

CADTH Reference List

Interferon Gamma for the Long-Term Treatment of Chronic Granulomatous Disease

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Key Messages

- No relevant studies were identified regarding the clinical effectiveness of using interferon gamma for the long-term treatment of chronic granulomatous disease.
- No relevant studies were identified regarding the cost-effectiveness of using interferon gamma for the long-term treatment of chronic granulomatous disease.
- No relevant evidence-based guidelines were identified for the long-term treatment of chronic granulomatous disease.

Research Questions

1. What is the clinical effectiveness of using interferon gamma for the long-term treatment of chronic granulomatous disease?
2. What is the cost-effectiveness of using interferon gamma for the long-term treatment of chronic granulomatous disease?
3. What are the evidence-based guidelines for the long-term treatment of chronic granulomatous disease?

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, Embase, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were interferon gamma and chronic granulomatous disease. For research questions number 1 and number 2, no filters were applied to limit the retrieval by study type. For research question number 3, search filters were applied to limit retrieval to guidelines. When possible, retrieval was limited to the human population. The search was also limited to English-language documents published between January 1, 2011, and October 26, 2021. Internet links were provided if available.

Selection Criteria and Summary Methods

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed. The Overall Summary of Findings was based on information available in the abstracts of selected publications. Open access full-text versions of evidence-based guidelines were reviewed when abstracts were not available, and relevant recommendations were summarized.

Table 1: Selection Criteria

Criteria	Description
Population	Adults with CGD
Intervention	Q1 and Q2: Long-term use of interferon gamma (i.e., > 3 months) (e.g., Actimmune) Q3: Long-term treatment for CGD (i.e., > 3 months)
Comparator	Q1 and Q2: Treatment as usual (e.g., antibiotic therapy, corticosteroid therapy) Q3: Not applicable
Outcomes	Q1: Clinical effectiveness (e.g., CGD symptom severity, infection control, inflammation control, patient quality of life, adverse events, hospitalization) Q2: Cost-effectiveness (e.g., cost per quality-adjusted life-year [incremental cost-effectiveness ratio], cost per adverse event avoided) Q3: Recommendations regarding the best practice for long-term treatment of CGD (e.g., long-term treatment therapies, treatment implementation, appropriate populations, and clinical settings)
Study designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, economic evaluations, evidence-based guidelines

CGD = chronic granulomatous disease; Q = question.

Results

No relevant health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, or economic evaluations were identified regarding the clinical effectiveness or cost-effectiveness of using interferon gamma for the long-term treatment of chronic granulomatous disease. No relevant evidence-based guidelines were identified for the long-term treatment of chronic granulomatous disease.

References of potential interest that did not meet the inclusion criteria are provided in Appendix 1.

Overall Summary of Findings

No relevant literature was found regarding the clinical effectiveness or cost-effectiveness of using interferon gamma for the long-term treatment of chronic granulomatous disease; therefore, no summary can be provided. In addition, no relevant evidence-based guidelines were identified for the long-term treatment of chronic granulomatous disease; therefore, no summary can be provided.

References

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-Analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Economic Evaluations

No literature identified.

Guidelines and Recommendations

No literature identified.

Appendix 1: References of Potential Interest

Systematic Reviews and Meta-Analyses – Unclear Intervention (Length of Treatment Not Specified)

1. Reyes SOL, Bobadilla YG, Lizarraga DR, et al. A systematic review and meta-analysis on the safety and efficacy of interferon gamma as added treatment for chronic granulomatous disease, as compared to antimicrobial prophylaxis alone. *J Clin Immunol*. 2017 October;37(1 Supplement 1):S63-S64.

Non-Randomized Studies – Before-and-After Study

2. Panahi Y, Izadi M, Beiraghdar F, Pourpak Z, Fazlollahi M, Moharamzad Y. Clinical efficacy of interferon-g (G Immunox) in chronic granulomatous disease. *Clin Microbiol Infect*. 2011 May;4):S828.

Clinical Practice Guidelines

3. Bonilla FA, Khan DA, Ballas ZK, et al. Practice parameter for the diagnosis and management of primary immunodeficiency. *J Allergy Clin Immunol*. 2015 30 Dec;136(5):1186-1205. [PubMed](#)
See: Summary statement 153 (p. 1205.e44)

Review Articles

4. Rawat A, Bhattad S, Singh S. Chronic Granulomatous Disease. *Indian J Pediatr*. 2016 Apr;83(4):345-353. [PubMed](#)
5. Lyseng-Williamson KA. Interferon gamma-1b in chronic granulomatous disease and severe malignant osteopetrosis: a guide to its use in the USA. *Drugs Ther Perspect*. 2015 15 Jul;31(7):213-220.