

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Interventions for the Treatment or Management of Tuberculosis: Clinical Effectiveness and Guidelines

Service Line: Rapid Response Service
Version: 1.0
Publication Date: July 08, 2019
Report Length: 7 Pages

Authors: Diksha Kumar, Charlene Argáez

Cite As: Interventions for the treatment or management of tuberculosis: clinical effectiveness and guidelines. Ottawa: CADTH; 2019 Jul. (CADTH rapid response report: reference list).

Disclaimer: The information in this document is intended to help Canadian health care decision-makers, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not endorse any information, drugs, therapies, treatments, products, processes, or services.

While care has been taken to ensure that the information prepared by CADTH in this document is accurate, complete, and up-to-date as at the applicable date the material was first published by CADTH, CADTH does not make any guarantees to that effect. CADTH does not guarantee and is not responsible for the quality, currency, propriety, accuracy, or reasonableness of any statements, information, or conclusions contained in any third-party materials used in preparing this document. The views and opinions of third parties published in this document do not necessarily state or reflect those of CADTH.

CADTH is not responsible for any errors, omissions, injury, loss, or damage arising from or relating to the use (or misuse) of any information, statements, or conclusions contained in or implied by the contents of this document or any of the source materials.

This document may contain links to third-party websites. CADTH does not have control over the content of such sites. Use of third-party sites is governed by the third-party website owners' own terms and conditions set out for such sites. CADTH does not make any guarantee with respect to any information contained on such third-party sites and CADTH is not responsible for any injury, loss, or damage suffered as a result of using such third-party sites. CADTH has no responsibility for the collection, use, and disclosure of personal information by third-party sites.

Subject to the aforementioned limitations, the views expressed herein do not necessarily reflect the views of Health Canada, Canada's provincial or territorial governments, other CADTH funders, or any third-party supplier of information.

This document is prepared and intended for use in the context of the Canadian health care system. The use of this document outside of Canada is done so at the user's own risk.

This disclaimer and any questions or matters of any nature arising from or relating to the content or use (or misuse) of this document will be governed by and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein, and all proceedings shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario, Canada.

The copyright and other intellectual property rights in this document are owned by CADTH and its licensors. These rights are protected by the Canadian *Copyright Act* and other national and international laws and agreements. Users are permitted to make copies of this document for non-commercial purposes only, provided it is not modified when reproduced and appropriate credit is given to CADTH and its licensors.

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.

Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

Questions or requests for information about this report can be directed to requests@cadth.ca

Research Questions

1. What is the clinical effectiveness of interventions used to treat or manage individuals with tuberculosis?
2. What are the evidence-based guidelines regarding the treatment or management of individuals with tuberculosis?

Key Findings

Nine systematic reviews (eight with meta-analysis) and four evidence-based guidelines were identified regarding the treatment or management of individuals with tuberculosis.

Methods

A limited literature search was conducted by an information specialist 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. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were tuberculosis and treatment types. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and July 3, 2019. 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

Population	Any individual that has been diagnosed with tuberculosis
Intervention	Any intervention used to treat or manage individuals diagnosed with tuberculosis
Comparator	Q1: Any other intervention used to treat or manage individuals diagnosed with tuberculosis Q2: No comparator
Outcomes	Q1: Clinical effectiveness, safety Q2: Evidence-based guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, 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 evidence-based guidelines. Due to the volume of relevant literature that was identified from the search results, inclusion in this report was limited to studies published after 2016.

Nine systematic reviews (eight with meta-analysis) and four evidence-based guidelines were identified regarding the treatment or management of individuals with tuberculosis. No relevant health technology assessments were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

1. Jolliffe DA, Ganmaa D, Wejse C, et al. Adjunctive vitamin D in tuberculosis treatment: meta-analysis of individual participant data. *Eur Respir J*. 2019 Mar;53(3).
[PubMed: PM30728208](#)

Drug-Resistant Tuberculosis

2. Singh B, Cocker D, Ryan H, et al. Linezolid for drug - resistant pulmonary tuberculosis. *Cochrane Database Syst Rev*. 2019 Mar 20;3:CD012836 .
[PubMed: PM30893466](#)
3. Ahmad N, Ahuja SD, Akkerman OW, et al. Treatment correlates of successful outcomes in pulmonary multidrug-resistant tuberculosis: an individual patient data meta-analysis. *Lancet*. 2018 Sep 8;392(10150):821-834.
[PubMed: PM30215381](#)
4. Fregonese F, Ahuja SD, Akkerman OW, et al. Comparison of different treatments for isoniazid-resistant tuberculosis: an individual patient data meta-analysis. *Lancet Respir Med*. 2018 Apr;6(4):265-275.
[PubMed: PM29595509](#)
5. Ahmad Khan F, Salim MAH, du Cros P, et al. Effectiveness and safety of standardised shorter regimens for multidrug-resistant tuberculosis: individual patient data and aggregate data meta-analyses. *Eur Respir J*. 2017 Jul;50(1).
[PubMed: PM28751411](#)
6. Gegia M, Winters N, Benedetti A, van Soolingen D, Menzies D. Treatment of isoniazid-resistant tuberculosis with first-line drugs: a systematic review and meta-analysis. *Lancet Infect Dis*. 2017 Feb;17(2):223-234.
[PubMed: PM27865891](#)

Latent Tuberculosis

7. Marks SM, Mase SR, Morris SB. Systematic review, meta-analysis, and cost-effectiveness of treatment of latent tuberculosis to reduce progression to multidrug-resistant tuberculosis. *Clin Infect Dis*. 2017 Jun 15;64(12):1670-1677.
[PubMed: PM28329197](#)
8. Pease C, Hutton B, Yazdi F, et al. Efficacy and completion rates of rifapentine and isoniazid (3HP) compared to other treatment regimens for latent tuberculosis infection: a systematic review with network meta-analyses. *BMC Infect Dis*. 2017 Apr 11;17(1):265.
[PubMed: PM28399802](#)
9. Zenner D, Beer N, Harris RJ, Lipman MC, Stagg HR, van der Werf MJ. Treatment of latent tuberculosis infection: an updated network meta-analysis. *Ann Intern Med*. 2017 Aug 15;167(4):248-255.
[PubMed: PM28761946](#)

Guidelines and Recommendations

10. Latent TB infection: updated and consolidated guidelines for programmatic management. Geneva, Switzerland: World Health Organization. 2018;
<https://www.who.int/tb/publications/2018/latent-tuberculosis-infection/en/>
Accessed 2019 Jul 08
See: Section 5
11. Borisov AS, Morris SB, Njie GJ, Winston CA, Burton D, Goldberg S, et al. Update of recommendations for use of once-weekly isoniazid-rifapentine regimen to treat latent mycobacterium tuberculosis infection. *Weekly* June 29, 2018;67(25):723-726.
https://www.cdc.gov/mmwr/volumes/67/wr/mm6725a5.htm?s_cid=mm6725a5_w
Accessed 2019 Jul 08.
12. Guidelines for the prevention and treatment of opportunistic infections in adults and adolescents with HIV. AIDSInfo, U.S. Department of Health and Human Services; 2017 Sep; <https://aidsinfo.nih.gov/guidelines/html/4/adult-and-adolescent-opi-prevention-and-treatment-guidelines/325/tb>
Accessed 2019 Jul 08.
13. Guidelines for treatment of drug-susceptible tuberculosis and patient care (2017 update). Geneva, Switzerland: World Health Organization. 2017 Apr;
https://www.who.int/tb/publications/2017/dstb_guidance_2017/en/
Accessed 2019 Jul 08.

Appendix — Further Information

Systematic Reviews and Meta-analyses

Unknown Comparator

14. D'Ambrosio L, Centis R, Tiberi S, et al. Delamanid and bedaquiline to treat multidrug-resistant and extensively drug-resistant tuberculosis in children: a systematic review. *J Thorac Dis.* 2017 Jul;9(7):2093-2101.
[PubMed: PM28840010](#)
15. Junior JCL, Ramos RTT, Robazzi T. Treatment of latent tuberculosis in patients with juvenile rheumatic diseases: a systematic review. *Revista brasileira de reumatologia.* 2017 May - Jun;57(3):245-253.
[PubMed: PM28535897](#)
16. Migliori GB, Pontali E, Sotgiu G, et al. Combined use of delamanid and bedaquiline to treat multidrug-resistant and extensively drug-resistant tuberculosis: a systematic review. *Int J Mol Sci.* 2017 Feb 7;18(2).
[PubMed: PM28178199](#)

Alternative Outcomes

17. Boyd R, Ford N, Padgen P, Cox H. Time to treatment for rifampicin-resistant tuberculosis: systematic review and meta-analysis. *Int J Tuberc Lung Dis.* 2017 Nov 1;21(11):1173-1180.
[PubMed: PM29037299](#)

Guidelines and Recommendations

18. Latent tuberculosis infection (LTBI) treatment guidance in Washington State: promoting rifamycin-based, shorter-course regimens. Kent (WA): Washington State Department of Health; 2019 May:
<https://www.doh.wa.gov/Portals/1/Documents/Pubs/343-158-LTBI%20guidance%20in%20WA.pdf>
Accessed 2019 Jul 08.
19. Piubello A, Ait-Khaled N, Caminero JA, et al. Field guide for the management of drug-resistant tuberculosis. Paris, France: International Union Against Tuberculosis and Lung Disease (The Union); 2018;
http://www.tbonline.info/media/uploads/documents/theunion_dr-tb-guide.pdf
Accessed 2019 Jul 08.
20. Haraus EP, Garcia-Prats AJ, Seddon JA, et al. New and repurposed drugs for pediatric multidrug-resistant tuberculosis. practice-based recommendations. *Am J Respir Crit Care Med.* 2017 May 15;195(10):1300-1310.
[PubMed: PM27854508](#)

Review Articles

21. Ramos-Espinosa O, Islas-Weinstein L, Peralta-Alvarez MP, Lopez-Torres MO, Hernandez-Pando R. The use of immunotherapy for the treatment of tuberculosis. *Expert Rev Respir Med.* 2018 May;12(5):427-440.
[PubMed: PM29575946](#)