Importance of dietary counseling

Aichi Children’s Health and Medical Center

Komei Ito, MD, PhD
☑ The author has no conflict of interest to disclose with respect to this presentation.
Management of Food Allergy

Strict avoidance (world standard)

- Diagnosis of “food allergy”
- Elimination diet and emergency plan

Minimal avoidance (Japanese standard)

- Diagnosis of the “safety level”
- Dietary instruction to eat as much as possible

Oral immunotherapy (International challenge)

GOAL: Release from food avoidance
Management of Food Allergy

- Strict avoidance (world standard)
- Minimal avoidance (Japanese standard)
- Oral immunotherapy (International experiences)
- Dietary counseling BEYOND OIT

GOAL: Release from food allergies
Role of dietary counseling

- For safety
  - Appropriate avoidance of allergenic foods
  - Food labelling
  - Co-operation of the related people

- For quality of life and nutrition
  - EAT what you can eat
  - Eating out
  - School lunch

- For the cure of food allergies
  - Minimal avoidance
  - Oral immunotherapy
  - and BEYOND
For safety

Many chance of accidental contact at home

Plate, Bowl, Chopsticks

Hands

Garbage

Trash

Food stock (for brothers)

Kitchen

Contamination during cooking
Food labelling in JAPAN

Mandatory labelling (7 items)
  egg, milk, wheat, peanut, shrimp, buckwheat, crub

Recommended labelling (20 items)

* Protein content several μg/g (mL) or more
  One drop of milk in 150 mL water = 10 μg/mL

* “May contain” is not allowed to be labelled

* Sorry, only in JAPANESE language

Consumer Affaires Agency, Government of Japan
Co-operation of the related people

- Grand mother, grand father (in law)
- Siblings
- Friends, Neighbors
- Nursery staffs, School teachers
- Restaurant, Hotel staffs
- Social meetings

Mothers have to explain the situation EVERY time.
They need general (social) understanding of food allergies.
Number of eliminating foods

I can’t give such a dangerous foods!

<Food staffs>
Egg, Milk, Wheat, Soybean, Buckwheat, Fish/Shrimp/Shellfish,
Vegetables, Fruits, Nuts & Seeds

Aichi Children’s Health and Medical Center 2008
2 years old Boy: Vitamin D & Calcium deficient Rachitis

Height: 78cm (-2.0SD), Weight 9.2kg (-2.0SD)
iPTH 172 pg/ml, 25(OH) Vit D <5 ng/ml

Nutritional evaluation from dietary records
Protein 64%, Fat 7 Cal%, Vit D 26.4%, Ca 33.8%
Improvement of nutritional intake after dietary counseling

Mean duration of instruction  6.6 months

Comprehensive dietary management
BEFORE
Oral Immunotherapy

Energy  Protein  Fat  Calcium

Before  After  Before  After  Before  After  Before  After

Aichi Children's Health and Medical Center
Oral food challenge testing

Egg: boiled egg white
Milk: raw milk
Wheat: udon noodles
Soy: tofu or boiled soybeans

Intake (g) 0.2 0.5 1 2 5 10

Time (minutes) 0 20 40 60 80 120 140 180

Observation

(20~40 min interval)

(3~6 increasing doses)

Evaluation: final intake dose & severity of symptoms
### Decision of the introduction dose

According to the threshold dose and symptom grade at OFC

<table>
<thead>
<tr>
<th>Final Dose</th>
<th>Symptom grade</th>
<th>Negative</th>
<th>grade 1</th>
<th>grade 2</th>
<th>grade 3</th>
<th>grade 4 / 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 g</td>
<td></td>
<td>20</td>
<td>10</td>
<td>5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10 g</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 g</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 g</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Diet instructions**

For the cure

Complete elimination (Oral immunotherapy)
Dietary instructions at follow-up visits

**OFC**

Positive

Foods: Boiled egg white, milk, wheat
Initial dose ≥ 2g

Negative

Quantitative amount of cooked egg, milk, udon
Dietary record: Every dose, provoked symptoms
If tolerated for 5 to 10 times, dose-up by 10 to 20%
Equivalent protein dose of the other products
Milk: Yogurt, Yogurt drink
Wheat: Pasta, Bread, Cookies

Quantitative intake

1 month

- After safe consumption of 2 g egg, 30 ml milk, 30 g udon

3 months

- Allow the other processed food containing less amount

6 months

- Instruction of cooking using the safe amount of allergen

9 months

12 months

- Allow to eat school lunch partially

For the cure

Application to the other processed foods
Calculation of available volume from protein content

If you can intake 30 ml of cow’s milk,

How much cheese can you eat?

Protein content
Cow’s milk 3.3%
Cheese 22.7%

30(ml) x 3.3% = ? (g) x 22.7%

Answer 4.3 g (1/4 piece)
Instruction sheet to find what you can eat.

If you can drink 10 ml of milk, you can eat one piece of sliced bread!

Because, as far as our research from manufacture, any sliced bread contains less than 10 ml equivalent of milk.
Selection of the patients for dietary instruction

Egg white: 563 OFCs
Milk: 366 OFCs
Wheat: 262 OFCs

Period of OFC: August 2011 ~ July 2013 (2 years)
Diet instruction: Challenge positive, Initial dose ≥ 2 g
(A) Non-adherence

Egg

Milk

Wheat

No visit ≤4g intake

No visit ≤5ml intake

No visit ≤1.5g intake

(B) Achievement

Proportion of patients (%)

 Duration of dietary instructions

For the cure
Daily egg consumption after achievement of full-dose tolerance

(g/day)

- **egg consumption**
- **egg-containing products**

Case number

For the cure

Umemura H: Jpn J Pediatr Allergy Immunol 29; 691-700, 2015
Daily milk consumption after achievement of full-dose tolerance

For the cure

Egg allergy w/o milk allergy  n=8
Milk allergy  n=13

Daily milk consumption after achievement of full-dose tolerance

Amount of daily milk consumption

(ml/day)

Less than 100 ml without milk itself

milk consumption
dairy products
milk-containing products

n=38
Milk consumption and calcium intake

Y = 1.17X + 170 (mg)

For the cure

Milk-independent calcium

Milk-derived calcium

Adequacy 500-600 mg/day

Calcium intake (mg/day)

Milk and dairy consumption (ml/day)
Team medicine (general)

Patient/Family

Doctor

Dietitian

Information

Counseling

Judgment

Order
Team medicine (Recommend)

Patient/Family

Doctor
- Information
- Judgment

Dietitian
- Counseling
- Suggestion

Responsibility

Share
Conclusion: Team medicine (Ideal?)

- Patient/Family
  - Information
  - Counseling
  - Suggestion

- Doctor
  - Judgment
  - Share

- Dietitian