Hand Dermatitis
David E. Cohen, M.D., M.P.H.
Charles and Dorothea Harris Professor and Vice Chairman for Clinical Affairs
Director of Allergic, Occupational and Environmental Dermatology
New York University School of Medicine Department of Dermatology

I will discuss non-FDA approved patch test allergens

David E Cohen has declared the following financial interests:

- Consultant and Honorarium:
  - Ferndale Laboratories,
  - Asana
  - Medimetriks,
  - Cutanea,
  - Ferrer,
  - Celgene,
  - Dermavant
  - FSJ
  - FIDE. (FIDE receives industry sponsorship from AbbVie, Almirall, Amgen, Bausch and Lomb, Bristol-Myers Squibb, Celgene Dermavant, Dermira, Janssen, Kyowa Hakko Kirin, LEO, Lilly, Novartis, Ortho Dermatologics, Pfizer, Sanofi Genzyme, Sun Pharma, UCB, Valeant)

- Stock or stock options: Dermira, Medimetriks, Brickell Biotech, Kadmon

- Board of Directors: Dermira, Kadmon

Hand Dermatitis

General population prevalence is 5% to 10%:

- workers, exposed to wet work and frequent hand washing

- Atopic dermatitis (AD) is recognized as the top risk factor

Causes:

- Exogenous: Irritant, Allergic Contact Dermatitis, Systemic contact

- Endogenous: Psoriasis, Dyshidrosis, Atopic Dermatitis, Nummular

- Generalized eczematous disease is Vesicular and eroded to hyperkeratotic and fissured

- Hand Psoriasis may have higher rates of allergic contact dermatitis.

References:

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Types of psoriatic palmoplantar disease

- Plaque psoriasis of hands
- Psoriasiform dermatitis
- Pustular psoriasis of palm
- Acrodermatitis continua

Predictive factors of self-reported hand eczema in adult Danes:

- 5 year follow-up study in the general population, aged 18-72 years (N = 2270)

- ‘Never’, ‘incident’, ‘non-persistent’, or ‘persistent’

- irritant contact dermatitis (ICD) (OR = 4.9; CI 3.4-7.1)

- allergic contact dermatitis (ACD) (OR = 2.6; CI 1.7-4.2)

- contact sensitization (23 allergens without nickel) was also associated with persistent hand eczema (OR = 2.5; CI 1.2-5.0), independently of an atopic phenotype.

- fragrances and isothiazolinones


Occupational Dermatitis in Health Care: Workers Evaluated for Suspected Allergic Contact Dermatitis

- 685 HCWs assessed - 81.0% diagnosed with Oc Skin Dis.

- Irritant contact dermatitis (ICD) 79.1%

- Allergic contact dermatitis (ACD) 49.7%

- rubber glove chemicals (thiuram mix and tetraethylthiuram disulfide)

- preservatives (formamide, formaldehyde releasers, and isothiazolinones)

- excipients in hand cleansers

Occupational Contact Dermatitis in Mechanics and Repairers Referred for Patch Testing

- 691 mechanics/repairers patch tested.
  - Male sex (93.5%)
  - Hand involvement (59.5%)

- Occupationally relatedness
  - Vehicle and mobile equipment mechanics/repairers (52.7%)
  - Mechanics/repairers (41.4%)
  - Electrical/electronic equipment mechanics/repairers (21.3%).

- Carbox mix, thiuram mix, and MCI/MI - most common relevant allergens

- Gloves, automotive vehicles, solvents, oils, lubricants, and fuels were the most common irritants.

Contact Dermatitis from cleansers

- Skin cleanser allergy was associated with high frequencies of hand and arm dermatitis.

- More than 50 allergens were associated with SCs including:
  - quaternium-15 (11.2%)
  - cocamidopropyl betaine (9.5%)
  - methylchloroisothiazolinone/methylisothiazolinone (8.4%)
  - cocamidopropylbetaine (7.9%)
  - fragrance mix I (7.7%)
  - Myroxylon pereirae (5.9%).

Medical and Surgical Gloves

- Five main families of accelerants are used in rubber-derived gloves: thiurams, dithiocarbamates (CM), benzothiazoles, guanides, and thioureas.

- Carbamates were used in 90.5% of gloves, whereas thiurams were used in 5.8%.

Alkyl Glucoside

- Nonionic surfactants
  - They have emulsifying, cleansing, and foaming properties.
  - Plant-derived with complete biodegradability.
  - Mainly from palm or coconut oil.
  - Widely used in shampoos, liquid cleansers, and shower gels, but also in leave-on products that include moisturizers, deodorants, and sunscreens.
Systemic contact dermatitis (SCD)

- Cutaneous reaction from systemic exposure to an allergen in a sensitized person, often refractory to conventional therapies.
  - Oral, intravenous, intramuscular, inhalational, transmucosal, or transcutaneous
  - Attributable to drugs and foods
  - Often to common sensitizers
    - Nickel, balsam of Peru, trace metals, propylene glycol, urushiol, and Compositae Plants (chamomile, Echinacea), Corticosteroids.

Clinical manifestations: Systemic Contact Dermatitis

- Presentations:
  - Baboon syndrome
  - Exacerbations of sites of previous exposure sites
  - Dyshidrotic hand eczema
  - Flexural dermatitis
  - Exanthematous rash
  - Erythroderma
  - Vasculitis-like lesions
  - Appears within hours to 2 days after systemic exposure

Topical treatment of Palmoplantar Dermatoses

- Avoidance of irritants
- Liberal use of emollients.
- Topical corticosteroids (usually high potency)
- Vit D analogs in combination with topical steroids.
- Topical calcineurin inhibitors
- Tar, Salicylic acid
- Phototherapy [specific talk on light based therapies]

Systemic Therapies for Hand/Foot Disease

- Eczema: dupilumab, abatacept, adalimumab, cyclosporine, acitretin.
- Psoriasis: nearly all of the systemic meds reported for plaque disease.

Apremilast in palmoplantar psoriasis

105 patients with moderate to severe palmoplantar psoriasis:
- Apremilast 30 mg bid or placebo for 12 weeks.
- At Week 12, all patients received apremilast 30 mg bid to Week 32.
- There was no significant difference in composite index scores at Week 12.
- A statistically significant difference was observed at Week 32.
- 34% of patients achieved a PPPASI 75 (apremilast: 22%; placebo: 8%; P = 0.0499)


Acrodermatitis Continua of Hallopeau on the Left Hand of a Young Woman at Initial Presentation

The dorsal (A) and palmar (B) views show sharply demarcated erythematous scaly plaques with fissures, scale crust, and nail pitting.

Conclusion

- Hand and foot dermatitis is a heterogeneous group of disorders that result in loss of function.
- Treatment rests in diagnosis and detection of potentially causative or aggravating factors. Patch testing can be an important tool in the workup of such patients.
- Systemic therapy is often necessary to control recalcitrant disease.
- There is a need for effective topical therapies.