# What's new in Allergy? 2020

Christine McCusker MSc, MD

McGill University Health Center

# Disclosures

| | Company/Organization | Details |
|---|---|---|
| I am a member of an **Advisory Board or equivalent** with a commercial organization. | Emerade<br>Sanofi-Genzyme<br>Liffey Biotech Immunology CSO | Adboard member<br>Adboard member<br>Advisor for development of therapeutic molecule for allergic hypersensitivities |
| I am a member of a **Speaker's Bureau** | n/a | |
| I have **received payment from a commercial organization** (including gifts or other consideration or 'in kind' compensation). | n/a | |

# Objectives

- Discuss food allergy prevention strategies and introduction of foods in infants
- Describe oral immunotherapy for children
- Discuss best management for children with possible medication allergy

# Food allergy and infants

# The Case

- Scenario
  - A mother with a 6 month old comes for advice
  - The child has eczema
  - Mother wants to know what to do about the eczema and what foods could be causing it.

- Responses True/False
  - Eczema and food allergy are connected?
  - Food avoidance reduces eczema?
  - Infants with eczema should have specific antibody testing for foods to help manage their eczema

- Studies suggest that in infants with severe eczema  milk sensitivity may be a component worsening their disease.
- In the vast majority of children food ingestion has no relation to their skin symptoms
- However, sensitization to foods through skin exposure is now believed to be an important “cause” of food allergy in infants.

# What does this have to do with food allergy?

# Pitfalls and Pearls

**Pitfall**

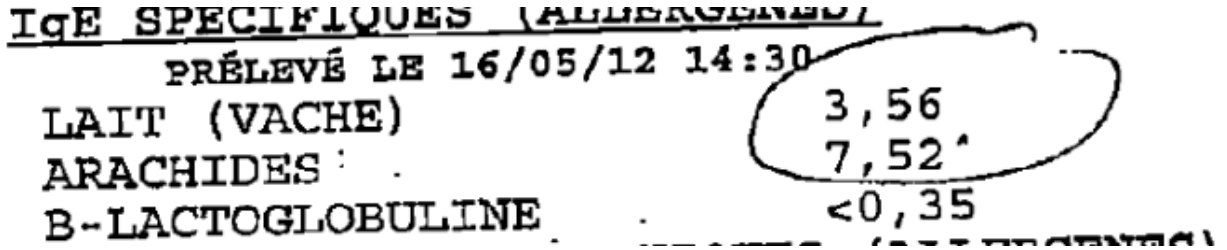
- Food allergy causes eczema
- Food avoidance reduces eczema

**Pearl**

- Eczema increases the risk for skin-mediated sensitization to foods. Early introduction of foods orally can reduce sensitization.
- In children with SEVERE eczema (ie not responding to aggressive emollient therapy or medical management and compliant) specific foods such as milk are implicated and skin may improve with removal from the diet. Allergy consult first please!

# A Recent Case in My Clinic: What are her allergies?

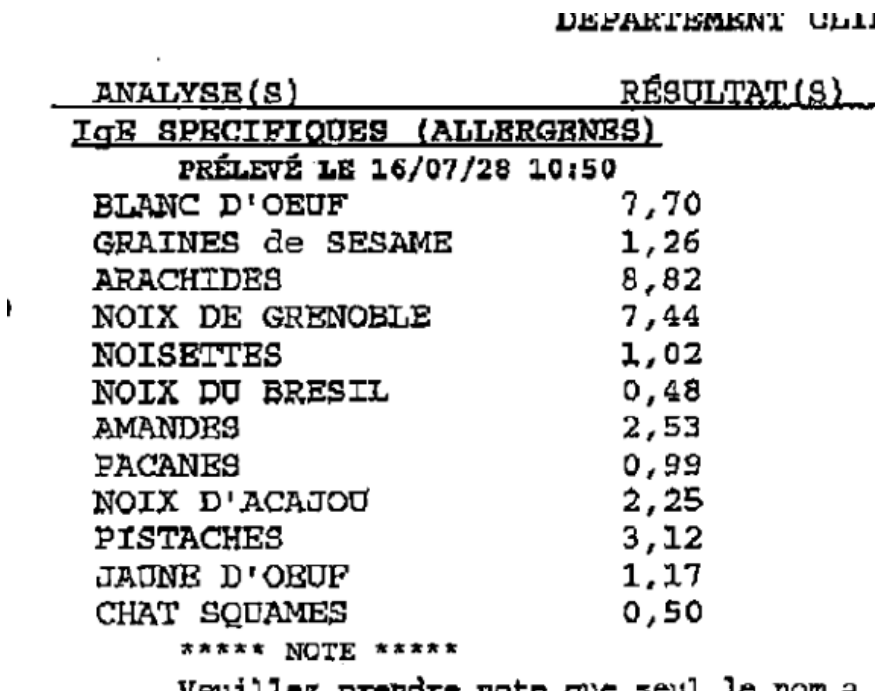
- 17 month old with eczema (severe) since age 4 months.
- Dr ordered blood tests at age 6 months
- Tests were repeated at 12 months
- She has never been introduced to
- eggs, milk, peanuts, sesame, tree nuts.
- She has taken other legumes, fish.
- She developed red plaques with shrimp.
- Mother feels maybe some improvement of eczema with removal of foods from the maternal diet.
- Eczema is treated with topical corticosteroids and hydration creams.
- She is on soy, rice and breast milk



IgE SPECIFIQUES (ALLERGENES)

PRÉLEVÉ LE 16/05/12 14:30

| | |
|---|---|
| LAIT (VACHE) | 3,56 |
| ARACHIDES | 7,52 |
| B-LACTOGLOBULINE | <0,35 |



DEPARTEMENT CLI

| ANALYSE(S) | RÉSULTAT(S) |
|---|---|
| IgE SPECIFIQUES (ALLERGENES) | |
| PRÉLEVÉ LE 16/07/28 10:50 | |
| BLANC D'OEUF | 7,70 |
| GRAINES de SESAME | 1,26 |
| ARACHIDES | 8,82 |
| NOIX DE GRENOBLE | 7,44 |
| NOISETTES | 1,02 |
| NOIX DU BRESIL | 0,48 |
| AMANDES | 2,53 |
| PACANES | 0,99 |
| NOIX D'ACAJOU | 2,25 |
| PISTACHES | 3,12 |
| JAUNE D'OEUF | 1,17 |
| CHAT SQUAMES | 0,50 |

***** NOTE *****

# The Case

**Scenario**

- A mother brings her 4 month old infant for routine check up. The child is well with mild-moderate eczema and mother asks about introduction of solids.
- The family history is positive for an older sibling with peanut allergy.
- Mother wants to know about food introduction in this child.

**True/False**

- Delayed introduction of allergenic food will decrease risk of food allergy in this child.
- Food preparation affects allergenicity of foods.
- Do not introduce peanuts until seen by allergist

# Food introduction to infants:

## When did feeding and infant become a medical act?

**The Problem**

- Food allergies affect 6-10% of the population
  - Many foods may be implicated although milk, egg, peanut, tree nut, sesame and seafood/fish are more common
- Diagnosis requires either a clear history of reaction plus a positive diagnostic test and/or a positive oral food challenge with objective symptoms.
  - In absence of history SPT has a 30% PPV and IgE blood tests 20%
- Previous recommendations for food introduction in infants shown to increase the frequency of food allergies (peanut) in high risk infants.
  - Only peanut was studied in the landmark trial.

# Prevention strategies with actual supporting evidence.

Smoking avoidance

Breastfeeding if possible for 4-6 months—low grade evidence studies equivocal

No special diet for pregnant or lactating mother

Eczema control

Introduce foods **without specific restriction** as early as possible. Best “chance” for allergy prevention occurs early <11months and even earlier

# What foods and how?

- Recommend to introduce eggs using the egg ladder.

# Peanuts and nuts

- Introduce early (4-6 months)
- Can use peanuts crushed and mixed into apple sauce-start with ½ peanut and increase as tolerated.
- Same strategy may be used for tree nuts and sesame
- Avoid peanut and nut butters initially as allergen bioavailability is increased in these forms
- DO NOT RUB ON SKIN FIRST

# The Case

**Scenario**

- 9 month old given peanut butter for the first time
- Within 15 minutes develops perioral hives
- Symptoms resolve without intervention

**True/false**

- This child has demonstrated an allergy to peanut
- An epipen should be prescribed
- 1/5 children outgrow allergy over time so parents can try to give peanuts again in 2 years
- No other treatments available

# Oral Immunotherapy for foods

**Pearl**

- Oral immunotherapy or desensitization is currently under investigation for children with food allergies.
- Risks include anaphylaxis and significant symptoms occur in most older children
- Many very young children tolerate slow introduction of allergenic foods into the diet even with a history of perioral hives and positive tests.
- Parental compliance is required

**Pitfall**

- Older children (>age 2 years) at increased risk for anaphylaxis
- Possibility of complete success (ie cure) is about 20-40% in children studied (older than age 6 years)
- In most children (>80%) increased of tolerant thresholds are achieved after 12 months
- Any attempt to desensitize should be done under supervision of an allergist and resuscitation equipment should be available

# Case outcome

**Pearl**

- Oral desensitization is offered and child begins at ¼ peanut crushed in apple sauce.
- 6 months later tolerating peanut butter on toast.
- Skin test remains positive

**Pitfall**

- Threshold is increased
- Not known if “a cure” has been achieved
- Positive test suggests still sensitized.
- Long term prognosis-not known

# Summary

- Complex foods should be introduced early.
- Begin with what is in the child's environment
- Format of food for introduction may be important
- Early sensitized children may be desensitized more easily
- Rapid diagnosis is essential

# Penicillin allergy in children

# The Case

**Scenario**

- 4 year old presents with pruritic skin rash on her trunk on day 7/10 of amoxicillin for OM.
- Diagnosed with allergy to penicillin and antibiotic changed to biaxin.
- The next day the rash is worse and she is told to avoid biaxin

**True/False**

- This child is likely to has an allergy to amoxicillin but not penicillin
- Multiple antibiotic allergies can occur
- Avoidance is an important part of management and she should have a medic alert bracelet for these allergies

# Allergies to antibiotics

10-20% of hospitalized patients have “allergy to penicillin” on their chart

In large cohort studies, β-lactam allergy designation increases the risk for adverse events in hospitalized patients

When patients are evaluated for allergy 75-98% of those with “penicillin allergy” tolerate penicillin and other β-lactams.

Patients with a history or “diagnosis” of antibiotic allergy should be reassessed as there is a very high rate of “false” diagnoses.

# Allergies to medications in children

**Pearl**

- The most common cause of rash in children is an acute infectious illness
- In a study where all comers were challenged with amoxicillin >90% of children had negative challenges
- Rashes often worsen over the first few days

**Pitfall**

- Many children treated with amoxicillin will have rashes
- Very few children with rash have an allergy to amoxicillin-most of those have delayed-type reactions-not IgE-mediated that are specific to the medication used.
- Patients still requiring antibiotics should be warned that the rash may continue or worsen.

# How to diagnose allergies to amoxicillin/ penicillin in children

Oral provocation test is the gold standard test.

Skin testing and serum IgE testing are inaccurate

Children are given a small dose of amoxicillin followed by a large dose.

- No immediate reaction (within 1-4 hrs) suggest no IgE-mediated allergy to penicillin or amoxicillin

Delayed onset rash can occur and is believed to be antibiotic specific (not related to the entire family)

Many children with delayed onset symptoms will likely out-grow reactions over time and should be reassessed in 2-3 years.

Although still under study- similar results are expected for other antibiotics

# What about Adults?

- Data suggests that>90% of patients with a “diagnosis” of penicillin allergy are negative on objective testing.
- There is an important initiative to “delabel” most of these patients.
- A notation of penicillin allergy on patient charts’ has been shown to result in >morbidity, prolonged hospitalizations and longer recoveries in cohort and case control studies.
- This is NOT a benign diagnosis
- Refer to allergy for assessment.
- What about other “cross-reacting” drugs?

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