Children are more likely to experience a negative oral food challenge to fish and shellfish than previously thought, even with a history of anaphylaxis.

Introduction

• The natural history of seafood allergy is not well understood, although it is believed that most seafood allergies are persistent.
• There are no 50% negative predictive value (NPV) cutoffs established for food-specific IgE (FSIgE) levels to recommend an oral food challenge (OFC) for fish or shellfish.

Objectives

• Identify clinical characteristics in children with fish or shellfish allergy who were most likely to experience a negative OFC.

Methods

• Retrospective chart review for children aged 21 years or younger who had a graded OFC to seafood at a Midwest pediatric tertiary care center from 2008 through 2019.

Results

• 63 OFCs were performed; 21 were fish and 42 were shellfish.
• 78% had a negative OFC, whereas 22% either refused to complete the challenge (4/14) or had a clinical reaction (10/14).
• Based on the initial clinical reaction, most patients had a negative OFC if their presenting history was urticaria (18/49) and positive FSIgE levels for negative (<0.34 kU/L) versus positive (1.37 kU/L) OFCs for fish (p = 0.023), but not for shellfish (p = 0.272).
• A cutoff of 1.99 kU/L was associated with an NPV of 82.5%.

Conclusions

• A retrospective study of OFCs to seafood showed that the rate of a positive OFC was low.
• While seafood allergy is rarely outgrown, children who have a low FSIgE level can successfully tolerate seafood.