Polysaccharide-Iron Complex for Children with Iron Deficiency: Clinical and Cost-Effectiveness
Authors: Charlotte Wells, Charlene Argáez


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 Questions
1. What is the clinical effectiveness of polysaccharide-iron complex for children with iron deficiency?
2. What is the cost-effectiveness of polysaccharide-iron complex for children with iron deficiency?

Key Findings
One randomized controlled trial was identified regarding the clinical effectiveness of polysaccharide-iron complex for children with iron deficiency.

Methods
A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit the retrieval to health technology assessments, systematic reviews, and meta-analyses, economic studies, randomized controlled trials, and non-randomized studies. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2012 and October 30, 2017. Internet links were provided, where available.

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>Children (age &lt; 18) with iron deficiency</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Polysaccharide-iron complex (e.g., FeraMAX, NovaFerrum)</td>
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<td>Comparator</td>
<td>Ferrous sulfate (e.g., Fer-In-Sol syrup or liquid, Pms-Ferrous Sulfate Solution or Drops, Dom-Ferrous Sulfate Drops), Ferrous fumarate</td>
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<tr>
<td>Outcomes</td>
<td>Q1: Clinical effectiveness (e.g., hemoglobin, serum ferritin, compliance, patient satisfaction, adverse events)</td>
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<td>Q2: Cost-effectiveness</td>
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<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations</td>
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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, non-randomized studies, and economic evaluations.

One randomized controlled trial was identified regarding the clinical effectiveness of polysaccharide-iron complex for children with iron deficiency. No relevant health technology assessments, systematic reviews, meta-analyses, or non-randomized studies were identified. Additionally, no economic evaluations were identified regarding the cost-effectiveness of polysaccharide-iron complex for children with iron deficiency.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

One randomized controlled trial (RCT) was identified regarding the clinical effectiveness of polysaccharide-iron complex (PIC) for children with iron deficiency. The authors of this RCT examined the effect of ferrous sulfate compared with the effect of polysaccharide iron complex in young children aged 9 to 48 months. Over 12 weeks, mean hemoglobin levels increased in both groups, but ferrous sulfate had a significantly greater effect on the difference in mean hemoglobin, when based on a linear mixed model. Similarly, over 12 weeks, both intervention groups showed an increase in serum ferritin levels, but ferrous sulfate showed a significantly greater effect on the difference in serum ferritin levels when compared to PIC. The proportion of individuals with complete resolution of their iron-deficiency anemia was higher in the ferrous sulfate group when compared to PIC. Finally, diarrhea was more heavily reported in the PIC group than in the ferrous sulfate group.

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials


Non-Randomized Studies

No literature identified.
Economic Evaluations

No literature identified.
Appendix — Further Information

Previous CADTH Reports


Systematic Reviews and Meta-Analyses – Uncertain Intervention


   Abstract available from: http://pediatrics.aappublications.org/content/131/4/739