PP038

Epinephrine treatment of anaphylactic reactions during food challenges in children

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Aims: The primary aim of this study is to evaluate the percentage of anaphylactic reactions treated with epinephrine during a food challenge test and to identify associated factors for the administration of epinephrine.

Methods: Children who underwent a food challenge test with peanut, hazelnut, cow’s milk, hen’s egg or cashew nut in the period 2005 to 2015 at the department of Allergology Erasmus Medical Center Rotterdam in the clinical setting or in a research setting (IDEAL-study, collaboration of three tertiary care centers for food allergy, trial number NTR3572) were evaluated. The children with reactions meeting the criteria for anaphylaxis according to the EAACI Guidelines for Food Allergy and Anaphylaxis and/or who were treated with epinephrine were included. Possible factors associated with the administration of epinephrine such as age, gender, symptoms consistent with asthma, history of an allergic reaction to the tested allergen and the type of symptoms during the anaphylactic reaction were investigated with logistic regression analysis.

Results: A total of 92 children (40 boys, 44%) with a median age of 7 years (range 1-17 years) who met the criteria for anaphylaxis (n= 85) or who were treated with epinephrine (n= 7) were included in this study. Thirty-three children (39%) with anaphylaxis were treated with epinephrine. Factors significantly associated with epinephrine treatment were younger age (p= 0.001) and lower airway symptoms (p = 0.001). Gastrointestinal symptoms and a history of an allergic reaction to the tested allergen were significantly associated with the lack of epinephrine treatment (p < 0.001 and p = 0.043, respectively).

Discussion: The most severe allergic type of reaction during a food challenge test is anaphylaxis, for which the recommended treatment is epinephrine. However, only about half of the children with anaphylaxis received epinephrine during the food challenge tests in our study. Treatment of anaphylaxis during food challenge test does not correspond to the indication for such treatment as delineated in the EAACI Guidelines. Further analysis is warranted to ascertain the cause of this discrepancy.

Conclusion: Anaphylaxis occurring during challenge tests seems to be undertreated with epinephrine.