Prognosis

Subsequent reactions were common and more serious than the initial reactions of children with peanut allergy


QUESTION: In young children with peanut allergy diagnosed before 4 years of age, what is the nature and rate of adverse reactions caused by accidental peanut exposure?

Design
Cohort study with a median of 5.9 years (range 1.4 to 22.4 y) of follow up.

Setting
Boulder, Colorado, USA.

Patients
102 children with clinical peanut hypersensitivity diagnosed before their fourth birthday. Children were included if they had a convincing history of clinical peanut hypersensitivity; a positive double blind or a placebo controlled food challenge response to peanuts, or both; and a positive skin prick test response to peanuts. Data for 85 children (81%) (median age 2.4 y, 69% boys) were available for the analysis.

Assessment of prognostic factors
Initial assessment records: severity of symptoms (non-life threatening or potentially life threatening); organ system involvement (skin, respiratory, gastrointestinal, or other); and serum peanut specific immunoglobulin E (IgE) concentrations (in 51 of 85 [61%] children).

Main outcome measures
Subsequent adverse reactions after a first peanut exposure were assessed at least yearly.

Main results
50 children (60%) had a total of 115 adverse reactions caused by accidental peanut exposure during follow up (mean 0.33 adverse reactions/y). During their first reaction, 12 children (14%) had skin symptoms alone after only skin contact with peanuts; 26 (31%) had skin symptoms alone after eating peanuts; and 45 (54%) had respiratory symptoms, gastrointestinal symptoms, skin symptoms, or all 3. 61 children (73%) had non-life threatening first reactions to accidental peanut exposure, and 22 (27%) had potentially life threatening first reactions. Of the 61 children with non-life threatening first reactions, 43 had a subsequent reaction, with 19 (44%) being potentially life threatening. Of the 22 children with potentially life threatening first reactions, 17 had a subsequent reaction, with 12 (71%) being potentially life threatening. Overall, of the 60 children (72%) with ≥1 subsequent reaction, 31 (52%) had ≥1 potentially life threatening subsequent reaction.

Of the 51 children who had their serum peanut specific IgE concentrations measured, those who had subsequent skin symptoms alone (n = 11) had a lower median serum peanut specific IgE concentration than those who had subsequent respiratory symptoms or gastrointestinal symptoms, or both (n = 40) (1.25 vs. 1.65 kU/L, p = 0.004). However, no threshold level for serum peanut specific IgE existed below which only skin symptoms occurred.

Conclusion
Most young children with clinical peanut hypersensitivity continued to have adverse reactions to accidental peanut exposure; however, symptoms experienced during a subsequent adverse peanut reaction were not easily predictable either from symptoms experienced during a first reaction or from immunoglobulin E concentrations.