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CADTH RAPID RESPONSE REPORT: REFERENCE LIST

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

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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.

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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-oi-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, Aït-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. Harausz 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