Acute urticaria in children - management

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Scope of my talk

What is acute urticaria?

Who, why, when and where?

What is the management?

www.wwww.answers!
What is acute urticaria?

- “Continuous urticaria lasting no more than 6 weeks” (and at least a few days……)
- EAACI consensus defines acute urticaria as **spontaneous** disease, thereby excluding:
  - Contact urticaria
  - Physical or cholinergic urticarias
  - Immune complex-mediated urticaria (serum-sickness)
  - Angio-oedema without weals
  - Auto-inflammatory urticarial syndromes (CAPS)
  - Anaphylaxis
Acute urticaria

- Spontaneous
  - Urticarial vasculitis
  - Angio-oedema without weals
- Inducible

Contact urticaria

Autoinflammatory Syndromes
Clinical presentations
NOT acute urticaria
NOT acute urticaria
Acute haemorrhagic oedema of infancy
Urticarial rashes are not urticaria!
Who gets spontaneous urticaria?

Acute urticaria
M=F
? increased atopy

Chronic urticaria
F>M
No increase in atopy
Prevalence of acute urticaria

• General population estimates ~ 12-23.5%
• Atopic dermatitis children (12-24/12 old) over 18/12 interval = 16.2%\textsuperscript{1}
• 50% of acute urticaria patients are atopic\textsuperscript{2}

\textsuperscript{1}Simons. JACI 2001; 107:703-6
\textsuperscript{2}Ifflander. Thesis, Berlin, 1999
Influence of genes or environment?
Causes of acute urticaria in children

- Infections (mainly viral URTI)
- Idiopathic (often the majority)
- Foods and drugs (allergic and pseudo-allergic)
- Stings (especially bee and wasp)
- ?? autoimmune
### Causes of urticaria: the Heraklio-Norwich experience

<table>
<thead>
<tr>
<th></th>
<th>Norwich (UK)</th>
<th>Heraklio (Greece)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children seen in A &amp; E</td>
<td>28931</td>
<td>27693</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Total urticaria cases</td>
<td>324</td>
<td>405</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Total admissions due to urticaria</td>
<td>30</td>
<td>11</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Infection (%)</td>
<td>65 (20.1%)</td>
<td>47 (11.6%)</td>
<td>0.007</td>
</tr>
<tr>
<td>Antibiotics (%)</td>
<td>8 (2.5%)</td>
<td>11 (2.7%)</td>
<td>0.839</td>
</tr>
<tr>
<td>Hymenoptera sting (%)</td>
<td>4 (1.2%)</td>
<td>7 (1.7%)</td>
<td>0.592</td>
</tr>
<tr>
<td>Food (%)</td>
<td>3 (1%)</td>
<td>5 (1.2%)</td>
<td>0.694</td>
</tr>
<tr>
<td>No association identified (%)</td>
<td>244 (73.2%)</td>
<td>339 (82.8%)</td>
<td>0.404</td>
</tr>
</tbody>
</table>
Infections

e.g. adenovirus
rhinovirus
RSV

e.g. enterovirus
hepatitis A and B
anisakiasis
Foods

< 6/12: common
e.g. cow’s milk

6/12-16 y: uncommon
e.g. eggs, nuts

Adult: rare
e.g. seafood
Drugs: spontaneous reports to CSM (all ages) 1963-2003

Autoimmune urticaria in children

50% of children with chronic urticaria have evidence of functional autoantibodies (ASST and/or BHRA)

Brunetti et al. JACI 2004, 114:922-7
Investigation of acute urticaria

- Majority – none
- Try to confirm suspected infection or allergy where clinically relevant e.g. swabs, stool examination, skin prick tests
- Further investigation determined by clinical presentation and ‘need to know’ e.g. food or drug challenges
Natural history

• 100% get better (!) by definition
• Majority improve in days, all clear in 3 weeks\(^1\)
• Very few progress to chronic urticaria
• 12% have previous history of acute intermittent urticaria\(^1\)

\(^1\)Zuberbier et al. Acta Derm Venereol 1996; 76:295-7
Management of acute urticaria in children

- Reassurance
- Avoidance of the cause (where possible)
- H1 antihistamines
  - Classical (sedating)
  - Second generation (non-sedating)
- ? H2 antihistamines
- Oral corticosteroids (0.5 – 1.0 mg/kg/d)
- Epinephrine (for anaphylaxis only)
Which H1 antihistamine?

First generation ‘classical’
- Alkylamines
  - chlorphenamine
- Ethanolamines
  - diphenhydramine
- Piperazines
  - hydroxyzine
- Piperidines
  - azatadine
- Phenothiazines
  - promethazine
  - alimemazine
- Ethylenediamines

Second generation
- cetirizine
- loratadine

(Third generation)
- levocetirizine
- desloratadine
# Classical H1 antihistamines

<table>
<thead>
<tr>
<th>Drug</th>
<th>Min licensed age</th>
<th>Min BNF age</th>
<th>Licensed indications</th>
<th>Special features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alimemazine</td>
<td>&gt; 2 y</td>
<td>≥ 6/12</td>
<td>AR, CU</td>
<td>Extrapyramidal effects, contact sensitisation</td>
</tr>
<tr>
<td>Chlorphenamine</td>
<td>≥ 1 y</td>
<td>≥ 1/12</td>
<td>AR, URT</td>
<td>CNS stimulation in children but depression in adult overdose</td>
</tr>
<tr>
<td>Cyproheptadine</td>
<td>≥ 2 y</td>
<td></td>
<td>Allergy, pruritus</td>
<td>Avoid renal failure</td>
</tr>
<tr>
<td>Hydroxyzine</td>
<td>≥ 1 y</td>
<td></td>
<td>Anxiety, pruritus</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>in URT, AD, ACD</td>
<td></td>
</tr>
<tr>
<td>Promethazine</td>
<td>≥ 2 y</td>
<td></td>
<td>AR, URT, anaphylaxis</td>
<td>Anticholinergic, drowsiness/hyperexcitability</td>
</tr>
</tbody>
</table>
# Second generation H1 antihistamines

<table>
<thead>
<tr>
<th>Drug</th>
<th>Minimum licensed age (y)</th>
<th>Min BNF age (y)</th>
<th>Licensed indications</th>
<th>Special features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cetirizine</td>
<td>≥ 6</td>
<td>≥ 2 (HF)</td>
<td>AR, CU</td>
<td>Avoid renal failure</td>
</tr>
<tr>
<td>Levocetirizine</td>
<td>≥ 2</td>
<td></td>
<td>AR, CU</td>
<td>Avoid renal failure</td>
</tr>
<tr>
<td>Fexofenadine</td>
<td>≥ 12</td>
<td>≥ 6 (HF)</td>
<td>AR, URT</td>
<td></td>
</tr>
<tr>
<td>Loratadine</td>
<td>≥ 2</td>
<td></td>
<td>AR, CU</td>
<td>Avoid &lt; 30 kg</td>
</tr>
<tr>
<td>Desloratadine</td>
<td>≥ 1</td>
<td></td>
<td>AR, URT</td>
<td></td>
</tr>
<tr>
<td>Mizolastine</td>
<td>≥ 12</td>
<td></td>
<td>AR, URT</td>
<td>Avoid erythromycin</td>
</tr>
</tbody>
</table>
Classical vs second generation antihistamines in children

**Classical**
- In use for over 50 y
- Trusted
- Parenteral formulations
- Licensed for young children
- Sedating, impairs REM sleep
- Harmful in overdose

**Second generation**
- In use for 10-25 y
- Trusted
- Non-sedating
- Very safe
- Restricted use in children