by comparing net total interactions (aka 'total upvotes'). Among the top 10 most popular products, the most common allergens were tocopherol (n=4), phenoxyethanol (n=3), and propylene glycol (n=3).

Conclusions:
While the many of the products contained at least one ACDS Core Allergen, these were overall (with the exception of fragrance) infrequent sensitizers – and only one of the Top 10 products contained fragrance. This routine may be a safe starter skincare routine from a contact allergy perspective.

Acknowledgements:

Abstract Title: Routine Patch Testing to Carvone: North American Contact Dermatitis Group Experience, 2009-2018

Authors and Affiliations: Rob Shaver, Veteran's Administration (MN); Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Joel DeKoven, Uinversity of Toronto- Sunnybrook; Howard Maibach, Univ of California Hospital; James Taylor, Cleveland Clinic Lerner College of Medicine; Amber Atwater, Duke University Dermatology; Donald Belsito, Columbia University Irving Medical Center; Jonathan Silverberg, The George Washington University School of Medicine and Health Sciences; Margo Reeder, UW School of Medicine & Public Health; Kathryn Zug, Dartmouth-Hitchock Medical Center

Abstract

Objectives:
Carvone, a flavoring agent known for its spearmint-like odor, may cause allergic contact dermatitis. This study summarizes patch test reactions to carvone in the North American Contact Dermatitis Group database.

Methods:
Retrospective analysis was performed of patients tested to carvone (5% petrolatum), 2009-2018. Demographics were compared to those who were negative.

Results:
Of 24,124 individuals tested to carvone, 188 were positive (0.78%). As compared to carvone-negative patients, carvone-positive patients were significantly more likely aged >40 years (p=0.0284). Females (76.1%) and/or facial involvement (33.0%) were common in the carvone-positive group but not statistically different from carvone-negative patients. 73.3% (n=138) of reactions were currently relevant. Relevant sources included personal care products (46.3%, n=87) and food (14.3%, n=27). Co-reactivity with other fragrance/flavor markers was present in 60.6% of carvone-positive patients, most commonly fragrance mix I (34.6%), balsam of Peru (24.5%) and cinnamic aldehyde (15.4%).

Conclusions:
Ten-year prevalence of carvone sensitivity was 0.78%. Most carvone-positive patients were female, >40 years, and/or had facial dermatitis. Personal care products were the most common source. Almost 40% of carvone reactions would have been missed by relying on other fragrance/flavoring allergens.

Acknowledgements:

Abstract Title: Prevalence of Contact Allergens in Prescription Ophthalmic Medications

Authors and Affiliations: Rob Shaver, Veteran's Administration (MN); Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet

Abstract

Objectives:
Both active and inactive ingredients in topical ophthalmic agents may cause allergic contact dermatitis. Here, we examined ingredients in prescription topical ophthalmic medications available in the U.S.

Methods:
A comprehensive list of topical ophthalmic medications was generated using the AccessPharmacy database. Antibiotic, antibiotic/steroid, steroid, anti-viral, anti-fungal, anti-glaucoma, mydriatic, and miotic agents were included. For each formulation, ingredients were investigated using the National Institutes of Health U.S. National Library of Medicine database and/or manufacturer websites. Counts and proportions were calculated for all inactive ingredients, including those in the American Contact Dermatitis (ACDS) Core 90 Allergens Series.

Results:
264 unique prescription ophthalmic medications met inclusion criteria. The most common ACDS Core 90 allergen/cross-reactor inactive ingredient was benzalkonium chloride (65.9%, 179/264), followed by sorbates (11.7%, 31/264), parabens (6.8%, 18/264), sodium metabisulfite (3.8%, 10/264), propylene glycol (3.0%, 8/264), and lanolin (3.0%, 8/264). Approximately 22% (21.6%; 57/264) had no ACDS Core 90 allergens/cross-reactors inactive ingredients. The most common ACDS Core 90 allergen/cross-reactor active ingredients were aminoglycoside antibiotics, bacitracin/polymxin B and corticosteroids. Important non-ACDS Core 90 allergens included inactive ingredients such as EDTA 28.0% and thimerosal 2.7% as well as active ingredients, especially beta-blockers.

Conclusions:
Benzalkonium chloride, sodium metabisulfite, propylene glycol, and lanolin were common allergens. Most ophthalmic categories had low allergen formulations available.

Acknowledgements:

Abstract Title: Trends in Patch Testing by Health Care Providers Among US Medicare Beneficiaries

Authors and Affiliations: Partik Singh, Department of Dermatology, University of Rochester Medical Center; Walter Liszewski, Northwestern University

Abstract

Objectives:
Determine trends in utilization of patch testing in Medicare beneficiaries by various clinicians and demographics.

Methods:
Data from the 2012-2017 Medicare Public Use File and Physician Compare Tool were analyzed, including 82,241 total unique clinicians of whom 312 filed a patch testing claim. Frequencies of Healthcare Common Procedure Coding System code 95044 claims, clinicians, and beneficiaries were stratified by clinician years in practice, clinician gender, geographic region, and calendar year. Multivariable logistic regression models predicting patch testing were constructed with the above predictors.

Results:
Dermatologists had a steady share of patch tests (annual clinicians; annual patches) from 2012 (158; 258,735) to 2017 (199; 351,994); an increase of 25.9% and 36.0%, respectively. Allergists, however, had a marked increase in utilization of patch tests from 2012 (84; 62,498) to 2017 (187; 182,480); an increase of 122.6% and 192.0%, respectively. In multivariable logistic regression models, male dermatologists and allergists had increased odds of patch testing ($p<0.001$ for both), as did clinicians in the Northeast and Southern United States (p?0.003 for both).

Conclusions:
Overall, patch testing utilization is rising, perhaps due the need for greater diagnostic yield. Relative to dermatologists, patch testing is increasing among allergists. Addressing barriers to patch testing may increase rates of patch testing by dermatologists. Data are only available for fee-for-service Medicare part B patients; changes in utilization may be different for individuals, private insurance, or Medicare Advantage plans.

Acknowledgements:

Abstract Title: A Comparison of Patch Test Results between White and Asian Patients Suspected of Allergic Contact Dermatitis

Authors and Affiliations: Yunjie Li, California Dermatology Care; William Ting, California Dermatology Care

Abstract

Objectives:
Prevalence of allergens identified via skin allergy patch test as part of work up of allergic contact dermatitis (ACD) had been associated with race and ethnicity. 1 However, related research on Asian Americans has been lacking. The aim of this study was to compare the skin allergy patch testing results between Asian and white patients in suburban private practice dermatology practice in San Francisco Bay Area.

Methods:
A standard patch testing technique was applied to patients suspected of ACD using the North American Extended Patch test series (80 allergens) from January 1st , 2017 to November 30 th, 2020. 2 Comparison between white and Asian patients was analyzed using ? test.

Results:
Of 251 patients (187 females, 64 males) tested, 57.3% (144) were white and 42.3% (107) were Asian. 102 (71.0%) white and 78 (72.8%) Asian patients reacted positively to at least 1 allergen. The most commonly detected allergens of Asians were propylene glycol (17.6%), nickel (15.9%), fragrance mix (11.2%), cobalt (11.2%) and formaldehyde (10.2%), While for white patients, they were nickel (15.2%), propylene glycol (13.2%), sodium lauryl sulfate (12.5%), cobalt (10.4%), and balsam peru (10.4%). Of all allergens tested, Asians reacted more frequently to bacitracin (0.69% vs 4.67%, p < 0.05), fragrance mix (2.78% vs 11.2%, p < 0.05), and coconut diethanolamide (0% vs 2.8%, p < 0.05). Whites reacted more frequently to glyceryl monothioglycolate (4.16% vs 0%, p < 0.05).

Conclusions:
White and Asian patients displayed largely similar rates of patch test reactions, although with some significant variances. We cannot conclude whether the differences are due to variance in genetic or environmental exposure.

Acknowledgements:

Abstract Title: A Case of Systemic Contact Dermatitis to Black Seed Oil

Authors and Affiliations: Gabrielle Veillet-Lemay, University of Ottawa; Melanie Pratt, The Ottawa Hospital, University of Ottawa

Abstract

Objectives:
We present a novel case of systemic contact dermatitis to black seed oil. Black seed oil comes from the Nigella Sativa plant it is also commonly known as “black cumin”. Black seed oil contains many compounds including: thymoquinone, p-cymene, caracol, negellicine, negellimine, negellidine and alphahederin. The seeds of the plant are used to flavour food and are used in some cultures as a traditional medicine.

Methods:
N/A

Results:
A 57 year old female patient with a history of atopic dermatitis developed an eczematous eruption over her arms. She began applying black seed oil topically as well as ingesting orally to treat this rash. Within days she subsequently developed a widespread cutaneous eruption with flexural predominance. She was admitted to hospital and initially treated with antibiotics and then systemic corticosteroids. A diagnosis of systemic contact dermatitis was made with a SDRIFE (symmetric drug-related intertriginous and flexural exanthema) pattern. Once her eruption settled, she was patch tested to the following: North American Contact Dermatitis Group standard, cosmetic series, fragrance/flavour series, plants series and her own black seed oil (applied as an open patch test). Patch testing confirmed allergy to black seed oil as well as fragrance, tertiary butylhydroquinone, para-phenylenediamine (PPD) and equivocal reactions to linalool and lanoline.

Conclusions:
Dermatologists should be aware of black seed oil and its potential to cause a systemic contact dermatitis when ingested orally. Patch testing to tertiary butylhydroquinone is a screen for the thymoquinone that is present in black seed oil.

Acknowledgements:

Abstract Title: Patch Testing with Carmine 2.5% pet: the North American Contact Dermatitis Group Experience, 2011 – 2012

Authors and Affiliations: Erin Warshaw, University of Minnesota; HealthPartners; ParkNicollet; Lindsey Voller, University of Minnesota Medical School

Abstract

Objectives:
Carmine is a natural red dye which may cause allergic contact dermatitis (ACD). This study summarizes carmine (2.5% pet) reactions in consecutively patch tested patients.

Methods:
A retrospective analysis was conducted of North American Contact Dermatitis Group data compiled between 2011 – 2012. Patients were separated into two groups based on final interpretation code: 1) carmine positive ("allergic") and 2) negative ("not allergic"). Demographics and primary anatomical sites of involvement were compared between carmine-positive and carmine-negative patients. Positive carmine reactions were further analyzed based on likely clinical relevance, final reading reaction strength, and exposure sources.

Results:
Of 4,240 patients patch tested to carmine, 132 (3.1%) had positive reactions. As compared to carmine-negative patients, carmine-positive patients were significantly more likely to be female (77.7% vs. 68.3%; $p = 0.0237$) and have a final primary diagnosis of ACD (74.8% vs. 47.2%; $p < 0.0001$). Carmine-positive patients were significantly more likely to have involvement of all facial sites combined (48.1% vs. 29.9%; $p < 0.0001$) and lips (7.6% vs. 3.6%; $p = 0.0166$). At final reading, the majority of carmine reactions were weak (+, 64.9%). About half (53.4%) were currently clinically relevant; identified sources included personal care products (77.1%), especially make-up (31.4%) and lip products (8.6%).

Conclusions:
This is the first study reporting patch test results to carmine in consecutive patch-tested patients. Weak patch test reactions to carmine should be interpreted with caution. ACD to carmine should be suspected in women with facial and/or lip dermatitis, especially those using carmine-containing cosmetics.

Acknowledgements:

Abstract Title: Chromate-Induced Allergic Contact Dermatitis Treated With Dupilumab.

Authors and Affiliations: Britney Wilson, Memorial Sloan Kettering Cancer Center; Esther Balogh, Wake Forest School of Medicine; David Rayhan, Private Practice, Huntington Beach, California; Daniel Yousefzadeh, Saba University School of Medicine, Saba, Dutch Caribbean; Steven Feldman, Wake Forest School of Medicine

Abstract

Objectives:
Chromate is a common cause of occupational irritant and allergic contact dermatitis in occupational workers who handle work cement. Chromate-induced dermatitis is persistent and often difficult to treat. When therapeutics such as topical corticosteroids, topical calcineurin inhibitors, phototherapy and immune-modulating treatments like methotrexate fail, many patients are advised that avoidance may be the only remaining option – an option that may be particularly challenging if the patient's occupation necessitates chromate exposure.

Methods:
We report a case of severe chromate-induced allergic contact dermatitis in a 55-year-old cement mason that presented to the outpatient dermatology clinic in October 2018 with multiple scaly, erythematous, >5 cm plaques scattered over the skin of his hands, head and neck.

Results:
After a prior failed course of treatment with high potency topical corticosteroid, this patient was successfully treated with dupilumab.

Conclusions:
Given the success of dupilumab in our patient, we propose the consideration of dupilumab as an alternative treatment option for those suffering from chromate-induced allergic contact dermatitis that is refractory to ultra-high potency topical corticosteroids.

Acknowledgements:

Abstract Title: Chronic Eczematous Dermatitis in a Skin of Color Patient: Clinical Pearls and Lessons Learned

Authors and Affiliations: Britney Wilson, Memorial Sloan Kettering Cancer Center; Jenny Murase, UCSF/PAMF

Abstract

Objectives:
While the misdiagnosis of atopic dermatitis in skin of color patients is rare, the misinterpretation of severity or undertreatment of disease experienced by this patient is an occurrence frequently experienced by minority patients.

Methods:
We developed pearls based upon prior successful clinical experiences and a review of the literature that can be used to manage eczematous dermatitis in skin of color patients in whom traditional manifestations of atopic dermatitis like erythema may go unnoticed.

Results:
We recommend the following pearls that address the lived experiences, pigmentary changes, and genetic differences in patients of color suffering from chronic eczematous dermatitis.
1. Understand how implicit bias and stereotype threat can impede the successful treatment of minority patients
2. Avoid underestimating the magnitude of erythroderma by assessing more sebaceous areas of the skin like the nasolabial folds
3. Use a validated pruritus instrument for a more accurate assessment

Conclusions:
We present therapeutic pearls for the treatment of patients with skin of color based upon prior successful clinical experiences and a review of the literature, with the goal of helping patients who suffering from this chronic condition.

Acknowledgements:
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Abstract Title: Patch Test Results Under the Influence of Methotrexate

Authors and Affiliations: Carina Woodruff; Michael Kohn, University of California San Francisco; Nina Botto, UCSF

Abstract

Objectives:
Patch testing patients with severe dermatitis and/or concomitant conditions that require ongoing immunosuppressive therapy poses unique challenges to the clinician. Expert opinion drawn from clinical experience suggests methotrexate is the least immune suppressive agent, and as such, this is often the immunosuppressive agent of choice if therapy must be continued during patch testing. However, the validity of patch testing under the influence of methotrexate remains poorly understood. We sought to assess whether concomitant use of methotrexate affects the number and strength of patch test reactions.

Methods:
We conducted a retrospective exposed/non-exposed cohort study of patch test reactions for patients seen in a tertiary care referral center. 39 patients taking methotrexate at the time of patch testing were compared to 61 randomly selected, non-exposed (not taking methotrexate) patients who had been referred for patch testing.

Results:
Patients taking methotrexate were about half as likely as those not exposed to mount moderate or extreme patch test reactions (odds ratio 0.49, p=0.015). There was additionally a non-significant trend towards fewer total reactions (mild, moderate and extreme) amongst patients taking methotrexate compared to non-exposed controls (odds ratio 0.69, p=0.081).

Conclusions:
Contrary to reigning expert consensus, methotrexate appears to have a significant inhibitory effect on patch test reactions, bringing in to question the validity of patch test results in patients undergoing therapy with this agent.

Acknowledgements:
We would like to thank Yvonne Le for her assistance with data extraction and Leilani Reed for her assistance with the patch test program.

Abstract Title: Demographic and Clinical Characteristics of Patients with Eyelid Eczema in a Referral Center from 2004 to 2018

Authors and Affiliations: Mariana Hafner, Santa Casa de Misericordia de Sao Paulo; Ida Duarte, Santa Casa de Sao Paulo; Victoria Elia, Santa Casa de Misericórdia de São Paulo; Rosana Lazzarini, Santa Casa de Sao Paulo Medical School

Abstract

Objectives:
Background: Eyelid eczema have many etiologies, among them contact dermatitis. Objectives: To determine the demographical and clinical characteristics of patients with eyelid eczema who underwent patch testing in a referral center between 2004 and 2018; to determine the established diagnoses among the studied group; and to identify the main responsible allergens.

Methods:
Methods: Medical records were analyzed, and data was collected referring age, gender, ethnicity, occupation, atopy-related history, dermatosis evolution period, presence of lesions in other body areas, patch test results and final diagnosis.

Results:
Results: This study included 228 patients, of which 89.5% were women. Regarding clinical condition, 64.5% presented eczema lesions in other body parts besides the eyelids, mainly in other facial sites (51.8%). Final diagnosis was allergic contact dermatitis (ACD) in 61%, atopic dermatitis in 12.7%, undefined in 12.3%, irritant contact dermatitis in 7.9%. Regarding patch tests, 64.4% of patients had at least one relevant positive allergen, the major ones being: toluene-sulfonamide-formaldehyde resin, paraphenylenediamine, nickel sulfate, fragrance mix I, neomycin, and Kathon CG. As main etiologies in ACD cases, nail polish (36%), topical medicaments (27.2%), non-specified cosmetics (24.5%), hair dye (13.6%), metals (15.6%), rubber (6.8%), and shampoos (4%) could be identified.

Conclusions:
Conclusions: Results presented compatibility to data in the literature: predominance of women and most prevalent final diagnosis of allergic contact dermatitis. Cosmetics were the main causing group of ACD, followed by topical medicaments. Thus, when dealing with patients with eyelid eczema, investigation with patch testing is fundamental.

Acknowledgements:

Abstract Title: Patch Testing Children With Allergic Contact Dermatitis: A Follow-up Survey

Authors and Affiliations: Bruin Pollard, Washington University School of Medicine; Reid Collis, Washington University School of Medicine; Dylan Stahl, Washington University School of Medicine; Carrie Coughlin, Washington University School of Medicine; David Sheinbein, Washington University

Abstract

Objectives:
Patch testing is the gold standard method to diagnose allergic contact dermatitis (ACD). The aim of our study is to assess the value of patch testing results for home interventions and quality of life in children with ACD.

Methods:
In this cross-sectional survey, we used a questionnaire to follow up with families of ACD patients about changes since being patch tested, as well as preferences for counseling. Eligible participants were age =18 years during expanded series or personalized patch tests at Washington University School of Medicine from 2007–2020.

Results:
Out of 139 eligible participants, 77 consented and 43 completed the survey. The majority tested positive for multiple allergens (63%) and subsequently changed household products (71%). Before patch testing, only 26% of families read product labels often or always, compared to 71% immediately afterwards and 66% currently. On average, patients saw a relative reduction of 49% in severity of rash (8.2 to 4.2 out of 10), 46% in interference with activities (5.7 to 3.1), and 51% in embarrassment and self-consciousness (7.0 to 3.4) since patch testing. During counseling, families preferred knowing products to avoid (9.4/10 average rating of usefulness, 38% ranked as most useful) over specific product recommendations (8.5/10, 53% least useful), with varying opinions about allergen chemical names (7.9/10, 46% most useful, 28% least useful).

Conclusions:
Patch testing can make a meaningful difference for most, but not all, children with ACD. Communication during counseling should be individualized to family preferences.

Acknowledgements:

Abstract Title: Occupational Photoallergic Contact Dermatitis to Thiourea in a Firefighter

Authors and Affiliations: Michelle Pratt, University of Ottawa; Melanie Pratt, The Ottawa Hospital, University of Ottawa

Abstract

Objectives:
Thioureas are uncommon allergens used as additives in rubber products, particularly as vulcanization accelerators in the production of neoprene. We report a case of photo-allergic contact dermatitis to thiourea in a 29-year-old firefighter.

Methods:
Our patient presented with a 6-year history of recurrent widespread pruritic papulovesicular eruptions, with severe episodes occurring after sun exposure. Lesions would start on hands and feet and spread to proximal extremities, chest, and face, with sharp cut off at his shirt line. The most severe reaction occurred after spending the day at an outdoor pool. Allergic contact dermatitis with possible photoallergy were suspected.

Results:
Photopatch-testing in duplicate using the NACDG photoseries was strongly positive for thiourea (3+) on the irradiated side, whereas there was only a faint reaction at the non-irradiated site. Multiple potentially relevant sources of thiourea were identified, including a neoprene strap for CPAP mask, and neoprene hockey (helmet liner, mouth and chin guard) and firefighting (face respirator mask) equipment. Patch-testing to the NACDG standard series also revealed rosin (2+), and potassium dichromate (1+). Upon review, the patient used hockey tape containing rosin, and he had exposure to potassium dichromate via leather products, including footwear, hockey gloves, and firefighting equipment. Photopatch-testing in duplicate to personal products revealed negative results. The patient was counselled extensively on allergen avoidance, and alternative options were explored for his neoprene CPAP strap and firefighter/hockey equipment.

Conclusions:
Although an uncommon allergen, physicians should consider thiourea sensitization, and potential photoaggravation, in patients with suspected rubber allergy.

Acknowledgements:

Abstract Title: Contact Allergens in Children using Extensive Allergen Panels: A Retrospective Cohort Study

Authors and Affiliations: William Ting, California Dermatology Care; William Ting, California Dermatology Care

Abstract

Objectives:
To present a 4-year retrospective review of pediatric patch test results using the North American extended 80 Comprehensive Series at our clinic.

Methods:
Data was gathered for patients 18 years or younger who presented for patch testing at the California Dermatology Care clinic from January 1, 2017, to February 13th, 2021. Patch testing was performed according to North American Contact Dermatitis Group standards using the North American extended 80 Comprehensive Series. Positive reading is defined as any reading with a 1+ or above reaction.

Results:
A total of 39 patients with a mean (SD) age of 13.12 (3.5) years were evaluated for patch test. The three most frequent positive allergens were propylene glycol (13.5%), Cobalt chloride-hexahydrate (10.8%), Benzoyl peroxide (10.8%). No significant association was found between age and allergen sensitivity or between sex and allergen sensitivity. 18.9% of patients had a trace reaction to Nickel Sulfate Hexahydrate.

Conclusions:
The most common patch test allergen for pediatric patients in this cohort is propylene glycol. Identification of relevant allergic contact trigger can enhance dermatologic care for children afflicted with persistent dermatitis.

Acknowledgements:
We thank Ronni Yunjie Li, B.S. for her invaluable assistance in this project

Abstract Title: Allergen Profiles of Best-Selling Hair Products Marketed to Black Women

Authors and Affiliations: Chloe Walker, Harvard Medical School-Massachusetts General Hospital; Kelly Flanagan, Harvard Medical School-Massachusetts General Hospital; James Pathoulas, Harvard Medical School-Massachusetts General Hospital; Isabel Pupo Wiss, Harvard Medical School-Massachusetts General Hospital; Maryanne Senna, Massachusetts General Hospital

Abstract

Objectives:
Allergenic personal care products (PCPs) have been increasingly associated with allergic contact dermatitis and inflammatory alopecia. It is unclear how allergenic PCPs impact Black women specifically in the setting of unique hair care practices. Herein, we evaluated the allergenic profiles of best-selling Black women's hair products.

Methods:
In October 2020, top online retailers (Walmart, Amazon and Target) were surveyed for best-selling Black women's hair products using key words. Full ingredient lists were analyzed for known contact allergens as defined by the NACDG 2015-2016 series.

Results:
82 hair products marketed to Black women (28 rinse-out shampoos, 28 rinse-out conditioners, 26 leave-in conditioners) were evaluated. 72 (88%) contained at least one allergen and 27 (33%) contained three or more allergens. There was no significant difference in the mean number of allergens between leave-in conditioners and combined rinse-out products (2.27 vs 1.77, $p>0.05$). Fragrance Mix II was the most common allergen in leave-in conditioners (100%) and rinse-out products (82%). Formaldehyde-releasers (FRs) occurred in 25% of rinse-out conditioners, 15% leave-in conditioners, and 11% rinse-out shampoos. Diazolidinyl urea was the most commonly occurring FR in rinse-out shampoos (7.1%) and leave-in conditioners (11.1%). DMDM hydantoin was the most commonly occurring FR in rinse-out conditioners (21.4%).

Conclusions:
Most best-selling Black women's hair products contain known allergens. 1 in 4 conditioners, often used for moisture retention by Black women, contain potentially harmful FRs. High prevalence of allergenic PCPs warrants patient counseling tailored to ethnic differences in PCP use and allergen profiles. Limitations include online retailer information that is subject to change.

Acknowledgements:

Abstract Title: Histopathologic Diagnosis of Psoriasiform Dermatitis in a United States Cohort 2004-2017: Final Clinical Diagnosis, Clinical Characteristics, Treatment, Time to Diagnosis and Follow Up

Authors and Affiliations: Jordan Ward, Augusta University Dermatology; Beiyu Liu, Duke University School of Medicine; Cynthia Green, Duke University Medical Center, Department of Biostatistics and Bioinformatics; Amy Petty, Duke University School of Medicine; Adam Brys, Duke University Medical Center; Christopher Henderson, Duke University Medical Center; Amber Atwater, Duke University Dermatology; Rami Al-Rohil, Department of Dermatology, Duke University Medical Center, Durham, NC

Abstract

Objectives:
Determine the final clinical diagnosis, clinical characteristics, treatment(s) and follow-up in patients with histopathologic diagnosis of psoriasiform dermatitis.

Methods:
Retrospective analysis of patients with histopathologic diagnosis of psoriasiform dermatitis 2004-2017.

Results:
Patients (N=586) were most often female (53.4%) and White (61.3%); median age was 54 years. Median time from histopathologic to clinical diagnosis was 0.5 months. Clinical diagnoses most associated with histopathologic diagnosis of psoriasiform dermatitis were psoriasis (N=191, 32.7%), chronic dermatitis (N=90, 15.4%), cutaneous T-cell lymphoma or parapsoriasis (CTCL-PA) (N=48, 8.2%). Most patients used topical medications (N=462, 78.8%); 95.7% of these were corticosteroids. Broad systemic immunosuppressants (N=64, 10.9%) and phototherapy (N=51, 8.7%) were next most common. Patients with final clinical diagnosis of chronic dermatitis were less often on broad systemic immunosuppressants (5.6%) as compared to patients with psoriasis (15.2%); patients with clinical diagnosis of psoriasiform dermatitis were more frequently on broad systemic immunosuppressants (21.2%) and phototherapy (18.2%) as compared to those with psoriasis and chronic dermatitis.

Conclusions:
The histopathologic term psoriasiform dermatitis most commonly represents psoriasis, chronic dermatitis and CTCL-PA; clinical characteristics and treatment regimens are variable and require clinicopathologic correlation.

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Dr. Atwater received a Pfizer Independent Grant for Learning & Change and has consulted for Henkel.