Translating the Evidence: Allergy vs. Dermatology

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How can they disagree?!?

A good meditation on:
• Limits of knowledge
• Limits of evidence based medicine
• Practical limits of research

Bias: It doesn’t come out in the wash

• We emphasize disclosures all the time
• But what do we do with that information?
• Not much, right?

Bias: It doesn’t come out in the wash

• This is potentiated by meta-analyses and reviews:
• Most bias information is ignored and most of the data is treated equally
• This is sloppy but really hard to fix

Precision Medicine

• There is probably something better than EBM as we know it: Precision Medicine
• Precision medicine: Mechanism-based diagnosis and treatment with highly reproducible results and highly predictable outcome

Clayton Christensen and Jerome H. Grossman, M.D., of Harvard Kennedy School of Government
Allergy

- May focus more on allergic triggers than other physicians
- Evidence that allergists more likely to use diet changes for AD


JTF

- Joint Task Force represents the American College of Asthma, Allergy and Immunology (ACAAI) and the American Academy of Asthma, Allergy and Immunology (AAAAI)

Strategy

- Systematic literature review of PubMed and the Cochrane Database
- Classification of recommendations to grade the evidence
- Consensus expert opinion was obtained on each section
Similarities

• Overall, many similarities between the guidelines:
  – Use of moisturizers and TCS/TCI as mainstays
  – Lack of evidence on specialty emollients/barrier
  – Maintenance therapy (proactive) to prevent flares
  – Wet wraps or dressings during disease flares
  – No role for topical antihistamines

Differences

• There are interesting differences...

True or False...

• There is general consensus about the efficacy of Vitamin D supplementation in Atopic Dermatitis

A. True
B. False

Selected Differences I

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>AAD</th>
<th>JTF</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCS + TCI combo</td>
<td>May be more effective than either alone</td>
<td>Not discussed</td>
</tr>
<tr>
<td>TCS phobia</td>
<td>Counsel patients</td>
<td>Not discussed</td>
</tr>
<tr>
<td>Systemic agents</td>
<td>Detailed guidelines</td>
<td>Data reviewed, no specifics</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>Not enough evidence</td>
<td>Supports use</td>
</tr>
</tbody>
</table>

Vitamin D

Insufficient evidence to recommend fish oil, evening primrose oil, borage oil, multivitamin supplements, zinc, vitamin D, vitamin E, and vitamins B₃ and B₆.


Vitamin D. Summary Statement 29. Patients with AD might benefit from supplementation with vitamin D, particularly if they have a documented low level or low vitamin D intake. (B)


Vitamin D

• Vitamin D might:
  – Improve barrier function
  – Reduce inflammation
  – Boost cathelicidin and thus antimicrobial immunity
Vitamin D

- 11 children (mean age, 7 years) w/ AD that worsened in winter
- Randomly given 1000 IU of D2 or placebo qd x 1 mo
- Otherwise normal regimen


But, does it work?
Vitamin D effects in atopic dermatitis

- 95 patients with AD and 58 controls
- Mean serum D3 similar in AD and controls
- 20 pts with lowest vit D levels rec'd 2000 IU of cholecalciferol daily for 3 months
- After 3 mos:
  - Significant increase in D3 levels in exp group
  - Significant decrease in SCORAD
  - 18/20 reported improvement after vit D supplementation.


Multi-center, placebo-controlled, double-blind study in 30 pts with AD and 30 non-atopics, plus 16 with psoriasis
- Randomized to: 4,000 IU of D3 or placebo for 21 days
- After day 21:
  - 25OHD increased
  - No significant change in skin cathelicidin or EASI scores


Selected Differences II

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>AAD</th>
<th>JTF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Modifications</td>
<td>Not enough evidence</td>
<td>Temp/humidity control/laundry modifications</td>
</tr>
<tr>
<td>Silver/silk clothing</td>
<td>Unclear evidence</td>
<td>May be helpful</td>
</tr>
<tr>
<td>Aeroallergens</td>
<td>Testing needed before acting, dust mite covers</td>
<td>Minimising exposure to aeroallergens w/ testing, weekly bedding washes/remove carpeting</td>
</tr>
<tr>
<td>Allergen-specific Immunotherapy</td>
<td>Insufficient evidence</td>
<td>Testing needed before using immunotherapy</td>
</tr>
</tbody>
</table>

True or False...

- There is general consensus about the helpfulness of environmental modifications such as double-rinsing laundry.
  A. True
  B. False

The use of specific laundering techniques such as double rinsing, detergents, or other laundry products cannot be recommended for AD treatment because of the lack of clinical studies. There is limited evidence to support the use of specific laundry fabrics or the treatment of allergies. There are no clear guidelines on the prevention of atopic dermatitis. A "Management of atopic dermatitis" task force of the American Academy of Dermatology. Journal of the American Academy of Dermatology 2016.

Injection immunotherapy for HDM-sensitized patients also cannot be routinely recommended at this time. Studies examining immunotherapy for other allergens are even more limited in number (<5 RCTs), precluding recommendation for use.


Allergen immunotherapy. Summary Statement 50: On the basis of several studies of dust mite immunotherapy, the clinician might consider allergen immunotherapy in selected patients with AD with aerosol allergen sensitivity. (B)


If there is consistent correlation of symptoms (with or without positive allergy testing), a diagnostic elimination diet for up to 4 to 6 weeks with the suspected food item(s) may be initiated. If infants and children than in adults. In children less than 5 years old with moderate-to-severe AD, evaluation of food allergy to milk, egg, peanut, wheat, and soy could be considered if the child has persistent AD in spite of optimized management and topical therapy, has a reliable history of an immediate reaction after ingestion of a specific food, or both. Potential allergens can be identified by taking a careful history and performing appropriate immediate hypersensitivity skin tests. Intracutaneous skin


### Selected Differences III

<table>
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<tr>
<th>TOPIC</th>
<th>AAD</th>
<th>JTF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food allergy testing</td>
<td>Diagnostic elimination diet or controlled oral food challenge if specific food allergy suspected</td>
<td>IgE testing if clinically suspected; oral food challenge only if IgE testing negative</td>
</tr>
<tr>
<td>Bath additives</td>
<td>Not enough evidence</td>
<td>May be antipruritic</td>
</tr>
<tr>
<td>Psychological Care</td>
<td>Not discussed</td>
<td>Recommend psychological eval + tx</td>
</tr>
</tbody>
</table>

### True or False...

- There is general consensus about the efficacy antihistamines in AD management.
  - A. True
  - B. False

### Summary

- Mostly good agreement on all of the basics
- Some slight differences at the edges...
- Perhaps some room for each group to learn
- Therapeutic alliance: Everybody wins!
Thank you!

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