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CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Oral Polysaccharide Iron Complex and Heme Iron Polypeptide for Those Requiring Iron Supplementation: Clinical Effectiveness, Cost-Effectiveness, Safety, and Guidelines

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Research Questions

1. What is the comparative clinical effectiveness of oral polysaccharide iron complex or heme iron polypeptide versus oral iron salts for iron supplementation?
2. What is the comparative clinical effectiveness of oral polysaccharide iron complex or heme iron polypeptide versus injectable iron supplements for iron supplementation?
3. What is the clinical evidence regarding the safety of oral polysaccharide iron complex or heme iron polypeptide versus injectable iron supplements for iron supplementation?
4. What is the cost-effectiveness of oral polysaccharide iron complex or heme iron polypeptide for iron supplementation?
5. What are the evidence-based guidelines regarding the use of oral polysaccharide iron complex or heme iron polypeptide for iron supplementation?

Key Findings

Two randomized controlled trials were identified on the clinical effectiveness of oral polysaccharide iron complex and heme iron polypeptide for those requiring iron supplementation. No relevant economic evaluations or evidence-based guidelines were identified.

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. For Q4 and Q5, methodological filters were applied to limit retrieval to economic studies and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2015 and February 21, 2019.

Selection Criteria

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

Table 1: Selection Criteria

Population	Anyone requiring iron supplementation in any setting (such as: adults, elderly, children, infants, pregnant people, etc.)
Intervention	Oral polysaccharide iron complex (e.g.,Triferexx, Feramax, Jamp Ferrous polysaccharide, Niferex, Polyride-FE); Oral heme iron polypeptide (e.g., Proferrin, Jamp-Iron Polypeptide);

Comparator	Q1,4: Iron salts (ferrous sulfate, ferrous fumarate, ferrous gluconate), or the interventions compared to one another; Q2,3: Injectable iron formulations (such as: iron sucrose, iron dextran, iron sodium ferric gluconate, iron isomaltoside, etc.); Q5: None
Outcomes	Q1,2: Efficacy (improvement in relevant laboratory findings such as: mean corpuscular volume, hemoglobin, ferritin, transferring saturation, hematocrit, serum iron, total iron binding capacity, red cell distribution width, reticulocyte count, etc.); Q3: Side effects and adverse events (such as: nausea, vomiting, diarrhea, constipation, gastrointestinal upset, epigastric pain, etc.); Q4: Cost-effectiveness, incremental cost per health benefit gained; Q5: Guidelines;
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines

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, economic evaluations, and evidence-based guidelines.

Two randomized controlled trials were identified on the clinical effectiveness of oral polysaccharide iron complex and heme iron polypeptide for those requiring iron supplementation. No relevant health technology assessments, systematic reviews, meta-analyses, non-randomized studies, or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

Heme Iron versus Iron Salts

1. Mischler RA, Armah SM, Craig BA, et al. Comparison of Oral Iron supplement Formulations for Normalization of Iron Status Following Roux-EN-y Gastric Bypass Surgery: a Randomized Trial. *Obes Surg*. 2018 Feb;28(2):369-377. PubMed: PM28779269

Iron Polysaccharide Complex versus Iron Salts

2. Powers JM, Buchanan GR, Adix L, Zhang S, Gao A, McCavit TL. Effect of Low-Dose Ferrous Sulfate vs Iron Polysaccharide Complex on Hemoglobin Concentration in Young Children With Nutritional Iron-Deficiency Anemia: A Randomized Clinical Trial. *JAMA*. 2017 Jun 13;317(22):2297-2304. PubMed: PM28609534

Non-Randomized Studies

No literature identified.

Economic Evaluations

No literature identified.

Guidelines and Recommendations

No literature identified.

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Appendix — Further Information

Previous CADTH Reports

3. Polysaccharide-iron complex for children with iron deficiency: clinical and cost-effectiveness. *(CADTH rapid response report: summary of abstracts).* Ottawa (ON): CADTH; 2017. https://www.cadth.ca/polysaccharide-iron-complex-children-iron-deficiency-clinical-and-cost-effectiveness-0

4. Liquid or water soluble polysaccharide-iron complex versus ferrous sulfate for pediatric populations: clinical and cost-effectiveness. *(CADTH rapid response report: summary of abstracts).* Ottawa (ON): CADTH; 2016. https://www.cadth.ca/liquid-or-water-soluble-polysaccharide-iron-complex-versus-ferrous-sulfate-pediatric-populations-0

5. Oral iron for anemia: a review of the clinical effectiveness, cost-effectiveness and guidelines. *(CADTH rapid response report: summary with critical appraisal).* Ottawa (ON): CADTH; 2016. PubMed: PM26889525

Systematic Reviews or Meta-Analyses – Oral Therapy Unspecified

6. Nielsen OH, Ainsworth M, Coskun M, Weiss G. Management of iron-deficiency anemia in inflammatory bowel disease: a systematic review. Medicine (Baltimore). 2015 Jun;94(23):e963. https://www.ncbi.nlm.nih.gov/pubmed/26061331