

Epidemiology of food allergy in Czech republic, first results of DAFALL registry

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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- **D**atase of **F**ood **A**llergies - 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.**

CENTERS INVOLVED

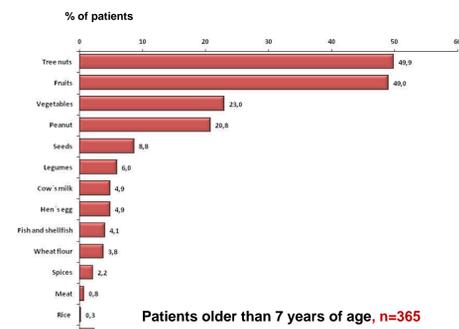
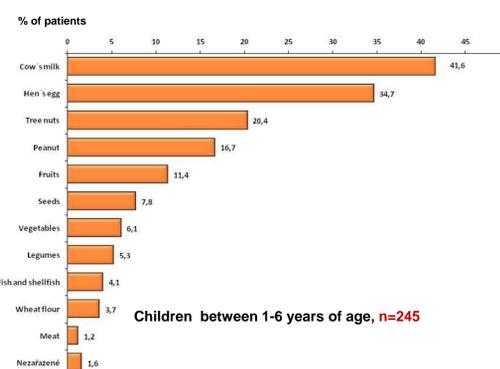
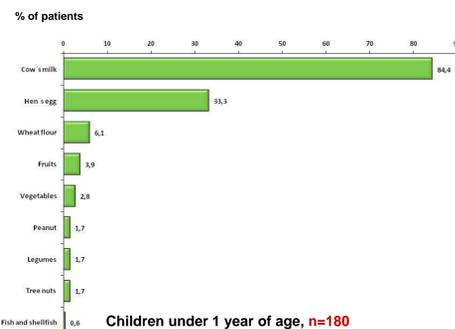
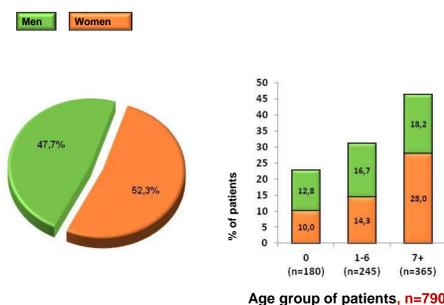


PATIENTS

During the first 15 months until March 2016, 790 patients were enrolled from more than 30 collaborating allergology outpatient clinics. 22,8% (n=180) were children under age of 1 year, 31% (n=245) children aged 1-6 years and 36,2% (n=365) were older than 7 years of age. 377 of all patients were men (47,7%) and 413 women (52,3%).

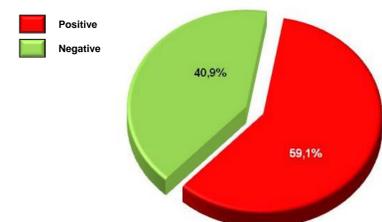
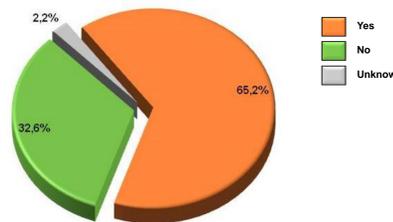
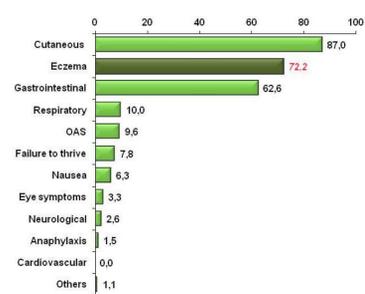
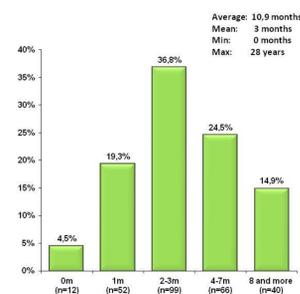
MOST COMMON TRIGGERS IN EACH AGE GROUP

In children under 1 year of age, cow's milk is the most frequent food allergen with 84,4% patients reacting. 33,3% of patients reported adverse reaction to hen's egg, 6,1% to wheat flour. The most common triggers of food reactions in the age group between 1-6 years of age were cow's milk, hen's egg, tree nuts, peanut and fruits. The „top 5” food groups in the patients older than 7 years of age were tree nuts (most often hazelnut, walnut, almond), fruits (apple, peach, kiwi), vegetables (carrot, tomato, potato), peanut and seeds (poppy seed, sesame seed).



PATIENTS WITH COW'S MILK ALLERGY

In children under 6 years of age, cow's milk was the most frequent food allergen. From all age groups, 270 patients (117 women and 153 men) reported allergic reaction to milk. In 85% of cases, first symptoms of milk allergy were recorded below 7 months of age. The most common symptoms of reaction to milk were skin symptoms (especially eczema), gastrointestinal and respiratory symptoms. 1,5% of patients reported anaphylaxis to milk. In 65,2% of cases first symptoms were noted in fully breast-fed infants through the mother's milk. 41% of milk reactions were non-IgE mediated, with no prove of any positivity in skin prick tests and/or specific IgE against milk.



Age at the time of symptoms occurrence

Type of symptoms (% of patients)

Occurrence of 1st symptoms in exclusively breast-fed infants

Specific IgE and/or positive SPT against milk

ANAPHYLAXIS

From total of 790 patients, 2,8% (n=22) reported reaction to food complying criteria of anaphylaxis. The most common triggers of anaphylaxis were peanut, cow's milk, peanut, cashew nut, fish and poppy seed.



Conflict of interest

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

SIEMENS



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 30 centers from majority regions of Czech republic are involved with 790 patients recruited in first 15 months.

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. The possible reason could be limited usage of soy formulas in patients with cow's milk allergy and very low consumption of soy in our population. Similar situation is with fish, because Czech mothers prefer delayed introduction of this food into children's diet.

Seeds, especially poppy seed, is very crucial food allergen in Czech population, with severe reactions to it and with very low threshold doses. Data from DAFALL registry confirm our previous observations in this respect. Again, the possible cause of this could be diet habits in Czech republic. 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 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. 40,9% of reactions to cow's milk were non-IgE mediated and diagnosed usually by elimination diet and food challenge test.

In 25,6% 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.

STUDY LIMITATION

Among centers involved, only few cover the area of South and West Czech republic. Majority of recruited patients are children, because of major involvement of pediatric allergologists into the project. This could lead to certain inaccuracy of our data.

The data collection will continue, at least until the end of 2017 and/or total number of recruited patients about 1500.



DATABASE OF FOOD ALLERGY

