CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Oral Immunotherapy Protocols for Food Allergy in Infants and Children: Comparative Clinical Effectiveness
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Acknowledgments:

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.
Research Question
What is the clinical effectiveness of oral immunotherapy (OIT) for food allergy in children?

Key Findings
Six randomized controlled trials and two non-randomized studies were identified regarding the clinical effectiveness of oral immunotherapy (OIT) for food allergy in children.

Methods
A limited literature search was conducted on key resources including Ovid Medline, PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases and a focused Internet search. No methodological filters were applied to limit retrieval by publication type. The search was limited to English language documents published between January 1, 2013 and September 21, 2018.

Selection Criteria
One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Pediatric populations (ages 0-18) with food allergy</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Oral immunotherapy (OIT)</td>
</tr>
<tr>
<td>Comparator</td>
<td>Other doses / titration protocols of oral immunotherapy</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Clinical effectiveness (quality of life related outcomes, e.g., anxiety, immune desensitization or tolerance, ability to eat food; harms)</td>
</tr>
<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies</td>
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</tbody>
</table>
Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials and non-randomized studies.

Six randomized controlled trials and two non-randomized studies were identified regarding the clinical effectiveness of oral immunotherapy (OIT) for food allergy in children. No relevant health technology assessments, systematic reviews, or meta-analyses were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

Six randomized controlled trials (RCTs) and two non-randomized studies were identified regarding the clinical effectiveness of oral immunotherapy (OIT) for food allergy in children.

The authors of one RCT that examined multiple food allergies concluded that the concurrent use of a particular anti-Immunoglobulin E (IgE) biologic drug provided a rapid and safe oral immunotherapy desensitisation technique compared to placebo.

In egg allergic populations, one RCT evaluated the efficacy of a rush OIT protocol. It induced desensitisation to whole eggs and improved health-related quality of life of families; however, allergic reactions were common. Similarly, another RCT concluded that pasteurised egg white OIT following a specified incremental dosing pattern was an effective treatment in children with egg allergy.

In peanut allergic populations, one RCT evaluated two dosing protocols in children with the goal of reaching a maintenance dose. A comparison of the oral and sublingual route was performed in another trial, with the authors concluding that the oral route was more effective yet associated with more adverse reactions.

In cow’s milk allergic populations, one RCT reported that partially hydrolysed cow’s-milk-protein-based formula enhanced tolerance in children when compared to an extensively hydrolysed formula. Another non-randomized study reported that most children who incorporated baked milk into their diet progressed to tolerating more allergenic forms of milk. The final identified non-randomized study stratified the safety and efficacy of desensitisation according to specific IgE levels. The authors further described that severe adverse events were frequent when specific IgE levels were elevated, whereas tolerance was achieved earlier in the presence of lower levels.

Adverse events were reported in all but one study and spanned the spectrum from mild to anaphylaxis. One trial indicated that the most common adverse events were gastrointestinal in nature, whereas another trial reported that moderate reactions and those requiring adrenaline were more frequent in patients with allergic-asthma.
References Summarized

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials


Non-Randomized Studies

Appendix — Further Information

Systematic Reviews and Meta-Analyses

*Alternative Population - Mixed Ages*


*Alternative Comparator - Mixed Comparators*


Randomized Controlled Trials

*Alternative Population - Mixed Ages*


*Alternative Comparator - Compared to Placebo*


**Alternative Comparator - Compared to Avoidance**


**Alternative Comparator - Comparator Not Defined**


**Alternative Intervention – Maintenance Dosing**


**Non-Randomized Studies**

**Alternative Comparator - No Comparator**


Alternative Comparator - Compared to Avoidance


Alternative Comparator - Compared to No Oral Immunotherapy


Alternative Comparator - Comparator Not Defined