CONTACT DERMATITIS 2008

Blending Science with best Practice — L'alliance du laboratoire et de la clinique

FINAL SCIENTIFIC PROGRAM

THURSDAY, AUGUST 28, 2008

08:15 Welcome	Dr. Denis Sasseville
ECRDG Meeting.	**AM & PM: Fundamental Aspects of Contact Allergy**
08:20 – 10:00	Oral Communications Moderator: Dr. G. Frank Gerberick
08:20 – 08:40	Dr. Ian Kimber A History of Langerhans Cell Migration
08:40 – 09:00	Dr. Rebecca J. Dearman Chemical Allergy, Ageing and Cutaneous Immune Responses
09:00 – 09:20	Cindy Ryan, Sylvie Python, François Python, Pierre Aeby, G. Frank Gerberick Comparison of Contact Allergen-induced Gene Expression Changes in Human Peripheral Blood Mononuclear Cell-Derived Dendritic Cells and DC-Surrogate Cell Lines
09:20 – 09:40	Dr. Carsten Goebel Skin sensitization to p-phenylenediamine: The diverging roles of oxidation and N-acetylation for dendritic cell activation and the immune response
09:40 10:00	Dr. Anthony Gaspari, Hashmat Sikder, Yuming Zhao, Anna Balato, Rita Fishelevich, Dhan Kalvakolanu, Peter Johnson, Transcriptional control for CD1d by human keratinocytes: Implications for contact dermatitis
10:00 – 10:30	Break
10:30 – 11:50	Oral Communications Moderator: Dr. Rebecca J. Dearman

10:30 – 10:50	Dr. Nicola J. Gilmour, RJ Safford The Threshold of Toxicological Concern: Application to Skin Sensitization
10:50 – 11:10	Dr. Maja Aleksic, Delphine Roger, Emma Thain, Sandrine Jacquoilleot, Raniero Zazzeroni Reactivity Testing Strategies: Covalent Modification of Single Nucleophile Peptides
11:10 – 11:30	Hitoshi Sakaguchi, Takao Ashikaga Applicability Domain Based on 100 Test Chemicals data and Evaluation of Inter-laboratory Reproducibility for the h-CLAT (In Vitro Skin Sensitization Test)
11:30 – 11:50	Dr. Pierre Aeby The COLIPA Strategy for Developing and Pre-validating In Vitro Alternatives for Skin Sensitization Testing
11:50 – 13:15	Lunch
13:15 – 14:55	Keynote Lecture & Oral Communications Moderator: Dr. Ian Kimber
13:15 – 14:15	Keynote Lecture Pr. Jean-Pierre Lepoittevin New Developments on the Chemical Reactivity of Sensitizers
14:15 – 14:35	Dr. Gerald B. Kasting Update on In Silico Epidermal Bioavailability Model
14:35 – 14:55	Leslie M. Foertsch, G. Frank Gerberick, Brad Price, John Troutman, Jean-Pierre Lepoittevin The Development and Utility of Peptide Reactivity Assays for Screening Contact Allergens
14:55	Break
15:30	Departure for the Botanical Garden – Guided tour by Dr. Denis Sasseville, with emphasis on plants that cause allergic, irritant and photocontact dermatitis

FRIDAY, AUGUST 29, 2008

ECDRG Meeting	**AM: Fundamental aspects of contact allergy**
08:30 – 12:00	Keynote Lectures & Oral Communications Moderator: Dr. Anthony Gaspari
08:30 – 9:30	Keynote Lecture Dr. Akira Takashima In Vitro Assay Platforms to Identify Skin Irritants and Contact Allergens
09:30 – 09:50	Dr. Susan Nedorost, Kristen Kobaly, Thomas McCormick, Ally Khan Somani Effect of Occlusion on the Skin in Atopic Dermatitis Patients
09:50 – 10:20	Break
10:20 – 11:20	Keynote Lecture Dr. Daniel H. Kaplan Insights into Langerhans Cell Function from Langerhans Cell Deficient Mice
11:20 – 11:40	Dr. Ponciano D. Cruz Jr., Hideo Akiyoshi, Jin-sung Chung, Mizuki Tomihari, Kiyoshi Ariizumi Depletion of Syndecan-4-positive T cells by Toxin-bearing DC-HIL Blocks Elicitation of Contact Hypersensitivity: A New Model for Treating T cell-driven Disease".
11:40 – 12:00	Dr. Matthias G. Vey Safe Use of Fragrances – A Myth ?
12:00 – 13:20	Lunch

ACDS/GERDA/ICDRG Meeting	**PM: Clinical aspects of contact allergy**
13:20 – 13:30	ACDS Presidential Address Dr. Erin Warshaw
13:30 – 15:00	Oral Communications Moderator: Dr. Denis Sasseville
13:30 – 13:45	Pr. An E. Goossens Emerging Allergens in Cosmetics

13:45 – 14:00	Dr. Denis Sasseville, Yuka Asai Sensitization Rates of Traditional and Newer Fragrance Allergens
14:00 – 14:15	Dr. Andreas J. Bircher, T. Harr, S. Bach, K. Scherer Iodine is Rarely the Elicitor in Hypersensitivity Reactions to Iodinated Contrast Media
14:15 – 14:30	Dr. Howard I. Maibach Sherlock Holmes Meets Howard Maibach: The Case of the Missing Allergen
14:30 – 14:45	Dr. Michel Castelain Ocular Contact Allergy
14:45 – 15:00	Dr. Erin Warshaw, H. Bucholz, H.I. Maibach, K.A. Zug, D.V. Belsito, V.A. DeLeo, J.F. Fowler, C.G.T. Mathias, M.D. Pratt, D. Sasseville, F.J. Storrs, J.S. Taylor, J.G. Marks, R.L. Rietschel Allergic Patch Test Reactions Associated with Cosmetics
15:00 – 15:30	Break
15:30 – 15:45	Dr. Françoise C. Giordano-Labadie, Claire Mailhot, Fabienne Rancé, Valérie Lauwers-Cances, Carle Paul Prevalence and Risk Factors for Allergic Contact Dermatitis to Topical Treatment in Atopic Dermatitis”
15:45 – 16:00	Dr. Linda Moreau Contact Dermatitis in Leg Ulcer Patients
16:15 – 16:30	Dr. Brigitte Milpied-Homsi Drug Eruptions to Antiretroviral Agents
16:30 – 16:45	Dr. Simon R. Nigen, Lori E. Shapiro, Sandra R. Knowles, Manuela G. Neuman, Neil H. Shear Utility of Patch Testing in Patients with Anticonvulsant-induced Hypersensitivity Syndrome
16:45 – 17:00	Dr. Dominique Tennstedt Pompholyx or Pseudopompholyx? Cases for Diagnosis

SATURDAY, AUGUST 30, 2008

ACDS/GERDA/ICDRG Meeting AM: Clinical Aspects of Contact Allergy

08:00 – 09:00	Keynote Lecture (Introduced by Dr. Denis Sasseville) Pr. Jean-Marie Lachapelle Patch Testing: from Jadassohn to the Present and Future
09:00 – 10:10	Oral Communications Moderator: Dr. Linda Moreau
09:00 – 09:15	Dr. James G. Jr. Marks The Alstroemeria Allergic Contact Dermatitis Story
09:15 – 09:30	Dr. Christophe LeCoz Phytodermatitis: Clinico-Chemical Confrontation
09:30 – 09:45	Dr. Joseph F. Fowler Jr., Nigel Langley Update on Lanolin Allergy
09:45 – 10:00	Dr. Martine M. Vigan, Pascal Girardin Late Positive Patch Test Reactions
10:00 – 10:30	Break
10:30 – 12:15	Oral Communications Moderator: Dr. Erin Warshaw
10:30 – 10:45	Dr. David Adams, J. G. Marks, B. E. Anderson, J. Yankura Spa Contact Dermatitis
10:45 – 11:00	Dr. Gilbert Jelen Paronychia and Contact Dermatitis from Coffee Powder
11:00 – 11:15	Dr. Andreas J. Bircher, Christoph Strub, Kathrin Scherer Unusual Exposure to Metals Resulting in Systemic Contact Dermatitis: Report on Three Cases
11:15 – 11:30	Dr. Golara Honari, Stephen Ellis, Apra Sood, James S. Taylor Cutaneous Metal Sensitivity as Potential Risk Factor for Intra-coronary Stent Re-stenosis
11:30 – 11:45	Dr. Andreas J. Bircher, Peter Häusermann, Kathrin Scherer, Erwin Kump

	Contact Sensitivity to Metals: Evidence of Irritant Tests in Metal Implant Patients
11:45 – 12:00	Pr. Thomas L. Diepgen Management of Chronic Hand Eczema
12:00 – 12:15	Dr. Joel G. De Koven Contact Dermatitis: What's New 2007-2008?
12:15 – 13:30	Lunch

ACDS/GERDA/ICDRG Meeting PM: Occupational Dermatitis

13:30 – 17:00	Keynote Lecture & Oral Communications Moderator: Dr. Joel DeKoven
13:30 – 14:30	Keynote Lecture Dr. Melanie D. Pratt Occupational Cases from the Ottawa Hospital Patch Test Clinic
14:30 – 14:45	Dr. Marie-Bernadette Cleenewerck Occupational Cutaneous Contact Allergy from Isothiazolinones
14:45 – 15:00	Dr. Sandy M. Skotnicki-Grant The Chronic Effects of Repeated Mechanical Trauma to the Skin
15:00 – 15:15	Pr. Christian Géraut Chemically-induced Occupational Dermatitis: Multifactorial Etiology and Prevention Strategies
15:15 – 15:30	Dr. Aaron L. Sussell, Thomas Robins, David Garabrant, Gordon Reeve, Allen Stout, Boris Lushniak A Case-control Study of Occupational Contact Dermatitis among Automobile Assembly Workers
15:30 – 16:00	Break
16:00 – 17:00	Oral Communications Moderator: Dr. Sandy M. Skotnicki-Grant
16:00 – 16:15	Dr. D. Linn Holness, Joel G. DeKoven, Sandy M. Skotnicki-Grant, Melanie D. Pratt, Lynette Dilworth, Pilar Gomez, Irena Kudla, Grace Wozniak

	The Occupational Disease Specialty Program: Five Years Experience
16:15 – 16:30	Dr. Joel G. DeKoven, Irena Kudla, D. Linn Holness Multidisciplinary Assessment of Workers with Occupational Contact Dermatitis
16:30 – 16:45	Dr. Gillian C. de Gannes Occupational Contact Dermatitis: A Practice Audit from the University of British Columbia Contact Dermatitis Clinic
16:45 – 17:00	Dr. Laurie M. Parsons The Role of Quaternium 15 in Occupational Dermatitis
17:00	Closing remarks Dr. Denis Sasseville

ABSTRACTS

ECDRG Keynote Lectures & Oral Communications

New Developments on the Chemical Reactivity of Sensitizers

Jean-Pierre Lepoitevin
Université Louis Pasteur, Strasbourg, France

Chemical reactions and/or interactions are involved throughout the biological processes which will result in a patient developing delayed hypersensitivity, whether it be during the crossing of the cutaneous barrier, during the formation of the hapten-protein complex or during the phenomenon of recognition between the antigen and the T-cell receptors. To cause sensitization, a compound has to penetrate the skin, where it may be metabolized, and react with epidermal proteins to form new chemical structures that are recognized as antigenic. We will discuss the way low-molecular-weight chemicals can react with skin proteins to form complete antigens and how these structures could be recognized by T-cell receptors. Mechanistic investigations performed using carbon 13 labeled molecules have shown, for several sensitizers ranging from moderate to strong, a reactivity pattern toward amino acids that can be in some cases combined with a mechanistic specificity. The knowledge of how haptens can modify proteins is the basis for the development of predictive alternative tests aimed at the identification of hazard and potency, such as Structure Activity Relationships (SAR), Quantitative Structure Activity Relationships (QSAR). This has also been the base for the design of peptide reactivity tests aimed at the “in chemico” identification of sensitizers.

In Vitro Assay Platforms to Identify Skin Irritants and Contact Allergens

Akira Takashima
The University of Toledo College of Medicine, Toledo, OH, USA

The skin is equipped with fine networks of professional antigen presenting cells, including epidermal Langerhans cells (LC), dermal dendritic cells (DC), and dermal macrophages. Studies from many laboratories have established the concept that LC and DC play crucial roles in the pathophysiology of contact dermatitis. In fact, topical application of contact allergens triggers robust activation of epidermal LC, leading their phenotypic and functional maturation into fully potent antigen presenting cells. In an attempt to develop *in vitro* assays for assessing *in vivo* potentials of industrial chemicals to cause contact dermatitis, we have developed novel cell-based assays using the XS106 LC-like DC line and the Pam 212 keratinocyte (KC) line. First, because rapid and marked IL-1b mRNA is a hallmark of LC activation/maturation, we engineered the XS106 DC to express the YFP reporter gene under the control of IL-1b promoter. The resulting DC biosensor clone (XS106-pIL1-YFP) showed high sensitivity and broad reactivity to all tested stimuli known to induce LC maturation. Secondly, to

study molecular mechanisms controlling DC activation in a more systematic fashion, we transduced the XS106 DC to express the Luc reporter gene under the control of each of 15 different *cis*-enhancer elements. The resulting DC-based transcription factor profiling system revealed an extraordinary capacity of DC to discriminate different stimuli by activating distinct sets of gene transactivation pathways. Third, based on our finding in CD39-deficient mice that ATP released from chemically injured KC serves as a causative mediator of both irritant and allergic contact dermatitis, we developed a KC-based ATP release assay. Our date support the hypothesis that one can identify skin irritants and contact allergens by combining these *in vitro* assays.

Effects of Occlusion on the Skin in Atopic Dermatitis Patients

Susan Nedorost, Thomas McCormick, Ally Khan Somani,
University Hospitals of Cleveland Case Medical Center, Cleveland, OH, USA

Background: Atopic dermatitis (AD) may be exacerbated by certain textiles and occlusion.

Objective: We sought to evaluate the response of AD patients to polyester and lyocell fabrics, occlusive polyethylene wrap, and sodium lauryl sulfate (SLS), an irritant, by measuring transepidermal water loss (TEWL) as well as inflammatory cytokine and chemokine mRNA produced by the skin in response to these materials.

Methods: Six patients with AD wore t-shirts split vertically into polyester and lyocell for four days, as well as occlusive wrap and SLS patches taped to the skin. At four days, TEWL changes were measured and compared to baseline. Cytokine and chemokine mRNA for IL-8, IL-1α, and IL-1RA, as well as the 18srRNA housekeeping gene, was obtained via tape stripping the skin, and measured using quantitative real time PCR.

Results: TEWL was significantly increased by both polyethylene occlusion and SLS after four days. In addition, polyethylene occlusion induced IL-8 and IL-1α levels similar to or exceeding that of SLS. IL-1RA was down regulated by occlusion relative to SLS. Minimal cytokines were induced by polyester and lyocell.

Conclusions: Occlusion increases TEWL and up-regulates the inflammatory cytokines IL-8, IL-1α, and IL-1RA in patients with AD.

Insights into Langerhans Cell function from Langerhans Cell Deficient mice

Daniel H. Kaplan
University of Minnesota, Minneapolis, MN, USA

Langerhans Cell (LC) are a subset of dendritic cell that reside in the epidermis of the skin. They are professional antigen-presenting-cells and are uniquely efficient at initiating T cell responses. In the steady-state, immature LC in the epidermis acquire antigens present in the skin. Activation by a variety of environmental and microbial stimuli initiates LC maturation and promotes their migration to regional lymph nodes (LN). Once in the LN, LC present the antigen acquired in the skin to T cells thereby initiating adaptive immune responses. This process has been dubbed the “LC paradigm” and is believed to be the central initiating event in a variety of cutaneous inflammatory processes including allergic contact dermatitis. We have recently developed transgenic mice that constitutively express diphtheria toxin in epidermal LC (Langerin-DTA). These mice have a specific, complete and durable absence of LC. Using classic assays of the cutaneous immune response we have shown that contact hypersensitivity (CHS), a model for allergic contact dermatitis, and rejection of allogeneic skin grafts do not require LC. Instead, we found that CHS responses and rejection of minor-mismatched skin grafts were enhanced in the absence of LC. We have also identified a distinct subset of DC resident the dermis that are required for efficient CHS responses. Thus, we propose a new model in which DC resident in the dermis participate in the development of cutaneous immune responses while epidermal LC regulate that response.

Safe use of fragrances - a myth?
Matthias G. Vey
International Fragrance Association, Brussels, Belgium

Information will be provided about IFRA (International Fragrance Association) and RIFM (Research Institute for Fragrance Materials) and how both groups care about the safe use of fragrance ingredients. Recently taken measures to further improve the system of IFRA Standards to better protect the consumer from allergic reactions to fragrance ingredients will be described, with special focus on the QRA (Quantitative Risk Assessment) recently made basis for the IFRA Standards on sensitization. In addition, using specific material examples, success stories but also failure to provide adequate protection of the consumer will be described.

ACDS/GERDA/ICDRG Keynote Lectures & Oral Communications

Emerging Allergens in Cosmetics
An E. Goossens
University Hospital, K.U. Leuven, Belgium

Fragrance-mix II (farnesol, citral, citronellol, alpha-hexylcinnamal, coumarin, and hydroxyisohexyl 3-cyclohexene carboxaldehyde or Lyral®), proves to be an important additional fragrance allergy marker. Within the preservatives, the

frequency of contact-allergic reactions to the methyl(chloro)-isothiazolinone mixture has declined in recent years, but reactions to formaldehyde & releasers do increase. As to methyldibromo glutaronitrile, the EU does not longer permit its use in cosmetic products (March 2007). Oxidative-type hair dyes may cause severe symptoms and even immediate-type reactions; there are other markers than para-phenylenediamine (PPD) that need to be tested. The contribution of sunscreens to cosmetic allergy seems relatively small despite the increase in their use. Cases of photoallergic contact dermatitis, also from the newer sunscreens octyl triazone and particularly octocrylene have recently appeared though. A large number of emulsifiers, emollients, and humectants are increasingly being reported as cosmetic contact allergens. Some of these substances are, because of their low irritancy potential and “skin-mildness”, often incorporated in skin-care products for use on “intolerant or sensitive skin. Examples are butylene glycol, ethylhexylglycerin, and alkyl glucosides, such as e.g. decylglucoside, being a hidden allergen in the sunscreen methylene bis-benzotriazolyl tetramethylbutylphenol. Also copolymers (higher molecular weight) and non-reactive chemicals such as, for example, esters such as cetearyl- and nonylisononanoate may cause contact allergy. Last but not least, natural ingredients, having become very popular in recent years, should be avoided by fragrance-sensitive subjects, and controversies have arisen regarding the use of protein-derived ingredients, especially in atopic children.

Sensitization Rates of Traditional and Newer Fragrance Allergens

Denis Sasseville
McGill University Health Centre, Montréal, QC, Canada

Fragrances often cause allergic contact dermatitis. Fragrance compounds are ubiquitous in products ranging from cosmetics to household cleaners. Centers around the world have reported an increase in positive reactions to fragrance materials. However, not only is the prevalence of fragrance allergy increasing, but the rising use of synthetic fragrance molecules together with increased public interest in non-traditional or ‘natural’ remedies has resulted in a changing pattern of fragrance sensitizers found in products on the market. The standard fragrance mix has been used in patch testing for thirty years. It is believed to pick up, at best, 60-70% of all cases of contact allergy to fragrances. Previous investigations have focused on broadening the scope of fragrance allergens to include newer sensitizers, such as Lyral, and essential oils. This study expands on this line of investigation. Using a database of patients undergoing patch testing at the McGill University Health Centre, the goal of this study is to compare the number of patients with positive patch test reactions to conventional fragrance allergens (Fragrance mix I and Balsam of Peru) with those with positive reactions to other fragrance sensitizers such as fragrance mix II and lyral, as well as jasmine, lavender, sandalwood and tea tree oil.

Iodine is Rarely the Elicitor in Hypersensitivity Reactions to Iodinated Contrast Media

Andreas J. Bircher, T. Harr, S. Bach, K. Scherer
Allergology University Hospital, Basel, Switzerland

Introduction: Hypersensitivity reactions to iodinated contrast media (ICM) include immediate reactions (ITH) as well as delayed reactions (DTH). In the latter, delayed positive skin tests suggest a T cell-mediated mechanism. In both reactions the role of iodine has not been clarified, although such patients are often labelled as being “allergic to iodine”. We investigated the presence of iodine hypersensitivity in patients with reactions to ICM.

Methods: 14 patients (6 male, 8 female, mean age: 61.6 years) with a history of ITH (group A, n=6) or DTH (group B, n=8) reactions to ICM/iodine were investigated. Depending on the clinical reaction, skin prick tests, IDT and patch tests (PT) with several ICM and different iodine formulations were done. After obtaining informed consent, all underwent oral provocation with iodine.

Results: In group A, positive skin tests to 2 ICM were observed. One patient reacted twice to oral iodine with an urticarial exanthem. In group B, a T cell-mediated sensitization to one or more ICM was identified in 7/8. In 6/8 patients additional contact sensitizations to one or more iodine formulations was found. Oral provocation with iodine was positive in 2/8 patients.

Discussion: We have previously demonstrated in a patient with iodine mumps that oral challenge with Lugol’s solution can elicit a hypersensitivity reaction to iodine. In these 14 patients we were able to show that in the majority iodine is not the eliciting agent. Therefore, more likely the ICM molecules and not iodine are the eliciting allergens.

Sherlock Holmes Meets Howard Maibach: The Case of the Missing Allergen

Howard I. Maibach
UCSF Dermatology, San Francisco, CA, USA

Some allergens reported at first in a few patiens (e.g. Otis Jillson’s publication on ethylenediamine) turn out to be common in many countries – and eventually are adapted for the “Routine or Extended Routine Series”).

Others are reported but once or twice– and then disappear from clinical view. This presentation offers explanations and hypothesis for the disappearing allergen.

Ocular Contact Allergy

Michel Castelain

Marseille, France

Ocular contact allergy includes contact conjunctivitis and eyelid eczema. Both can occur together. Women are predominantly affected and allergic investigation is mandatory. Pathogenesis most often involves a delayed immune reaction. Pronounced palpebral edema may hinder the diagnosis.

We report our experience, from 1993 to 2008, with 1190 patients referred by ophthalmologists, and of which 827 have been tested. Others had non-allergic conditions (rosacea, seborrheic dermatitis) or aggravating factors requiring elimination prior to testing (smoking, conditions or drugs acting upon lachrymal secretions).

All allergens that can get on or around the eye can be implicated. They include ophthalmic ointments and drops, perfumes and cosmetics applied to the face, and any allergen, occupational or not, that can be carried to the eyes by the hands. Finally, allergens can reach the eye through connubial and airborne exposure, or systemic re-exposure.

The allergic investigation will entail testing with the standard series, aeroallergens and suspected products brought by the patient. Allergens do not penetrate equally the skin of the eyelids and of the back. The standard method of patch testing is often unrewarding and modified techniques are needed, such as the stripping patch test or the repeated open application test (ROAT). Some cosmetics (mascara, foams, etc.) are irritants when applied undiluted under occlusion and must be diluted or tested with the semi-open technique.

Allergic Patch Test Reactions Associated with Cosmetics

Erin M. Warshaw, H. Buchholz, H.I. Maibach, K.A. Zug, D.V. Belsito, V.A. DeLeo, J.F. Fowler, C.G.T. Mathias, M.D. Pratt, D. Sasseville, F.J. Storrs, J.S. Taylor, J.G. Marks, R.L. Rietschel
North Amnerican Contact Dermatitis Group, USA & Canada

Objectives: 1) Characterize patients in the North American Contact Dermatitis Group (NACDG) database with allergic patch test reactions associated with a cosmetic source; 2) identify common cosmetic allergens; and 3) explore gender and occupational associations.

Methods: IRB-approved, retrospective, cross-sectional analysis of 10,061 patients.

Results: 1582/6621 (23.8%) females and 611/3440 (17.8%) males had at least one allergic patch test reaction associated with a cosmetic source. Of “allergic” patients (those with at least one allergic reaction, n=6815), females were 1.21 times more likely to have an allergic reaction associated with a cosmetic source

than males (p<.0001, 95% CI 1.12, 1.31). Within the “cosmetic allergic” group (n=2243), cosmetics NOS (not otherwise specified), moisturizers, and hair care products were the most common product categories in both males and females. Nail products and makeup were both more common in females than males. 125 patients had allergic reactions to a cosmetic which were occupationally-related (>91% currently relevant); most were hairdressers and most were to hair care products. Specific cosmetic-associated allergens included fragrances, preservatives, and emulsifiers, all of which were common in both females and males. Three antigens were more common in females than males: tosylamide formaldehyde resin (8.3% vs. 0.5%), glyceryl thioglycolate (5.3% vs.1.5%) and methyl methacrylate (4.1% vs. 0%). 438/2681 (16.3%) of cosmetic-allergic patients only reacted to a non-NACDG standard allergen.

Conclusion: Cosmetic sources of allergens were common, representing 21.8% of patients referred for patch testing by the NACDG, 2001-2004. Body location of dermatitis, cosmetic categories, and specific allergens differed somewhat by gender. Funded by a Women’s Dermatologic Society Academic Research Grant

Prevalence and Risk factors for Allergic Contact Dermatitis to Topical Treatment in Atopic Dermatitis

Françoise Giordano-Labadie[1], Claire Mailhol[1], Fabienne Rancé[2], Valérie Lauwers-Cances[3], Carle Paul[1]
[1]Department of Dermatology, Purpan Hospital, [2]Pediatric Allergology, Pediatric Hospital, [3]Epidemiology and Methodology in Clinical Research, Paul Sabatier University, Toulouse, France.

Background: There is little information regarding the risk of sensitization associated with topical AD treatment.

Objectives: The objective of this study was to assess the frequency of sensitization to topical treatment of AD in children and to determine risk factors associated with skin sensitization. Patients/Methods: Six hundred and forty one children with AD were systematically patch tested with 7 agents of common topical treatment : chlorhexidine, hexamidine, budesonide, tixocortol pivalate, bufexamac, sodium fusidate and with the current emollient used by the child. The following variables were recorded: age, sex, age at onset of AD, associated asthma, severity of AD. Skin prick tests to inhalant and food allergens were used to explore the atopic background.

Results: Forty-one positive patch tests were found in 40 patients (6.2%). Allergens were emollients (47.5%), chlorhexidine (42.5%), hexamidine (7.5%), tixocortol pivalate and bufexamac (2.5% each). Risk factors associated with sensitization to AD treatment were AD severity (OR: 3.3 for moderate to severe AD), AD onset before the age of 6 months (OR: 2.7), and atopy (OR: 2.5).

Conclusions: Topical treatment of AD is associated with cutaneous sensitization. Antiseptics and emollients represent the most frequent sensitizers. Risk factors associated with sensitization to AD topical treatments are AD severity, early AD onset and atopy.

Contact Dermatitis in Leg Ulcer Patients

Linda Moreau
McGill University Health Centre, Montréal, QC, Canada

Patients with venous insufficiency and leg ulcers have a particularly high risk of contact sensitization. There are many factors that have been thought to play a role in the cause of sensitization. We will enumerate and discuss some of these factors. The contact allergy often complicates the treatment and makes it much more difficult to manage. We will discuss the recognition of this entity as to its presentation in this setting. Finally, we will enumerate all potential allergens that have been documented to cause allergies in the treatment of leg ulcer patients and discuss some management key points.

Drug Eruptions to Antiretroviral Agents: Use of Patch Testing

Brigitte Milpied
Centre Hospitalier Universitaire de Bordeaux, France

Hypersensitivity reactions (HSRs) have been observed to several drugs used to manage HIV and associated infections, with the antiretrovirals nevirapine and abacavir being the best characterized of the syndromes. The identification of HSRs can be challenging due to the heterogeneity of their clinical manifestations. Furthermore, with multidrug regimens – common in HIV management – it may be difficult to identify the responsible drug. Epicutaneous patch testing, a procedure well established in contact dermatitis, has also been used as a supplementary diagnostic test for several drug-related HSRs; its usefulness, however, depends on both the drug and syndrome involved. This review discusses the application of patch testing to the investigation of hypersensitivity to antiretrovirals, with particular emphasis on abacavir. The utility of patch testing as an adjunctive test for demonstration of immunologically-mediated abacavir hypersensitivity has been investigated in recent pharmacogenetic studies; these studies support the use of patch testing as a research tool to identify true immunologically-mediated abacavir HSRs.

Utility of Patch Testing in Patients with Anticonvulsant-Induced Hypersensitivity Syndrome

Simon R. Nigen[1], Lori E. Shapiro[2], Sandra R. Knowles[2], Manuela G. Neuman[2], Neil H. Shear[2].
[1]Hôpital Maisonneuve-Rosemont, Montréal, QC, Canada, [2]Sunnybrook and

Women's College Health Sciences Centre, Toronto, ON, Canada.

Background: Drug hypersensitivity syndrome (DHS) is a severe idiosyn-cratic reaction that is a major concern in clinical practice. It is a potentially life threatening syndrome, characterized by a triad of fever, skin eruption and internal organ involvement. Drugs most commonly associated with DHS include sulfona-mide antibiotics, allopurinol and anticonvulsants. Patch testing may help to assess the culpability of a drug following an adverse reaction. However, previous studies evaluating the utility of patch testing in anticonvulsant hypersensitivity syndrome are limited and provide inconsistent results.

Objective: Our aim was to evaluate the utility of patch testing as an ancillary diagnostic tool in DHS induced by anticonvulsants. In addition, the cross-reactivity of anticonvulsants based on patch test results were evaluated.

Method: Seventeen patients with a documen-ted anticonvulsant-induced hypersensitivity syndrome and with a positive lympho-cyte toxicity assay (LTA) to an anticonvulsant underwent patch testing to each of carbamazepine, phenytoin, phenobarbital and lamotrigine. Drugs were tested diluted 1% and 10% in both petrolatum and Phlojel base.

Results: Among the 17 patients who were patch tested, 4 (24%) had a positive test. In 2 cases, patch test with phenytoin was positive in Phlojel base but negative in the petrolatum base. One patient with a carbamazepine-induced hypersensitivity syndrome had a positive test to carbamazepine as well as with phenobarbital. Also, one patient with phenytoin-induced hypersensitivity syndrome had a positive test to pheny-toin and to phenobarbital drug. No side effects associated with patch testing were reported.

Conclusion: Patch tests with anticonvulsants are safe but of limited value in investigating hypersensitivity syndrome reactions. Cross reactivity with other anticonvulsants may be detected by patch tests. Finally, it appears that the sensitivity of the test could be increased by utilisation of a more appropriate vehicle.

Pompholyx or Pseudopompholyx? Cases for Diagnosis

Dominique Tennstedt
Université Catholique de Louvain, Bruxelles, Belgique

Pompholyx (or vesicular eczema of palms and soles, or dyshidrotic eczema, or acute and recurrent vesicular hand eczema) is a clinical manifestation of palmar and/or plantar dermatitis. In most cases, its etiology remains obscure. The role of sweat glands is controversial. Classically, the condition seems to be worse in warm environmental conditions since, in some patients, recurrences occur annually each summer. Hyperhidrosis is not a constant feature, however.

Diagnosis is usually easy and clinical only. No investigation is necessary. Nickel allergy, atopy and/or primary irritants (like soluble oils) can provoke or worsen pompholyx. Bacterial infections may supervene. Repeated relapses of pompholyx may produce hyperkatotic lesions that mimic psoriasis or hyperkeratotic palmar eczema (tylotic eczema). Recurrent local palmar peeling ("desquamation en aires") is probably a mild form of pompholyx. Pseudopompholyx (or vesicular pompholyx-like reaction) is a condition that mimics pompholyx and other diagnoses must be entertained such as allergic contact dermatitis (mainly primin, IPPD, isothiazolinones, dichromate, thioureas, fragrances, proteins, etc.), apron dermatitis, tinea (dermatophytosis), pustular psoriasis, palmoplantar pustulosis, palmoplantar keratoderma, pemphigoid, linear IgA disease, aquagenic syringeal acrokeratoderma, etc.) Some cases will be presented as a quiz.

Patch Testing: from Jadassohn to the Present and Future

Jean-Marie Lachapelle
Université Catholique de Louvain, Bruxelles, Belgique

The first part of the lecture will be devoted to the historical aspects of the patch testing methodology. Milestones in the field, during the 19th and the 20th centuries, will be evocated, by the light of original surprising documents. The second part will refer to the current status of the patch test, emphasizing its pre-eminent statute in dermato-allergology. Its power has been increased nowadays by a cohort of additional testing procedures, including the open test, the semi-open test, the ROAT test, the spot tests and the development of in vitro or ex vivo investigations. There is still some need for improvements. These are obvious: • A consensus as regards the co-existence of conventional methodology versus the TRUE test® approach. • A consensus as regards reading scores of positive patch tests. • New insights in the evaluation of the relevance of positive and negative patch tests. • The development of more educational programs for countries which are less familiar with patch testing. And so many other...

The Alstroemeria Allergic Contact Dermatitis Story

James G. Marks, Jr.
Penn State Hershey Medical Center, Hershey, PA, USA

Alstroemeria, the Peruvian lily, is popular in floral arrangements because of its beautiful appearance and long-lasting flower. Florists suffering allergic contact hand dermatitis from Alstroemeria were recognized in Europe. However, in the early 1980's this had not been appreciated in the United States. This presentation reviews those first reported cases of allergic contact dermatitis from Alstroemeria in U.S. floral shop workers.

Phytodermatitis: Clinico-Chemical Confrontation

Christophe J. LeCoz
Strasbourg, France

Plants are a common and likely the largest source of contact dermatitis. Chemicals responsible for the so-called phytodermatitis induce different clinical types of dermatitis, through different mechanisms. Moreover, phytochemicals, although belonging to various families, may be common to phylogenetically different plant families. Irritant contact dermatitis is frequent, due to calcium oxalate (*Amaryllidaceae, Araceae, Liliaceae*), isothiocyanates (*Brassicaceae*), esters of phorbol or of ingenol (*Euphorbiaceae*), or protoanemonin (*Ranunculaceae*). Phototoxicity due to furanocoumarins-psoralens (*Apiaceae, Moraceae, Rutaceae*), or furoquinolines (*Rutaceae*), underlies Oppenheim dermatitis and variants. Allergic contact dermatitis due to alpha-methylene gamma-butyrolactone (*Alstroemeriaceae* and *Liliaceae*) or allergens from the *Anacardiaceae*, *Ginkgoaceae* and *Proteaceae* families will not be discussed, but the lecture will focus on rarer -or underdiagnosed- sources of phytodermatitis like falcarinol (*Araliaceae* with common ivy, *Apiaceae*) or diallyldisulfide (*Alliaceae*). Sesquiterpene lactones (*Asteraceae, Jubulaceae, Lauraceae,* etc.) comprise hundreds of molecules with fascinating features, and cause allergic contact dermatitis throughout the world. The clinical patterns are various, from acute eczema due to single contact, to relapsing or chronic and severe dermatitis with features of chronic actinic dermatitis, such as *Parthenium*- or ragweed dermatitis. Some examples of testing are presented, especially when standard series are not sufficient to permit a satisfactory diagnosis: primrose (*Primulaceae*) dermatitis not due to primin, or immediate symptoms due to roses (*Rosaceae*).

Update on Lanolin Allergy

Joseph F. Fowler[1], Jr., Nigel Langley[2]
[1]*University of Louisville, KY, USA,* [2]*Croda Inc., Edison, NJ, USA*

Background: Lanolin is the purified waxy material that is secreted by the sebaceous glands of the sheep. It is a highly complex mixture of wax esters, comprising of sterol, aliphatic and branched chain compounds. The prevalence of allergy to lanolin is controversial, perhaps in part because of the heterogeneity of substances making up lanolin and probably more importantly relating to the level of purification performed.

Objective: This study was conducted to help determine the prevalence of positive patch test reactions to 6 pharmaceutical grade lanolins (USP, USP modified, PhEur compliant; differing only in the degree of purification) as compared to lanolin alcohols (30 % w/w in mineral oil; standard material in allergen patch tests).

Methods: Approximately 500 consecutive patients were tested to lanolin alcohols and 6 pharmaceutical grade lanolins as part of diagnostic patch testing.

Results: The numbers of reactions to each allergen will be presented. Reactions were very rare for the 6 pharmaceutical grade lanolins while lanolin alcohols showed a higher rate of positivity.

Conclusions: The prevalence of patch test reactions to pharmaceutical grade lanolins is very rare. The relevance of the reactions to lanolin alcohols needs further assessment.

Late Reading of Patch Tests

Martine M. Vigan, Pascal Girardin
Centre Hospitalier Universitaire de Besançon, France

The delayed appearance of positive patch test reactions is considered to be evidence of active sensitization, if the test with the allergen gives a positive reaction at the usual reading time, when it is repeated. In 1997 we published "late reading of patch tests"(1) and we thought that the late appearance of positive patch tests could be due to:

1/ low sensitization level by cross-sensitization or by co-sensitization, or by removal of the allergen. In this case if the allergen was retested, the new patch-test could be positive at the usual reading time as a result of the "booster effect" : effect reminder of memory

2/ active sensitization.

Since 1997 two observations demonstrated that not all late reactions to PPD are secondary to active sensitization: the first is an illustration of the "booster effect" (2) and the second an example of low sensitization by cross-sensitization (3) So we believe that late reactions to PPD do not always express active sensitization, and are not a crucial argument for deleting this allergen from standard series.

1. Late reading of patch tests. M Vigan et al. Eur J Dermatol 1997;7:574-6
2. Late reading of patch tests. M Vigan. Contact Dermatitis suppl n°4 vol 46 2002
3. Late reactions to PPD are not always an indication of active sensitisation: an example. H Hellinckx, A Goossens. Contact Dermatitis 2008:58:110

Spa Contact Dermatitis

David R. Adams, J.G. Marks, Jr., B.E. Anderson, J. Yankura
Penn State Hershey Medical Center, Hershey, PA, USA

Potassium monopersulfate (MPS) is widely used in spa and pool “shock”

treatments, yet contact dermatitis associated with MPS has been rarely reported. A patient presented with a generalized scattered dermatitis from the neck down which worsened after spa use. Patch testing elicited a +2 positive reaction to ammonium persulfate. Contact with ammonium persulfate was ruled out; however, potassium monopersulfate which can cross-react with ammonium persulfate was found to be the active ingredient used in the patient's spa shock treatments. The dermatitis cleared after the patient switched to a hydrogen peroxide-based shock treatment.

Paronychia and contact dermatitis from coffee powder

Gilbert Jelen
Saverne, France

Background: Chronic paronychia is usually secondary to fungal infection, but at times may be caused by immediate contact hypersensitivity to food allergens. Even though coffee is one of the most frequently consumed beverages in the world, contact dermatitis to the powder of roasted coffee is very rare. Herein we report such a case that presented as paronychia.

Case report: A barmaid presented with chronic paronychia involving the left thumb. The lesion had been present for more than one year, did not respond to various antifungal creams but improved during holidays. The investigation showed a positive patch test to powdered coffee after 48 hours, and a positive scratch chamber test after 20 minutes and 48 hours. The remainder of the work-up was negative. There was rapid improvement with one intralesional injection of depot corticosteroid in the nailfold followed by a job change.

Discussion: Green coffee beans have caused allergic contact reactions in plantation workers. About 10% of stevedores handling coffee bags develop asthma from green or roasted coffee. Generalized urticaria after ingestion of coffee has rarely been reported, with positive prick tests to caffeine extract 10 mg/ml. Caffeine is the only soluble ingredient of coffee. The typical coffee aroma is generated by heat during roasting. Complex interactions between proteins, acids and carbohydrates give rise to over one thousand different flavoring substances. Most of these compounds are modified by air or light exposure. Thus, the precise identification of allergens in coffee remains elusive.

Unusual exposure to metals resulting in systemic contact dermatitis – report on three cases

Andreas J. Bircher, Christoph Strub, Kathrin Scherer
University Hospital/Allergology, Basel, Switzerland

Introduction: We present three cases with widespread dermatitis or systemic contact dermatitis from metals. Upon identification of the allergens and adequate

prevention, all three cleared and had no relapses.

Patients, Investigations and Results:
1) A 25-year old female dental student had recurrent widespread dermatitis on the neck and arms after working on patients. A contact dermatitis from clothes was suspected. She had positive tests to mercury amide chloride and amalgam alloy. Upon taking a detailed history she reported a bullous contact dermatitis as child while using mercurial disinfectants. The dermatitis only occurred when she removed amalgam fillings, suggesting the drilling water containing amalgam particles as elicitor.
2) A 51-year old female with Crohn's disease suffered from three recurrences of a severe exanthem in a flexural distribution (Baboon syndrome), while receiving intravenous alimentation in hospital. Initially a drug eruption was suspected. She had a positive patch test to nickel, oral re-exposure with 1mg nickel resulted in a milder recurrence of the dermatitis, while a short saline infusion did not reproduce any lesions. In the intravenous tube a metal eyelet was identified. The release of nickel was suspected as cause.
3) A 61-year old electrician suffered from recalcitrant hand eczema, and a work-related contact dermatitis was suspected. He had positive a patch test to cobalt. He then decided to have all his dental crowns removed. Analyses of the crowns revealed a high cobalt content and corrosion. The eczema cleared after three months while he was back to work.

Discussion: Even small amounts of contact allergens from unexpected sources by external and internal exposure may result in widespread recurrent dermatitis. Only a careful history, patch tests and the consideration of unusual sources will help to eliminate relevant contact allergens.

Cutaneous metal sensitivity as a potential risk factor for intra-coronary stent re-stenosis

Golara Honari[1], Stephen Ellis[2], Apra Sood[1], James S Taylor[1].
[1]Departments of Dermatology and [2]Cardiovascular Medicine, Cleveland Clinic, OH, USA

Background: Coronary in stent restenosis (ISR) is a major health concern with approximately 120,000 cases reported annually in the United States. Metal sensitivity as a risk factor for ISR has been studied, but still remains controversial. We have investigated the association between metal sensitivity and angiographic measures of restenosis after stent implantation.

Methods: Patients were recruited from those who presented to the Cleveland Clinic cardiac catheterization laboratory for clinically driven angiography following a prior percutaneous coronary intervention with placement of one or more non-drug eluting stainless steel stents. Epicutaneous patch testing was performed on 84 patients (with 116 stents) with available cineangiograms for quantitative

coronary angiography. The primary angiographic endpoint included lumen loss (LL) in the stented segment, which is the difference between the minimum lumen diameter of the stented segment at baseline and follow-up angiography. The median time between baseline and follow-up angiograms was nine months. All patients underwent 48 hour closed patch testing with one or two concentrations of nickel, molybdenum, chromium, manganese and cobalt salts. Dermatologists blinded to the cardiac findings assessed the patch test results once between 72-120 hours. Wilcoxon rank sum tests, chi-square tests and multivariable linear regression analysis were used to analyze data which was adjusted for known risk factors of ISR.

Results: Patients with positive reactions to nickel 2.5% in petrolatum had modestly higher lumen loss compared to patients with negative patch tests to nickel with a mean of 1.1 mm [SD 0.91] vs. 0.69 mm [SD 0.79] (median 1.2 mm vs. 0.58 mm) (p=0.09). No statistically significant trends were observed between angiographic endpoints and positive reactions to other tested metals. These findings suggest a potential association between contact sensitivity to nickel and ISR in stainless steel stents, however further investigation is warranted.

Contact sensitivity to metals: evidence of irritant tests in metal implant patients

Andreas J. Bircher, Peter Häusermann, Kathrin Scherer, Erwin Kump
University Hospital, Allergology, Basel, Switzerland

Introduction: Contact sensitivity to metals is often suspected in patients with a variety of symptoms from metal implants. We evaluated the prevalence of positive patch tests to a large series of metals in a patients with complications from knee and hip protheses and osteosynthesis.

Patients and Methods: 18 consecutive patients with metal implants associated with pain, swelling or dermatitis (11 females, 56 years) were included. All were patch tested with the German standard and an extended metal series (Chemotechnique, Hermal, Hospital pharmacy). Readings were done at day 2 and 3 according to the ICDRG guidelines. In 6 patients test reactions with an irritant pattern were examined with conventional and immune histochemistry.

Results: In metal implants patients 12/18 (66%) were positive to metals particularly nickel, cobalt, chromium and manganese, vanadium and rhodium. Some were morphologically allergic reactions, with a crescendo evolution, others particularly to manganese were irritant reactions with pustules and a decrescendo evolution. Histology revealed a mixed inflammatory pattern, immune histochemistry showed CD 3, , 8 and CD 163 positive cells.

Discussion: We found an unexpected high prevalence of positive patch tests to metals in implant patients. There was a high prevalence to the classical metals

nickel, cobalt and chromium. The majority of the positive reactions, however, could be related neither to exposure nor to symptoms. Irritant reactions may present a problem particularly with manganese, vanadium and rhodium. Metal contact sensitivity may play a contributing role in symptomatic metal implants, however non irritant test concentrations are mandatory.

Management of Chronic Hand Eczema

Thomas L. Diepgen
University of Heidelberg

Hand eczema is one of the most frequent skin diseases and has often a chronically relapsing course with a poor prognosis. It is not a uniform disease and varies due to etiology, severity and morphology. Despite the abundance of topical and systemic treatment options, disease management in patients with severe chronic hand eczema (CHE) is frequently inadequate and unsatisfactory. The limitations of topical and systemic therapy are obvious in these refractory patients resulting in a need for further systemic treatment options. In this lecture the current status of treatment options according to an evidence-based approach (randomised controlled clinical trials RCTs) will be presented and the results of recent study with oral alitretinoin discussed. A total of 1,032 patients were randomized to alitretinoin 10 mg, 30 mg, or placebo. Treatment was given once daily for up to 24 weeks. Response was defined as a Physicians Global Assessment (PGA) rating of ‘clear’ or ‘almost clear’. PGA response rates to alitretinoin at the end of therapy were dose dependent, with significantly higher response rates in the alitretinoin 30 mg (47.7%; $p<0.001$) and 10 mg (27.5%; $p=0.004$) groups compared to the placebo group (16.6%). Adverse effects were also dose-dependent, and comprised retinoid and rexinoid class effects. In conclusions, oral alitretinoin 10 mg or 30 mg once daily for up to 24 weeks was clinically effective and well tolerated in the treatment of patients with severe CHE refractory to potent topical corticosteroids.

Contact Dermatitis: What's New 2007-2008?

Joel G. DeKoven
University of Toronto, ON, Canada

Objective: to highlight interesting reports and developments in Contact Dermatitis that occurred in 2007-2008

Method: A personalized review of the literature pertaining to Contact Dermatitis.

Results: 1. In 2008, Nickel was named the Allergen of the Year by the American Contact Dermatitis Society. Unlike Europe, there appears to be an increasing incidence of allergic sensitization to nickel in North America. Old sources such as metal buttons on jeans, and new sources of nickel ACD such as cell phones, were subjects for discussion. New insight was offered into the possible genetics

of Nickel contact allergy. 2. More cases of ACD to components of Polyvinylchloride (PVC) gloves were published, emphasizing the possible sensitizing potential of antimicrobials and adipic polyesters. 3. Pentylene Glycol became an oft cited cause of ACD secondary to emollient creams. 4. Shellac has been reported in Europe as being a possible cause of ACD to mascara. This phenomenon has now been found in North America as well.

Conclusion: Old allergens learn new tricks while new allergens emerge to challenge our quest for a definitive diagnosis.

Occupational Contact Dermatitis Cases from the Ottawa Hospital Patch Test Clinic

Melanie D. Pratt
University of Ottawa, ON, Canada

This presentation will cover a wide assortment of occupational allergic contact dermatitis (ACD) cases encountered at the Ottawa Patch Test clinic over the past decade. The cases presented will show a spectrum of epoxy resin ACD from fiberoptics, circuit board and hockey stick assemblers, to ceramic floor installers, cement workers, and microscopists. Occupational cases of Chronic Actinic Dermatitis in a farmer, landscaper and outdoor worker will be reviewed. Metal allergy to nickel in a dental burr worker and gold in a mint worker will be covered. There will be cases of acrylate allergy in dental workers, a computer hard disc silk screener, and an esthetician. ACD in mechanics to biocides, cashew shell oil, rubber accelerators, and waterless hand cleaners will also be covered. ACD to Azithromycin in Pfizer workers, to spices and BHA in a chef, to exotic woods in a jewellry box maker, plus multiple contact allergies in a veterinarian, formaldehyde allergy in a mortician and finally textile ACD to disperse azo dyes in exercise clothing used by a gym teacher will be discussed. These cases demonstrate the need to patch test in order to effectively help many patients with occupationally induced eczematous skin disease.

Occupational Cutaneous Contact Allergy from Isothiazolinones

Marie-Bernadette Cleenewerck
Association de Médecine et Santé au Travail, Lille, France

Isothiazolinones are biocides that can induce contact allergy. The main preservatives belonging to this group are: chloromethylisothiazolinone (MCI), methylisothiazolinone (MIT or MI), benzisothiazolinone (BIT), 2-N-octyl-4-isothiazolin-3-one (OIT), etc. The strongest sensitizers are the chlorinated isothiazolinones. Combination of MCI and MI (Kathon CG) in a 3:1 mixture is a well-known sensitizer, widely used as a preservative in cosmetics and water-based skin care products. It is also found in various industrial products such as paints, oils, glues, adhesives, detergents and water-cooling systems. Skin

exposure to high concentrations of MCI/MI can cause severe chemical burns but can also induce sensitization. MCI/MI is still one of the most common allergens responsible for severe dermatitis. The increasing frequency of observed allergic contact dermatitis had led to a general reduction of MCI/MI concentrations in leave-on products. The European Scientific Committee on Cosmetic Products autorizes a maximum concentration of 0,01% (100 p.p.m.) in finished cosmetic products. The ESSCA 2004 data showed a MCI/MI positive patch test prevalence of 2,22%. Several members of the REVIDAL Group (GERDA) observed occupational allergic contact dermatitis on the hands from MCI/MI contained in professional liquid soaps, in hand cleansers (rinse off products) with repeated daily exposure. More than ten cases in health care workers and other employees (4 nurses, 1 paediatric nurse, 1 assistant nurse, 1 cleaner, 2 hairdressers) are reported. All of them reacted to Kathon CG in the European Standard Series. Avoidance of isothiazolinone exposure is difficult because this good biocide is widely used. However to prevent allergic contact dermatitis due to chlorinated isothiazolinones in hospitals, in wet work (food industry, etc.), hairdressing salons, etc. we recommend the use of hand cleansers without MCI/MI.

The Chronic Effects of Repeated Mechanical Trauma to the Skin

Sandy M. Slotnicki-Grant
University of Toronto, ON, Canada

Repeated mechanical trauma to the hands can result in forms of Irritant Contact Dermatitis known as Hyperkeratotic Hand Dermatitis and Frictional Hand Dermatitis. Unfortunately, reports on the treatment and prevention of these conditions are sparse. In 1983, the U.S. National Institute of Occupational Health NIOSH held an international symposium on the subject. Hyperkeratotic Hand Dermatitis was found in two different studies to represent about 2% of all hand dermatoses. A pivotal study by Hersle and Mobacken in 1982 attempted to classic this condition. It is mentioned in this study that almost half of the patients had hard manual work at the time of onset. The authors concluded that it is conceivable that chronic mechanical trauma contributes to the pathogenesis. The occupations associated included construction workers, forest workers, machinists, mechanists and paper handlers. Frictional Hand Dermatitis has similarities to Hyperkeratotic Hand Dermatitis but is distinct entity because it is always possible to identify a mechanical trauma and the disease activity is closely related to the frictional trauma. This condition is frequently seen in patients who repeatedly handle small metal/plastic components, paper, cardboard or fabric, and driving. Treatment of these conditions is difficult. Hyperkeratotic Hand Dermatitis is notoriously difficult to treat. Topical therapies include emollients, glucocortiocoids, oral retinoids, Methotrexate and PUVA. This talk will give an overview of the effects of mechanical trauma on the skin and the conditions, Hyperkeratotic Hand Dermatitis and Frictional Hand Dermatitis. Nine cases will be summarized and possible treatment and prevention with use of

Anti-vibration gel or air filled gloves will be discussed.

Chemically-Induced Occupational Dermatitis: Multifactorial Etiology and Prevention Strategies

Christian Géraut
Centre Hospitalier Universitaire de Nantes, France

Over 90% of cases of occupational dermatitis induced by chemical agents have multifactorial etiologies. It is no longer appropriate to search for a single cause when investigating a case of occupational skin disease.

Health care workers often present with multifactorial inflammatory dermatitis, sometimes simultaneously, (contact urticaria, irritant contact dermatitis, allergic eczema), and are frequently exposed to several chemical offenders: quaternary ammoniums, chlorhexidine, hydro-alcoholics solutions, soaps, alkaline disinfectants, isothiazolinones, aldehydes, metals and acrylates.

Food handlers may suffer from protein contact dermatitis to animal or vegetable proteins (urticaria and eczema), but also often and simultaneously from inflammatory skin diseases from various types of detergents that may be irritants (acid and strong bases), or sensitizers (perfumes, quaternary ammoniums, coconut derivatives, aldehydes, etc.).

Construction workers can become allergic to chromates or epoxy resins in cement, or develop irritation from its caustic properties. They are submitted to the effects of cold, heat, UV irradiation, and maceration under protective gear. Painters are exposed to sensitizing epoxy, acrylic, and polyurethane resins, but also to their caustic hardeners and to thinners and solvents, sometimes used to wash the hands.

Three months into their training, one third of hairdresser apprentices have hand dermatitis because of repeated contact, without gloves, with irritants such as shampoos, hydrogen peroxide, alkaline and acid permanent solutions, and with highly sensitizing hair dyes.

In such cases, eliminating a single allergen identified by patch testing may fail to bring a cure because other causative factors of inflammation have not been taken into account. Effective prevention strategies must be established, based on comprehensive knowledge of all the risk factors in a given profession: Such a database, available on a CD-ROM, was developed in French and will be soon translated in English and updated by expanding the list of the professions concerned.

Preventive prescriptions can then be written that specify the motions to be avoided, gloves to be used, barrier creams and emollients for daily skin care, as well as the means of avoiding identified allergens.

A Case-Control Study of Occupational Contact Dermatitis Among Automobile Assembly Workers

Aaron L. Sussell[1], Thomas Robins[2], David Garabrant[2], Gordon Reeve[3], Allen Stout[3], Boris Lushniak[1]
[1]CDC-NIOSH, Cincinnati, OH [2]University of Michigan School of Public Health, Ann Arbor, MI [3]Ford Motor Company, Detroit, MI, USA

Background: A U.S. automotive manufacturer's surveillance data revealed that the majority of its dermatitis cases were in the assembly subdivision. We examined risk factors for occupational contact dermatitis (OCD) among assembly workers in a case-control study.

Methods: A 22-month history of exposures to chemical substances and protective equipment at work, and substances and activities at home was obtained from 110 OCD cases and 157 controls enrolled from four Michigan auto assembly plants in 2003. Incident cases were documented by the employer 2001-2002. The study protocol was approved by the University of Michigan Health Sciences Institutional Review Board.

Results: After adjusting for potential confounders in logistic regression models, daily use of cloth or other gloves, exposure to paint and primer, sealants, and solvents at work, and use of soap or water-based (not hand) cleaners at home were significantly associated with OCD.

Conclusions: OCD diagnosis among automotive assembly workers is related to multiple exposures at work including daily use of gloves. Acknowledgements: The authors wish to thank the UAW-Ford National Joint Committee for Health and Safety, Debashis Ghosh, Edward Zellers, and Charles Mueller. The findings and conclusions presented are the views of the authors, and are not necessarily endorsed by NIOSH, the Ford Motor Company, or the International Union UAW.

The Occupational Disease Specialty Program - Five Years Experience

D. Linn Holness,[1,2,3] Joel G. DeKoven,[1,2] Sandy M. Skotnicki-Grant,[1,2] Melanie D. Pratt,[4,5] Lynette Dilworth,[1] Pilar Gomez,[1] Irena Kudla,[1,3] Grace Wozniak G[1]
[1]James R Nethercott Occupational Health Clinic, St. Michael's Hospital, [2]Department of Medicine, University of Toronto, [3]Dalla Lana School of Public Health, University of Toronto, [4]University of Ottawa, [5]The Ottawa Hospital, ON, Canada

Introduction: Key objectives in the management of a worker who presents with possible work-related skin disease are: to make a correct diagnosis; to implement appropriate medical treatment and workplace management; and to return the worker to function and work.

Objectives: To describe our experience over a five year period with a multidisciplinary model of care for workers with suspect work-related skin disease. Methods: We have undertaken a chart review to characterize the over 500 patients who have been seen in the Occupational Disease Specialty Clinic since its creation in 2002.

Results: The clinic has a multidisciplinary team including dermatologists, occupational medicine physicians, occupational hygienist, nurse, patch test technician and an occupational therapist. In addition to patient assessment the program model facilitates educational activities and applied research. Key characteristics of the patients assessed through the contact dermatitis stream including industry sector, work status, investigations and diagnosis will be presented.

Conclusions: The multidisciplinary model utilized by the Occupational Disease Specialty Clinic has provided for enhanced patient care.

Multidisciplinary Assessment of Workers with Occupational Contact Dermatitis

Joel G. DeKoven[1], Irena Kudla[2], Linn Holness[2],
[1]Division of Dermatology, Department of Medicine, University of Toronto
[2]Department of Occupational & Environmental Health, St. Michael's Hospital University of Toronto, Toronto, ON, Canada

Objective: To illustrate the advantages of an operational model of multidisciplinary assessment and management of workers with suspected work-related Contact Dermatitis.

Method: The Occupational Disease Specialty Program (ODSP) within the Department of Occupational & Environmental Health at St. Michael's Hospital features a multidisciplinary out-patient assessment clinic which is the provincial referral centre for the Workplace Safety and Insurance Board of Ontario (WSIB) for workers who suffer from work-related skin disease, respiratory disease, hand-arm vibration syndrome (HAVS) and toxicology-related issues. The Dermatology stream links three dermatologists who have specialized expertise in occupational contact dermatitis, with a clinical occupational hygienist, nurse practitioner, return to work coordinator, patch test technician, and an administrative coordinator to provide in-depth assessment and follow-up A complete exposure history is obtained by the clinical occupational hygienist, a comprehensive assessment and report is completed by the dermatologist, appropriate patch testing is performed,

and a return to work plan is developed, as required, with the return to work coordinator. The strategic utilization of custom allergen testing and comprehensive site visits are important adjuncts.

Results: This multidisciplinary model facilitates more accurate diagnosis and treatment for the worker, facilitating improved prevention and appropriate workplace placement/ return to work.

Occupational Contact Dermatitis: A Practice Audit from the University of British Columbia Contact Dermatitis Clinic

Gillian C. de Gannes
University of British Columbia, Vancouver, BC, Canada

Objective: To complete a practice audit from January 2007 - June 2008 in a contact dermatitis clinic associated with a community dermatology practice in Vancouver, British Columbia.

Methods: All charts were reviewed for patients patch tested by one dermatologist (GdeG) over this 18 month period. Data collected included patient age, sex, occupation (if workplace allergen suspected as a cause of the dermatitis), allergens tested and positive patch test reactions.
Results: In total, 136 patients were patch tested (female=115, male=21). Negative patch test results were found in only 36 patients. There were 113 non-occupational and 23 occupational cases (female=16, male=7) assessed. Relevant positive allergens were found in 15 of the occupational cases. Of the 8 occupational cases that were negative, 5 were diagnosed with irritant contact dermatitis (occupations with a significant amount of wet work or frequent hand washing), 2 with frictional/hyperkeratotic dermatitis and 1 patient had symptomatic dermatographism.

Conclusions: Three interesting suspected occupational dermatitis cases will be presented to illustrate when the workplace is not to blame. The patients successfully returned to work with only minor modifications to their environment, both at home and in the workplace.

The Role of Quaternium 15 in Occupational Dermatitis

Laurie M. Parsons
University of Calgary

Contact Dermatitis and in particular, allergic contact dermatitis is a common reason for loss of productivity among workers in all industries and occupations. Hand dermatitis in particular is devastating amongst the population because of the nature of the illness. Although the hands represent approximately 2-3% of the total cutaneous surface area, involvement with hand dermatitis often makes the

worker 100% disabled. Occupational hand dermatitis is also challenging our traditional teaching on the clinical presentation of irritant vs allergic hand eczema. Quaternium 15 is one of the commonest allergens associated with both non-occupational and occupational hand dermatitis. Using cases from the Contact Dermatitis Clinic at the University of Calgary, we will review the clinical presentation of occupational hand dermatitis and the role quaternium-15 has to play in such cases. A brief review of the literature on occupational hand dermatitis and sources of Quaternium-15 allergen in the workplace will also be discussed.

Poster presentations

Treating Mild to Moderately Severe Xerosis of the Feet and Legs with a New Water-Lipid-Based 40% Urea Foam.

Joseph F. Fowler, Jr.
University of Louisville, KY, USA

Objective: This study tested the efficacy, level of patient satisfaction, and safety of a water-lipid based aerosol foam containing urea 40% for the treatment of xerosis of the feet and lower legs and assessed patient satisfaction and ease of use.

Methods: This multi-site open-label study enrolled 11 patients with mild to moderately severe xerosis. A water-lipid based aerosol foam containing 40% urea was applied twice daily. Study visits were conducted at baseline, day 7, and day 14. Each visit included a physician and patient evaluation of dry skin signs and symptoms using the Dry Skin Assessment and Severity Index (DASI), which evaluated flaking/scaling, pruritus, cracking, dryness, discomfort, erythema, and overall appearance as well as a physician and patient overall global evaluation of results and the willingness of the physician to prescribe again. Patients were asked about their overall satisfaction with the product.

Results: The majority of patients (81.8%) liked the foam or found it to be acceptable. Physicians consistently reported improvement of patient symptoms after 14 days of treatment; 73% of patients showing improvement in dryness and 82% showed improvement in scaling. After 14 days of treatment, 73% of patients with mild to moderately severe xerosis reported an improvement in dryness and scaling.

Conclusion: The water-lipid based aerosol foam containing urea 40% is easy to use and offers a high degree of patient satisfaction. It is highly effective for the treatment of mild to moderately severe xerosis, providing a clinically relevant improvement in patient- and physician-reported symptoms.

Occupational Contact Dermatitis: Return-to-Work Following Multidisciplinary Assessment & Management

Pilar Gomez[1], Joel G. DeKoven[2], Irena Kudla[1], Linn Holness[1], Sharon Switzer-McIntyre[1]
[1]*Department of Occupational & Environmental Health, St. Michael's Hospital University of Toronto, Toronto, ON, Canada*
[2]*Division of Dermatology, Department of Medicine, University of Toronto, ON, Canada*

The Occupational Disease Specialty Program (ODSP), Department of Occupational & Environmental Health, St. Michael's Hospital is an out-patient clinic and provincial referral centre for the Ontario Workplace Safety and Insurance Board (WSIB) for workers who suffer from work-related skin disease. The multidisciplinary team is focused on diagnosis and management recommendations, including return-to-work, of work-related skin diseases. This poster highlights the roles and positive outcome that can result when a high functioning team works together effectively and efficiently. A 50 year old female healthcare worker presented to the clinic with suspected contact dermatitis of both hands. The trigger was related to handwashing activity which occurred 30-60 times per shift. At the Clinic she was assessed by the multidisciplinary team, leading to recommendations of time away from direct patient care, aggressive medical management and graduated return to modified work using alcohol hand-rubs with emollients. There was ongoing monitoring through a photograph diary submitted by the patient, and discussion with the patient, employer and WSIB Service Delivery team. Within six weeks the patient's hands completely cleared and she initiated transition into a modified job. The outcome of the case resulted in a modified job including working no more than two consecutive direct patient care shifts followed by three non-patient care shifts, using barrier cream as a protective agent and wearing gloves during patient encounters. This team-based approach to assessment and management has enhanced the patient's ability to perform in the workplace.

Return to Work Experience in the Occupational Disease Specialty Program

Pilar Gomez[1], Irena Kudla[1], Grace Wozniak[1], Joel G. DeKoven[2], Sandy M. Skotnicki-Grant[2], D Linn Holness[1],
[1]*Department of Occupational & Environmental Health, St. Michael's Hospital University of Toronto, Toronto, ON, Canada*
[2]*Division of Dermatology, Department of Medicine, University of Toronto, ON, Canada*

Introduction: There is little known about return to work (RTW) related to occupational skin disease. We have instituted a specific return to work role within a multidisciplinary team model to assist workers with work-related skin disease to return to work.

Objectives: To review our experience with dedicated RTW resources in our multidisciplinary team model of care.

Methods: All those patients who had RTW services provided as part of their assessment at the Occupational Disease Specialty Clinic at St Michael's Hospital were identified. A retrospective chart review was conducted to characterize this patient group, their work status and identify RTW interventions, barriers and facilitators and outcomes.

Results: 65 patients were identified, 63% were male and their mean age was 47. Approximately two thirds had work-related allergic contact dermatitis and one half work-related irritant contact dermatitis. 71% had lost time because of their skin disease. For those with lost time, the average was 185 days with a range from 4-915. 43% were off work at the time of assessment. At the time of discharge from the RTW program 17% were off work. Common RTW interventions included worker education, communication with the employer, case conferencing and follow-up with the worker. In addition to providing advice about avoidance, skin care and personal protective equipment, a RTW trial or graduated RTW and skin status monitoring were common components of the RTW plan.

Conclusions: A specific RTW program resulted in a number of workers returning to work post assessment.

Health services utilization prior to presentation for patch testing

Kwok T [1,2], DeKoven J [2,3], Skotnicki-Grant S [2,3], Wozniak G [2], Dilworth L [2], Holness DL [2,4].

[1]Schulich School of Medicine, University of Western Ontario, [2]James R Nethercott Occupational Health Clinic, St. Michael's Hospital, [3]Department of Medicine, University of Toronto, [4]Dalla Lana School of Public Health, University of Toronto, ON, Canada

Introduction: Past research in contact dermatitis (CD) and occupational contact dermatitis (OCD) shows associations between good prognosis and decreased duration of symptoms/time before diagnosis. By investigating factors that affect patients' timely presentation for patch testing, prognosis may be improved.

Objectives: To describe existing knowledge about health services utilization by workers with suspected CD or OCD. To characterize health services utilization by individuals with possible CD before presentation for patch testing.

Methods: A literature review, utilizing a PubMed search, was conducted to determine existing knowledge. A questionnaire was distributed to patients presenting for patch testing ascertaining health services utilization.

Results: Key content areas from the literature review include: practitioners who manage skin disease, patch test, and their practices, barriers to patients presenting with and physicians managing OCD, and occupational history taking. 39 patients completed our survey. 85% consulted a family physician, 74% consulted a dermatologist, 28% used a walk-in clinic, and 8% used health services at work for their skin. 31% of cases were thought to be work-related with no significant differences between work-related and non-work-related cases. Updated data will be presented.

Conclusions: Recognition of health services utilization-related variables affecting time to diagnosis may improve prognosis of OCD.

Displaying of a Set of Assays for an Integrated Approach to Predict Skin Sensitization to Cosmetic Ingredients

Silvia Martinozzi Teissier, Jean-Marc Ovigne, Françoise Rousset, Denis Verda, Cécile Piroird, Aurélia Del Bufalo, Stéphanie Ringeissen, Reine Note, Gladys Ouedraogo, Jean-Roch Meunier
L'Oréal Research, Aulnay-sous-Bois, France

Allergic disease resulting from industrial or environmental exposure to sensitizers is the most common manifestation of immunotoxicity in humans. Allergen risk assessment of chemicals so far relies on animal assays. In the context of the 7th amendment to the Cosmetic Directive and the REACH-legislation on chemicals, the cosmetic industry is concerned by the challenge of finding nonanimal approaches to assess the sensitizing potential of chemicals.
A range of in vitro methods have been developed, each of which is based on distinct events of the immunobiology of the skin sensitization, like peptide binding or dendritic cell activation. Although some of them have been proven to have good predictive values, it is now commonly agreed that only the integration of a series of assays is likely to encompass the complexity of the sensitization process, the physicochemical diversity of cosmetic ingredients and the necessity to deliver not only hazard identification but also potency information on identified sensitizers.
We developed the Myeloid U937 Skin Sensitization Test (MUSST) based on the induction of CD86 on U937 cells. Year's in-house experience with this assay led us to identify its limits, and to develop further methods and further models (including 3D-models) to overcome these limits. More recently, we enlarged our set of cell-based assays by incorporating the well-described peptide reactivity assay. Next we intend to address the question of the integration of in vitro data