

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/233771716>

Hospital admissions for food-induced anaphylaxis in Italian children

Article in *Clinical & Experimental Allergy* · December 2012

DOI: 10.1111/cea.12036 · Source: PubMed

CITATIONS

10

READS

52

5 authors, including:



Roberto Berni Canani

University of Naples Federico II

287 PUBLICATIONS 4,341 CITATIONS

[SEE PROFILE](#)



Rita Nocerino

University of Naples Federico II

82 PUBLICATIONS 304 CITATIONS

[SEE PROFILE](#)



Gianluca Terrin

Sapienza University of Rome

124 PUBLICATIONS 1,723 CITATIONS

[SEE PROFILE](#)



Ludovica Leone

University of Naples Federico II

33 PUBLICATIONS 541 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



MATFA (Gut Microbiota as Target for Food Allergy) [View project](#)

All content following this page was uploaded by [Roberto Berni Canani](#) on 02 March 2015.

The user has requested enhancement of the downloaded file.

CORRESPONDENCE

Hospital admissions for food-induced anaphylaxis in Italian children

R. Berni Canani^{1,2}, R. Nocerino¹, G. Terrin³, L. Leone¹ and R. Troncone^{1,2}

¹Department of Pediatrics, University of Naples "Federico II", Naples, Italy, ²European Laboratory for the Investigation of Food Induced Diseases (ELFID), University of Naples "Federico II", Naples, Italy and ³Department of Women's Health and Territorial Medicine, University "La Sapienza", Rome, Italy

Introduction

The recently published article by Vetander M. and colleagues [1] describe the overall incidence of anaphylaxis in Pediatric Emergency Departments in Sweden and the reactions to foods in relation to sex and age, clinical characteristics and management. In their experience on a North Europe paediatric population, the incidence of anaphylaxis was 32 per 100 000 persons/year irrespective of cause, and food was involved in 92%. The reported incidence is higher than that previously estimated by Bohlke et al. [2] (10.5 episodes per 100 000 persons/year), but lower than reported by Decker et al. [3] (49.8 episodes per 100 000 person/year) in the same age group in the United States.

Recent reports suggest that the incidence of anaphylaxis is rising in western countries [4, 5]. The rise in anaphylaxis incidence appears most pronounced in the youngest age group, and food antigens are the most common trigger [4]. The increase in food-induced anaphylaxis is likely to represent the tip of iceberg of the growing prevalence and severity of food allergy [6, 7]. Detailed data on hospital admissions for food-induced anaphylaxis in the paediatric population of European Southern Countries are limited. We aimed to describe trends in hospital admissions for food-induced anaphylaxis among children (0–14 years) living in Italy, by using nationally representative survey data available from the year 2001 up to 2005 from the hospital episode statistics system database of the Italian Ministry of Health (<http://www.salute.gov.it>). This is the first study investigating the trends of hospital admissions for food-induced anaphylaxis in Italian paediatric population. We identified hospital admissions for food-induced anaphylaxis using specific ICD-9 codes: 99560, 99561, 99562, 99563, 99564, 99565, 99567, 99568. These codes are the only available means to identify diagnosis of anaphylaxis by physicians operating in our

country. We analysed the number of hospital admissions over the 5-year period and the type of food responsible for the episode.

A total of 675 admissions for food-induced anaphylaxis occurred during the 5-year study period among Italian children (approximately 8 million people aged less than 14 years). A continuous significant increasing trend was observed during the study period, and the total number of hospital admissions for food-induced anaphylaxis doubled comparing the year 2001 (91, 0.007% of all admissions) with the year 2005 (178, 0.014% of all admissions) ($P = 0.016$).

We cannot exclude underestimation of the true incidence of anaphylaxis, in particular milder forms, and we considered that the use of the ICD codes for tracing patients has its limitations as symptoms and signs may not be correctly coded. In our investigation, we observe that the epidemiology of anaphylaxis continues to evolve with an ongoing increase in reporting and prevalence of both diversity of foods inducing anaphylaxis and severity of reaction, and that 31.3% of cases received a final diagnosis of food-induced anaphylaxis, but the particular food was not specified. This could derive from the absence of a specific ICD code for all dietary allergens. Thus, given irregularity in reporting and diagnosing food-induced anaphylaxis, these values might be underestimated.

Vetander and co-workers found that tree nuts, particular cashew, and peanuts are the most common eliciting foods, and in children under 3 years of age, reactions to these two food allergens are as common as reactions to cow's milk and hen's egg. In our analysis, we found that the most common foods responsible for anaphylaxis are cow's milk (42.3%), hen's egg (8.2%), nuts and seeds (5.1%), fruits and vegetables (3.1%), fish (1.8%), peanuts (1.3%), crustaceans (0.7%).

Considering the average cost for a single day of hospitalization for a child in Italy and the mean duration of food anaphylaxis-related hospital stay, we estimated that the economic costs for hospital admissions caused by food-induced anaphylaxis increased from 150.000 Euro in 2001 to 390.000 Euro in 2005. Our data suggest the importance of more research to investigate the causative factors and the necessity to improve the health care services for this condition.

Correspondence:

Roberto Berni Canani, MD, PhD, Pediatric Allergy Unit - Department of Pediatrics and European Laboratory for the Investigation of Food Induced Diseases Via S. Pansini 5 80131 Naples, Italy E mail: berni@unina.it

Conflicts of interests: The authors have no conflicts of interest to declare.

References

- 1 Vetander M, Helander D, Flodström C *et al*. Anaphylaxis and reactions to foods in children—a population-based case study of emergency department visits. *Clin Exp Allergy* 2012; **42**:568–77.
- 2 Bohlke K, Davis RL, DeStefano F, Marcy SM, Braun MM, Vaccine Safety Datalink Team. Epidemiology of anaphylaxis among children and adolescents enrolled in a health maintenance organization. *J Allergy Clin Immunol* 2004; **113**:536–42.
- 3 Decker WW, Campbell RL, Manivannan V *et al*. The etiology and incidence of anaphylaxis in Rochester, Minnesota: a report from the Rochester Epidemiology Project. *J Allergy Clin Immunol* 2008; **122**:1161–5.
- 4 Liew WK, Williamson E, Tang ML. Anaphylaxis fatalities and admissions in Australia. *J Allergy Clin Immunol* 2009; **123**:434–42.
- 5 Branum AM, Lukacs SL. Food allergy among US children: trends in prevalence and hospitalizations. *NCHS Data Brief* 2008; **10**:1–8.
- 6 Gupta R, Sheikh A, Strachan D, Anderson HR. Increasing hospital admissions for systemic allergic disorders in England: analysis of national admissions data. *BMJ* 2003; **327**:1142.
- 7 Koplin JJ, Martin PE, Allen KJ. An update on epidemiology of anaphylaxis in children and adults. *Curr Opin Allergy Clin Immunol* 2011; **11**:492–6.