Eczema and urticaria

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Brindisi, It, 2-July-2014
ROTTERDAM: Harbour of the year; Peanut butter!

No conflict of interest concerning this lecture
Headlines of lecture

- Urticaria, definition and background
- Eczema, definition and background
- Update of Therapy of urticaria and eczema
Urticaria

- Common
- Acute – duration less than 6 weeks
- Chronic – more than 6 weeks
Definition of urticaria: pruritic swellings and spots with edema quickly disappearing and come back on other sites. They donot leave any scar.
Urticaria

- Common
- Uncommon
- Rare

- Contact urticaria syndrome in atopic dermatitis and food allergy
- Exanthems/ erythroderma
### Position paper by Zuberbier et al, Allergy 2009

Table 2. Classification of urticaria subtypes (presenting with wheals and/or angioedema)

<table>
<thead>
<tr>
<th>Types</th>
<th>Subtypes</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous urticaria</td>
<td>Acute spontaneous urticaria</td>
<td>Spontaneous wheals and/or angioedema &lt; 6 weeks</td>
</tr>
<tr>
<td></td>
<td>Chronic spontaneous urticaria</td>
<td>Spontaneous wheals and/or angioedema &gt; 6 weeks</td>
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<tr>
<td>Physical urticaria</td>
<td>Cold contact urticaria</td>
<td>Eliciting factor: cold objects/air/fluids/wind</td>
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<td></td>
<td>Delayed pressure urticaria</td>
<td>Eliciting factor: vertical pressure</td>
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<td></td>
<td></td>
<td>(wheals arising with a 3–12 h latency)</td>
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<tr>
<td></td>
<td>Heat contact urticaria</td>
<td>Eliciting factor: localized heat</td>
</tr>
<tr>
<td></td>
<td>Solar urticaria</td>
<td>Eliciting factor: UV and/or visible light</td>
</tr>
<tr>
<td></td>
<td>Urticaria factitia/dermographic urticaria</td>
<td>Eliciting factor: mechanical shearing forces</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(wheals arising after 1–5 min)</td>
</tr>
<tr>
<td></td>
<td>Vibratory urticaria/angioedema</td>
<td>Eliciting factor: vibratory forces, e.g. pneumatic hammer</td>
</tr>
<tr>
<td>Other urticaria types</td>
<td>Aquagenic urticaria</td>
<td>Eliciting factor: water</td>
</tr>
<tr>
<td></td>
<td>Cholinergic urticaria</td>
<td>Elicitation by increase of body core temperature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>due to physical exercises, spicy food</td>
</tr>
<tr>
<td></td>
<td>Contact urticaria</td>
<td>Elicitation by contact with urticariogenic substance</td>
</tr>
<tr>
<td></td>
<td>Exercise induced anaphylaxis/urticaria</td>
<td>Eliciting factor: physical exercise</td>
</tr>
</tbody>
</table>
**UAS = urticaria activity scale**

<table>
<thead>
<tr>
<th>Score</th>
<th>Wheals</th>
<th>Pruritus</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>Mild (&lt;20 wheals/24 h)</td>
<td>Mild (present but not annoying or troublesome)</td>
</tr>
<tr>
<td>2</td>
<td>Moderate (20-50 wheals/24 h)</td>
<td>Moderate (troublesome but does not interfere with normal daily activity or sleep)</td>
</tr>
<tr>
<td>3</td>
<td>Intense (&gt;50 wheals/24 h or large confluent areas of wheals)</td>
<td>Intense (severe pruritus, which is sufficiently troublesome to interfere with normal daily activity or sleep)</td>
</tr>
</tbody>
</table>

Sum of score: 0–6.
Figure 1. Differential diagnosis of urticarial symptoms. HAE, hereditary angioedema; AAE, acquired angioedema with C1 Esterase inhibitor deficiency; SA, spontaneous angioedema as manifestation of chronic urticaria with only deep swellings but no superficial wheals. *Duration of individual wheals; **duration of urticaria.
ECF  eosinophilic chemotactic factor
NCF  neutrophil chemotactic factor
PAF  platelet-activating factor
Therapy of urticaria

Be careful in children

Not applicable in children

Non sedating H₁-antihistamine (nsAH)

If symptoms persist after 2 weeks

nsAH updosing (up to 4x)

If symptoms persist after 1-4 weeks

Add Leukotriene antagonist or change nsAH

Exacerbation: Systemic Steroid (for 3 –7 days)

If symptoms persist after 1-4 weeks

Add Ciclosporin A, H2-antihistamine, Dapsone, Omalizumab

Exacerbation: Systemic Steroid (for 3 –7 days)
Omalizumab for urticaria

Omalizumab is a humanised monoclonal antibody that binds to circulating immunoglobulin E (IgE) and reduces the release of inflammatory mediators from mast cells and basophils.

It is currently licensed as add-on therapy for patients with severe, persistent allergic asthma. It is given by subcutaneous injection once every 4 weeks.

Omalizumab has also been reported to be highly effective in treating severe chronic spontaneous urticaria in teenagers and adults.

The trade name of omalizumab is Xolair™.
Eczema

- Atopic dermatitis/eczema
- Contact allergic dermatitis
Different expressions of AD infancy
Figure 1

Hereditary Predisposition of Atopic Dermatitis.

W. Watson et al. 1972

Adapted from Holgate S. Church MK. eds. Allergy. London: Gower Medical Publishing, 1993
Atopic eczema, phenotypes and genotypes

- **Intrinsic eczema**
  - No allergy
  - No diagnostic tests necessary

- **Extrinsic eczema**
  - Skin prick tests
  - Direct APT, patch tests especially for young children with urticarial flares and food allergy
  - Delayed APT, probably more for research goals not for practice

De Waard- van der Spek, 2006
Atopic eczema and Type I allergic reactions

- There is no known single cause for atopic eczema.
- There are many theories regarding the underlying mechanisms.
- Current research is investigating the roles of filaggrin gene mutations, defects in the skin cells (keratinocytes), the immune system, skin surface microbes (bacteria, viruses and yeasts), and many other factors.

Contact Urticaria Syndroom = CUS

Eczema round the mouth: food allergy?
Total skin involvement in atopic eczema

Primary?

Barrier Dysfunction

Gastrointestinal tract

SKIN

Allergic inflammation

AD

Overdiagnosis

Underdiagnosis
Atopic eczema (AD): general management (EBM= evidence based medicine)

- Staphylococcus aureus colonisation is a common complication of AD
- Bath: 5 minutes (3 minutes luke warm water, 2 minutes + bath oil and diluted bleach); NOT EBM
- Bleach: half-cup of 6% bleach (0.005% bleach); EBM
- (Huang, et al, Pediatrics 2009)
To start the right treatment use Scoring systems for ourselves and patients

- For physicians:
  - SCORAD-index
  - **Objective SCORAD**
    - Three – items – Severity Score
  - EASI

- For patients/parents:
  - POEMS
  - PO-SCORAD
Treatment strategy in Atopic eczema (AD)

- **Dry skin**
- **Itching and / or early signs of inflammation**
- **Flare**

**Emollients**

**PIMECROLIMUS**

**TACROLIMUS**

**4th generation steroids**

**Wet Wraps Treatment**

**Systemic drugs**

**MILD TO MODERATE POTENT CORTICOSTEROIDS = key drugs**

**CORTICOPHOBIA**

**EDUCATION TRAINING SUPPORT**

**Diet partly useful in first 2 years, less in first 4 years**

**DISEASE SEVERITY**

- **Mild**
- **Moderate +COMPLIC. SEVERE AD**
Atopic eczema and the microbiome

- The human microbiome (from the Greek micro "small" and bios "life") is a "living organism" existing on various bodily surfaces.
- It differs from normal skin in atopic dermatitis, and psoriasis.
- Staphylococci form a biofilm: inflammation pruritus
- Bleach baths
- Moisturizers with active components to change the biofilm

Allen HB, 2014 and Trompette H et al, 2014
Emollients: unwanted ‘hidden’ ingredients

- Three children with recalcitrant atopic dermatitis
  - Despite treatment with topical corticosteroids
  - Exacerbation with the use of emollient (Aquafor ointment®)

- Patch tests positive to
  - Compositae mix (3)
  - Sesquiterpene lactone (3)
  - Aquafor ointment® (2)
    - lanolin alcohol
    - bisabolol
      - a sesquiterpene alcohol
      - derived from Compositae plants
      - cross-reactivity

Jacob SE, Hsu JW. Pediatr Dermatol 2010
Topical steroids

- Topical steroids are the mainstay of therapy for atopic eczema!
- Important is correct use!!
  - Finger-tip method
  - Check length and weight

An Adult Finger Tip Unit

Twice weekly TCS or TCI added to emollient maintenance treatment to reduce risk of relapse (PRO-ACTIVE)

Topical FP 2x w, + emollients = adequate maintenance treatment

*More effective in girls! than in boys (trend)

Topical Tacrolimus = 2x w (different schedule) = adequate maintenance treatment


*Glazenburg EJ, et al Oranje AP. PAI 2008. (study in children only)

Wollenberg A, Allergy 2009
In weiter Ferne, so nah
Before treatment

After 7 days
WWT - Tubifast garments
Objective SCORAD results

Janmohamed S, Oranje AP, 2014
Oral medication for AD

- Methotrexate
- Cyclosporin
- Azathioprine
- Prednisone
- Biologicals
Cyclosporine in the treatment of patients with atopic eczema – a systematic review and meta-analysis

J Schmitt,*† N Schmitt,‡ M Meurer†

Effectiveness of cyclosporine is similar in adults and children, but tolerability might be better in children. As data to adequately evaluate the long-term effectiveness and safety of cyclosporine in patients with atopic eczema are unavailable, long-term registries are encouraged. Therapy should be restricted as much as possible to 3 months duration as maximum.
Eczema written action plans: improvement of care in children with atopic eczema

- Parents only remember 25% of the given information during a consultation!
- Own scoring sheets (QoL, POEM, PO-SCORAD)

- Chisolm SS, et al. JAAD 2008
- Own not-published work
Eczema workshops reduce severity of childhood atopic eczema

- 99 children attending the Dermatology Department were randomized: half did have an eczema school and half not.
- At 4 weeks SCORAD Index improvement was significantly greater in the eczema workshop group.
- How to apply ointment- and anti-itch-workshops do help!
  - Own not-published work
Summary of lecture

- URTICARIA
  - Urticaria, often cause unknown
    - Antihistamines, Omalizumab

- ECZEMA
  - Atopic eczema and contact allergic eczema, role of microbiome, pro-active treatment, written instruction plans, eczema school
  - Not yet a biological for atopic eczema
  - Contact allergic eczema is not rare
Thank you for your attendance!
Any questions?