Should we proceed directly to provocation challenges to diagnose drug allergy? Our experience says yes

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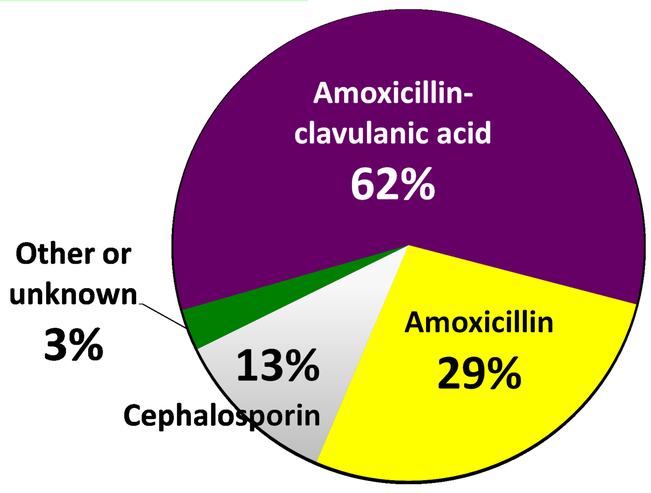
Background:
True beta-lactam antibiotic (BLA) hypersensitivity (BLAH) is very rare in childhood. The predictive values of skin and in vitro test are unknown. Oral provocation tests (OPT) are generally safely performed. We are reporting our experience in the evaluation of children with suspected BLAH.

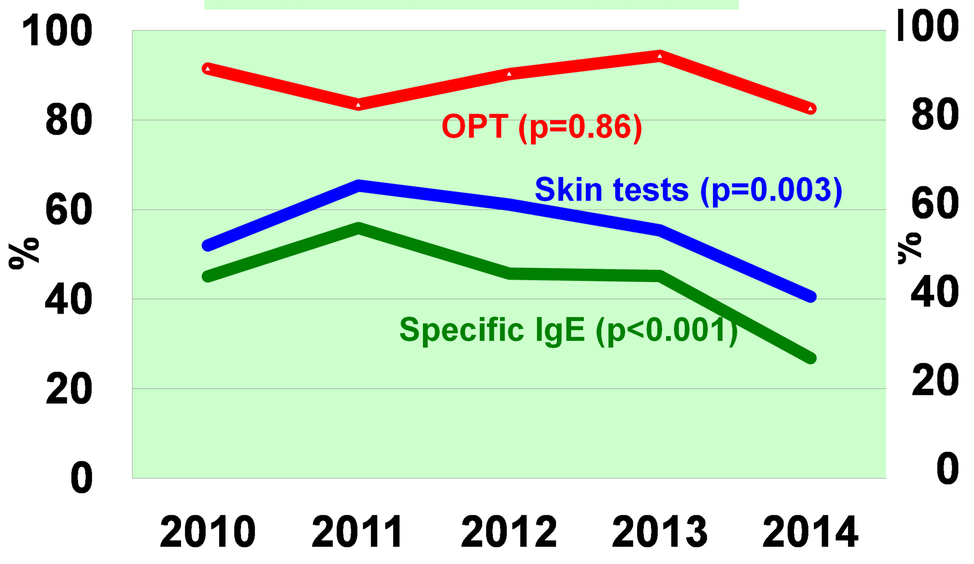
Methods: Patients attended for suspected BLAH in the allied pediatric allergy units of 6 close hospitals from 2010 to 2014 were reviewed. Data related to patients, past episodes, allergic workup and results was collected . The trends of in vitro and skin tests were analyzed by means of Pearson's correlation coefficient. The characteristics of patients diagnosed of BLAH were compared with those with a negative OPT by means of Fisher's exact test. Odds ratio were calculated for risk factors for diagnosed BLAH.

Results: 668 patients

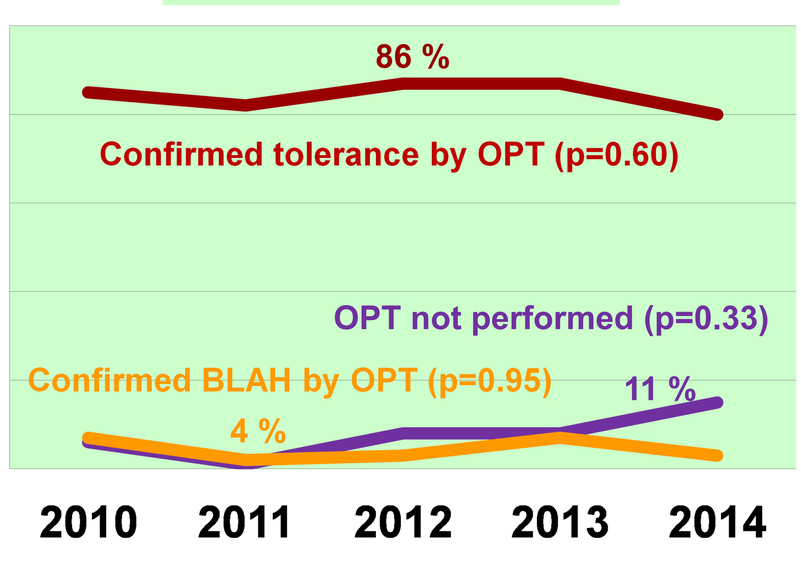
Implicated BLA

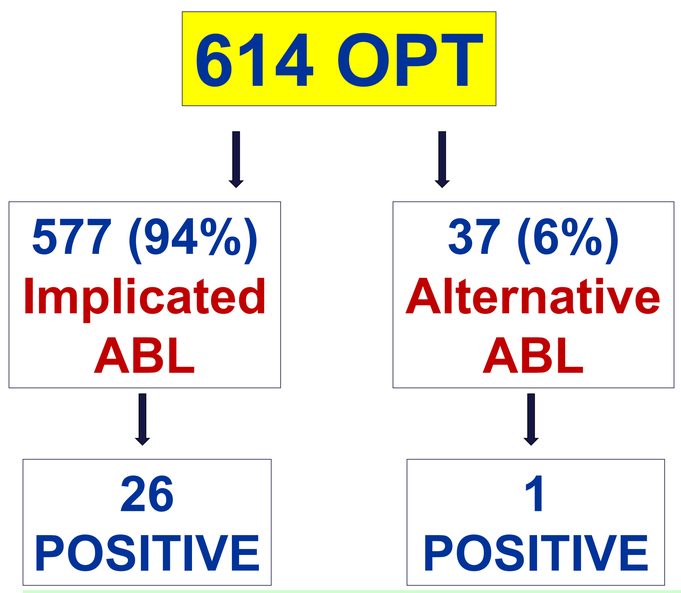


Trends of tests ordered



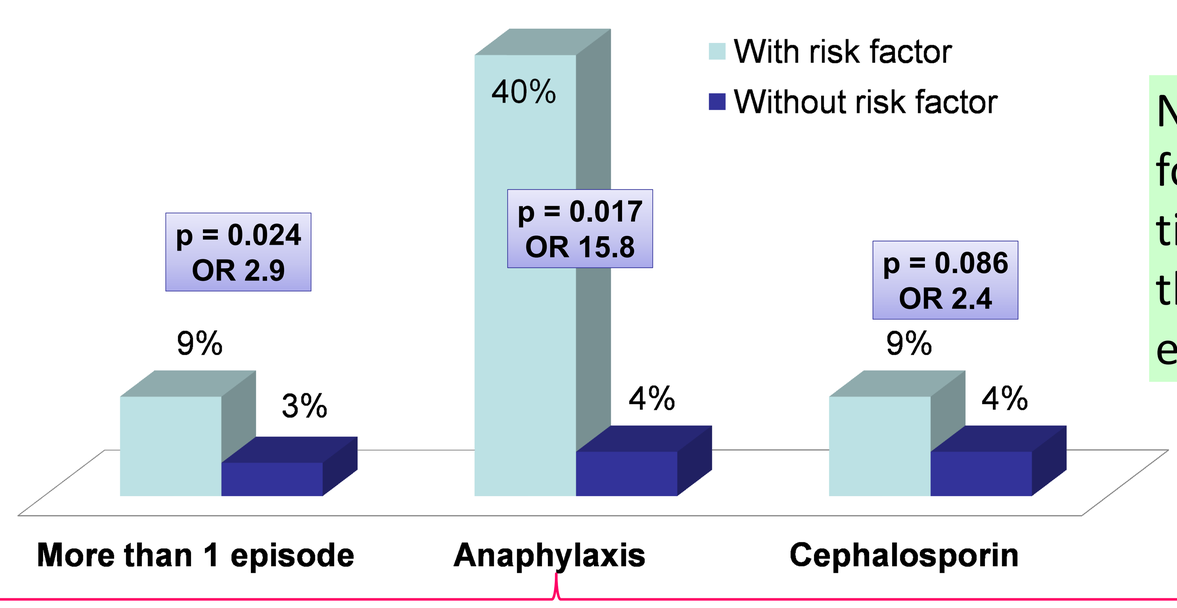
Trends of outcomes





All 26 patients with a positive OPT showed early or delayed skin signs (exanthem, urticaria, angioedema...) but none had severe or anaphylactic reactions

Percentage of BLAH diagnosis depending on the presence of risk factors (excluded those with study not concluded)



No differences were found for age, sex or time (more or less than 1 year) since episode

9 patients with history of anaphylaxis: in vitro and skin tests always ordered
- 1 severe anaphylaxis with amoxicillin and positive in vitro and skin tests: tolerated OPT with cefuroxime
- 3 anaphylaxis by parenteral route: not challenged with implicated BLA
- 4 patients OPT: only 1 positive (skin reaction)
- 1 patient did not return to follow the study

Conclusions: OPT is an easy and **safe** procedure to definitively diagnose or rule out BLAH in children. The role of skin and in vitro tests in pediatric patients is being questioned and needs clarification.