Epidemiology of food allergy in Czech children, results of the DAFALL registry

S. Bělohlávková, E. Kopełentová, P. Víšek, J. Štádler, I. Šetinová, J. Novobílská

Immuno-flow, s.r.o., Prague, Czech Republic
DAFALL registry centers

INTRODUCTION AND METHODS

Introduction: Occurrence of food allergy has significantly risen in recent years and its prevalence is 6-8% in children and 3-4% in adults. There are some important and interesting differences in incidence of types of food allergy in different areas. Only limited data are known about the prevalence and most common triggers of adverse reaction to foods in the Czech republic.

Methods: DAFALL - Datase of Food Allergies - is an electronic registry founded in December 2014 aiming to gather epidemiological data describing data on food allergy in the Czech republic. Patients with newly diagnosed food allergy visiting any of the collaborating centers were enrolled into the registry. Involved centers cover different geographical areas of the Czech republic and include private outpatient clinics, regional hospitals and also tertiary university departments. The data describing triggers of food reactions, threshold doses, clinical symptoms and processing of food allergens were evaluated. Laboratory test results including component resolved diagnosis, skin prick tests, food challenges results (when performed) and also allergology history were evaluated. The electronic registry has been established in collaboration with Institute of Biostatistics and Analysis, Masaryk’s University, Brno, Czech republic.
October 2014 - April 2017: 1331 patients

35 collaborating allergology outpatient clinics
22.2% (n=295) children under age of 1 year
30.5% (n=405) children aged 1-6 years
47.5% (n=631) were older than 7 years of age

**MOST COMMON TRIGGERS OF FOOD REACTIONS IN EACH AGE GROUP**

Children under 1 year of age
n=295

- Cow’s milk: 85.3%
- Hen’s egg: 34.4%
- Wheat flour: 7.6%
- Fruits: 3.1%
- Vegetables: 2.7%
- Peanut: 1.8%
- Legumes: 1.3%
- Seeds: 1.3%
- Tree nuts: 1.3%
- Fish: 0.4%
- Shellfish: 0.4%
- Others: 0.4%

Children 1-6 years of age
n=405

- Tree nuts: 50.9%
- Fruits: 47.0%
- Vegetables: 22.2%
- Seeds: 19.7%
- Peanut: 10.7%
- Legumes: 6.7%
- Cow’s milk: 5.2%
- Hen’s egg: 5.2%
- Wheat flour: 4.4%
- Fish and shellfish: 4.0%
- Meat: 1.6%
- Others: 2.0%

Patients older than 7 years, n=631
In our patients with cow’s milk allergy, overwhelming majority of them reported first symptoms until 1 year of age. This confirms that cow’s milk allergy is specific for infant period.

More than 65% of them showed first symptoms when exclusively breast-fed so the threshold dose was very low – only small amounts through mother’s milk.

40% of reactions to cow’s milk were non-IgE mediated and diagnosed usually by elimination diet and food challenge test.

In 26,1% of cow’s milk allergic patients, amino-acid formulas have been used in the treatment because of extensive hydrolyzed formulas failure. This number is quite high, but consistent with some data of the literature.
IgE v.s. Non-IgE MEDIATED FOOD ALLERGY

Patients with hen’s egg allergy: N = 263
- Positive: 95.0%
- Negative: 5.0%

Patients with cow’s milk allergy: N= 435
- Positive: 40.0%
- Negative: 60.0%

sIgE>0.35 and/or positive skin prick test
- Positive
- Negative

FOOD INDUCED ANAPHYLAXIS

Most common triggers:
1. peanut
2. cow’s milk
3. cashew nut
4. fish and shellfish
5. poppy seed

CONCLUSIONS AND DISCUSSION

DAFALL registry is the first project trying to describe epidemiology of food allergy in Czech republic. The primary objective was to establish the electronic structure and recruit collaborating centers from different geographical areas of our country. For today, more than 35 centers from majority regions of Czech republic are involved with 1331 patients recruited.

The most common food allergens in children worldwide are milk, egg, wheat, soy, nuts, fish and shellfish. In our population, we recorded only very few children with reaction to soy and fish/shellfish.

Seeds, especially poppy seed, is very crucial food allergen in Czech population, with severe reactions to it and with very low threshold doses. Poppy seed belongs to most common triggers of food-induced anaphylaxis in our population, usually with reaction to non visible amounts.

In this respect, the EU legal regulation regarding mandatory labeling of allergens in foods, could be confusing for Czech poppy seed allergic patients because of missing this food in the list of 14 most important allergens for European population.

In relation to this presentation, I declare the following, real or perceived conflicts of interest: the work has been supported by following companies