

Children Exposed to Tuberculosis: a systematic review of clinical practice guidelines protocol.

Abstract

Introduction

Clinical practice guidelines (CPGs) or guidelines are designed to help facultative with health care decision-making. Despite worldwide many CPGs have been developed around tuberculosis (TB) in Colombia there is no specific CPG that addresses the evaluation, treatment, and follow-up of children in contact with patients with pulmonary TB. It seems appropriate, then, to provide the scientific community and other interested parties the strategy to be used by the working group to carry out the systematic review of clinical practice guidelines about TB in children.

Methods and analysis

We designed a protocol for a systematic review (SR) of GPCs with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) and the PICAR framework. We will conduct an electronic literature search for relevant GPCs in MEDLINE and Embase databases using the Ovid interface and we will scan the bibliographies of all eligible guidelines for other relevant citations. We will also search for literature in several other sources. Teams of two reviewers, independently and in duplicate will screen titles and abstracts and potentially eligible full text reports to determine eligibility and appraised the reporting quality of guidelines using the Advancing Guideline Development, Reporting and Evaluation in Health Care instrument II (AGREE II) instrument. We will synthesize data for each question using meta-analysis, when possible, and we will prepare Summary of Findings tables according to the GRADE approach.

Ethics and dissemination

No ethics approval is considered necessary. The results of these systematic reviews of clinical practice guidelines will be provided at supplementary data in the developed GPC and in peer-reviewed publications. The project is funded by Minciencias.

INTRODUCTION

Despite the availability of drugs since the 1950s to combat tuberculosis (TB), this disease continues to claim lives around the world (1) (2). The World Health Organization (WHO), through different strategies, has provided guidelines to reduce TB morbidity and mortality (3). The first of the strategies arose in 1991 with the introduction of strictly supervised shortened treatment (Directly Observed Treatment, Short Course - DOTS), this strategy included five elements: political commitment, detection of cases by sputum microscopy in those who consult, treatment Short-term and directly observed antibiotic, regular supply of medications and standardized registration and notification system, to evaluate the evolution of each case and the program in general. Despite the progress made with this strategy, it was not enough. Although by the year 2000 148 countries had adopted the WHO DOTS strategy for TB control and 27% of global TB cases were treated with DOTS, this progress was not enough (3).

Taking these considerations into account for the year 2000, the WHO launched the “Stop TB” strategy, in order to strengthen alliances between different entities and calling for effective political commitment (3). With considerable progress, but without reaching the goals proposed in 2014, the WHO launched the “End TB” strategy, which aims to end the global TB epidemic by reducing the number of deaths by 95 % and the incidence rate by 90% between 2015 and 2035 and ensuring that no family has to face catastrophic expenses due to TB (4). Although Colombia has joined all these strategies, and has updated its plans to fight TB (5) (6), in the case of the care of TB contact children there is no specific clinical practice guide, and treatment for Latent TB is generally found for children and adults in the technical annex to Resolution 227 of 2020 issued by the Ministry of Health and Social Protection (7).

Children with TB differ from adults in their response to the disease, which has important implications for the prevention, diagnosis and treatment of TB. Specifically, in terms of diagnosis, it is made difficult by any of the following problems: signs and symptoms are less specific in younger children than in older children and adults; young children are at risk for other infectious diseases; sputum specimens are difficult to obtain for smear microscopy and / or culture, and specimens tend to be paucibacillary, making detection of mycobacteria difficult (8). Given that the recently updated guidelines lack specific and comprehensive recommendations for the study, treatment and follow-up of TB contact children, it is necessary to complement the guidelines that guide the behaviors to be followed in this specific population group in the country. This may be feasible through the availability of a clinical practice guide for the evaluation, treatment and follow-up of contact children with TB, which is adequate for application in the Colombian context.

This proposal for the development/adaptation of CPG for the care of TB contact children is framed in a research program funded by Minciencias in December 2019, and which has two other projects, the first the design, implementation and evaluation of a comprehensive care strategy for TB contact children, and the second a study of new diagnostic aids for childhood TB.

METHODS

General objective

Conduce a SR of CPGs to assess clinical recommendations for the evaluation, treatment and follow-up of contact children of patients with pulmonary TB.

Protocol and registration

SR of CPGs are knowledge synthesis activities to systematically characterize the nature of clinical guidance on a topic of interest (9). This protocol presents in advance the objectives and methods that will be used for the SR that we will carry out, allowing transparency in the research and restricting the possibility of biased interpretation by the reviewers. Protocol was designed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) (10) and PICAR framework (9). This protocol is registered in the Open Science Framework (OSF), see [Additional files 1](#).

Data sources

We will systematically search in MEDLINE and Embase databases for relevant guidelines using the Ovid interface and we will scan the bibliographies of all eligible guidelines for additional relevant citations. We will conduct also a hand-search in Guideline International Network (g-i-n.net), ECRI Guidelines (guidelines.ecri.org), Australian Clinical Practice Guidelines (clinicalguidelines.gov.au), Brazilian Ministry of Health (saude.gov.br), Canadian Agency for Drugs and Technologies in Health (cadth.ca), CPG Infobase (joulecma.ca/cpg/homepage), Guideline Central (guidelinecentral.com), Asset Map of Canadian Clinical Practice Guideline Developers (sporevidencealliance.ca/key-activities/cpg-asset-map), Chilean Ministry of Health (bibliotecaminsal.cl/guias-clinicas-auge/), Colombian Ministry of Health and Social Protection (http://gpc.minsalud.gov.co/gpc/SitePages/default_gpc.aspx), Institute for Clinical Systems Improvement (icsi.org), Portal Guía Salud (guiasalud.es), Scottish Intercollegiate Guidelines Network (sign.ac.uk), and the National Institute for Health and Care Excellence (nice.org.uk/). The literature search will involve the period from January 1, 2010, to September 30, 2020.

Search strategy

OVID/Medline

See [Additional files 2](#).

Eligibility criteria for considering studies for this review

This review will exclusively include CPGs or guidelines that provided specific advice or recommendations regarding the management of TB in children population to guide medical decision-making process. We will include CPGs directed to children (<18 years old), all clinical indications will be considered. Any intervention and comparators will be considered. We will include guidelines with at least one eligible recommendation reported in all publishing world regions available in English or Spanish published after 2000 in order to capture recent guidelines that are more relevant for current practice. Only lasted version of evidence-based guidelines will be considered regardless of confidence level of recommendations. The eligibility will not depend of other recommendations or considerations.

Clinical practice guideline selection and data extraction

The review team will consist of multidisciplinary experts in the content area and methodology. Teams of two reviewers, independently and in duplicate will screen titles and abstracts and potential eligible full-text reports to determine eligibility. Duplicated guidelines and studies that did not prove eligible will be excluded. Disagreements will be resolved through discussion between reviewers.

Data extraction

With the latest version and every document related to the selected CPGs (supplementary documents, summaries of the recommendations, documents aimed at patient education...) a team of reviewers will extract the interest information (type of NCD, number of authors, year of publication or update, defined time to update, publisher and type of publisher (government, medical society, or university), type of guideline (formulated, adapted, updated, or review), country, funding, aim, target population/healthcare professional, scope (diagnostic, prevention, screening, pharmacological, or non-pharmacological treatment), type of study method (systematic review, consensus, overview), methods of formulating recommendation (consensus, not mentioned, other), and methods of grading evidence) from all eligible guidelines using a standardized, pilot-tested, data collection form accompanied by a detailed instruction manual.

Quality assessment

We will appraise the reporting quality of guidelines, characteristics, recommendations and details of all indicators for validity using the Appraisal of Guidelines Research and Evaluation (AGREE-II) instrument at the AGREE PLUS platform (www.agreetrust.org) (11). This tool comprises 23 items organized into six domains: scope and purpose, stakeholder involvement, rigor of development, clarity of presentation, applicability, and editorial independence. Each item is scored on a 7-point scale, for which 1 indicates a very poor report of the concept evaluated and 7 is attributed when all criteria and considerations are met (12). Two appraisers will perform the quality assessment using the AGREE II instrument. Another reviewer will check the AGREE II results. Differences among scores of each item equal to or greater than 2 will be considered discrepant and the appraisers will decide the final score by consensus. If no consensus is reached, a third appraiser will decide the score (12). The quality score of each CPG will be calculated per domain, as described in the AGREE II User's Manual. The six domains are independent and scores should therefore be calculated as the sum of the individual items in each domain, and then the total should be scaled as a percentage of the maximum possible score for the domain.

Strategy for data synthesis and analysis plan

Following the PRISMA statement, study selection process will be presented in a flow diagram with all records found per database, total number of duplicates, records excluded based on the title and abstract, records excluded following the full-text screening with the rationale described, and total number of CPGs included. Each excluded study and the rationale for the exclusion will be provided as a supplementary document. The AGREE II scores will also be made available as a supplementary document. The summary of the extracted data and AGREE scores will be presented in a descriptive table. Descriptive statistics will be calculated for all domains (mean, median, interquartile range). The data will be tested for normality and proper inferential tests will be conducted to analyze the magnitude and direction of

associations between CPG quality and the extracted variables. Graphs will be plotted as needed. Two-sided p values less than 0.05 will be considered statistically significant. The statistical analysis will be performed in Microsoft Excel and SPSS 25® software.

DISCUSSION

We expect to identify high quality CPGs for children contacts of patients with pulmonary TB using the AGREE II instrument and associated factors of high-quality CPGs, we believe the results of this study will be of great interest to other health institutions, CPG developers, and policy makers worldwide, helping them to select and adapt high-quality CPGs. The research findings will be submitted for publication in high-impact, peer-reviewed scientific journals and will also be disseminated at international conferences. To report the study the PRISMA statement will be followed.

Additional files

1. OSF link:

[Link pendiente](#)

2. OVID/Medline search strategy.

1. exp clinical pathway/
2. exp clinical protocol/
3. exp consensus/
4. exp consensus development conference/
5. exp consensus development conferences as topic/
6. critical pathways/
7. exp guideline/
8. guidelines as topic/
9. exp practice guideline/
10. practice guidelines as topic/
11. health planning guidelines/
12. (guideline or practice guideline or consensus development conference or consensus development conference, NIH).pt.
13. (position statement* or policy statement* or practice parameter* or best practice*).ti,ab,kf,kw.
14. (standards or guideline or guidelines).ti,kf,kw.
15. (standards or guideline or guidelines).ti,kf,kw.
16. ((practice or treatment* or clinical) adj guideline*).ab.
17. (CPG or CPGs).ti.
18. consensus*.ti,kf,kw.
19. consensus*.ab. /freq=2
20. ((critical or clinical or practice) adj2 (path or paths or pathway or pathways or protocol)).ti,ab,kf,kw.

21. recommendat*.ti,kf,kw.
22. (care adj2 (standard or path or paths or pathway or pathways or map or maps or plan or plans)).ti,ab,kf,kw.
23. (algorithm* adj2 (screening or examination or test or tested or testing or assessment* or diagnosis or diagnoses or diagnosed or diagnosing)).ti,ab,kf,kw.
24. (algorithm* adj2 (pharmacotherap* or chemotherap* or chemotreatment* or therap* or treatment* or intervention*)).ti,ab,kf,kw.
25. or/1-24
26. (Infan\$ or newborn\$ or new-born\$ or perinat\$ or neonat\$ or baby or baby\$ or babies or toddler\$ or minors or minors\$ or boy or boys or boyfriend or boyhood or girl\$ or kid or kids or child or child\$ or children\$ or schoolchild\$ or schoolchild).mp. or schoolchild.tw. or schoolchild\$.tw. or adolescen\$.mp. or juvenil\$.mp. or youth\$.mp. or teen\$.mp. or under\$age\$.mp. or pubescen\$.mp. or exp Pediatrics/ or pediatric\$.mp. or paediatric\$.mp. or peadiatric\$.mp. or school.tw. or school\$.tw. or prematur\$.mp. or preterm\$.mp.
27. exp Tuberculosis/ or tuberculosis.mp.
28. latent tuberculosis.mp. or exp Latent Tuberculosis/
29. exp Extensively Drug-Resistant Tuberculosis/
30. exp Tuberculosis, Multidrug-Resistant/
31. exp Mycobacterium tuberculosis/
32. mycobacterium tuberculosis.mp.
33. exp Antitubercular Agents/ or exp Antibiotics, Antitubercular/ or antitubercular.mp.
34. TB.mp.
35. MDR TB.mp.
36. or/38-46
37. 25 and 26 and 47
38. limit 37 to yr="2000 -Current"
39. limit 38 to humans

Prevención, profilaxis

Competing interests

The authors declare that they have no competing interests.

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