Systematic Review and Meta-Analysis on the Efficacy and Safety of Drug Prophylaxis of Contacts of Patients With Hansen's Disease

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INTRODUCTION

Hansen's disease is a condition of great global importance, classified as one of the twenty neglected tropical diseases, and strongly associated with poverty and inequity[1]. The objective was to synthesize the evidence available in the literature in a systematic way on prophylactic measures for contacts of confirmed cases of Hansen's disease.

OBJECTIVE

To synthesize the evidence available in the literature in a systematic way, on prophylactic measures for contacts of confirmed cases of Hansen's disease, with efficacy and safety for preventing the disease compared to standard therapy.

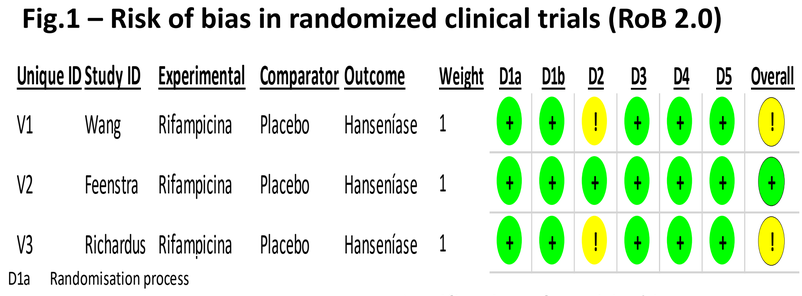
METHOD

A systematic review with meta-analysis was carried out by searching the following electronic databases: Embase, Lilacs, Medline, Cochrane Library, in addition to bibliographic citations of interest. No restrictions were made regarding language or publication period. Inclusion criteria: adults or children of both sexes, contacts of Hansen's disease patients, undergoing chemoprophylaxis. Studies without indexed publications and conference abstracts were excluded. The quality of the studies was assessed by risk of bias using Cochrane tools and certainty in the body of evidence using the GRADE system.

RESULTS

- ✓ Four studies were selected for quantitative synthesis, three randomized clinical trials and one cohort study (total n intervention = 20,659; total n comparator = 20,092).
- ✓ The results of the meta-analysis (four studies) were favorable to rifampicin over a two-year period (RR 0.67 95% CI 0.40-1.12), with the studies risk of bias defined as uncertain (due to an open study and another without blinding) and certainty in the body of evidence assessed as moderate.
- ✓ Rifapentine, evaluated in a single study, presented better results than rifampicin with RR 0.40 (95% CI 0.08 – 2.08) in two years and 0.18 (95% CI 0.04 – 0.80) in four years, and uncertain risk of bias.

Fig.1 – Risk of bias in randomized clinical trials (RoB 2.0)



Justifications for critical items:

Wang et al: domain 2.1 and 2 – open study.

Richardus et al: Domain 2.2 – the study was not blinded.

Fig.2 - Risco de viés do estudo de coorte (ROBINS I)

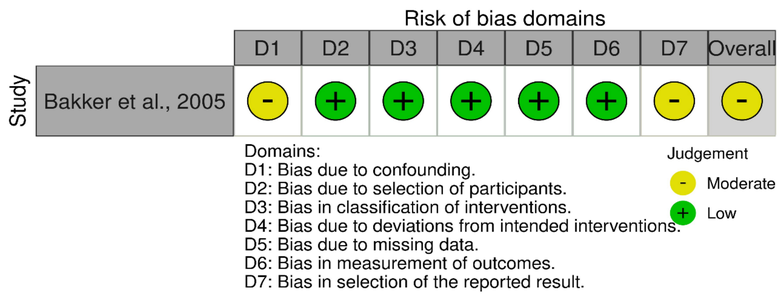


Figure. 3 – Result of the rifampicin vs. placebo meta-analysis

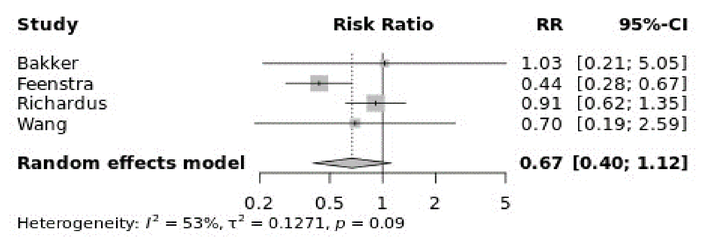
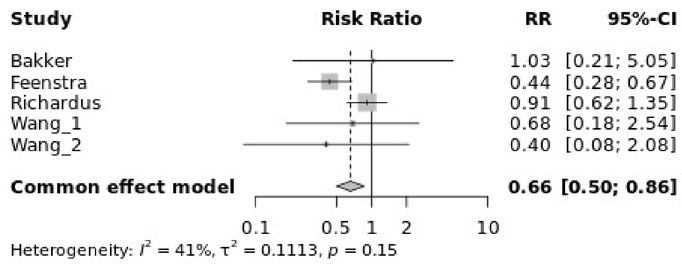


Fig. 4 – Result of chemoprophylaxis (rifampicin or rifapentine) vs. placebo meta-analysis



CONCLUSIONS

Rifampicin administered in a single dose as prophylaxis to contacts of Hansen's disease patients, mainly in endemic areas, demonstrated to be effective and safe with a RR of 67% in two years, and a statistically significant protective effect maintained in six years, with low risk of bias and certainty in evidence classified as moderate. Rifapentine proved to be a promising prophylactic medication, being evaluated in a single study.

REFERENCES

1. Organização Mundial da Saúde (OMS). Estratégia Global de Hanseníase 2012-2030 - Rumo à zero hanseníase. 2021. Disponível em: https://www.who.int/pt/publications/i/item/9789290228509 . Acesso em: 01 de setembro de 2023.

2. Richardus R, Alam K, Kundu K, Chandra Roy J, Zafar T, Chowdhury AS, et al. Effectiveness of single-dose rifampicin after BCG vaccination to prevent leprosy in close contacts of patients with newly diagnosed leprosy: A cluster randomized controlled trial. Int J Infect Dis. 2019 Nov;88:65-72. doi: 10.1016/j.ijid.2019.08.035. Epub 2019 Sep 6. PMID: 31499206.

3. Feenstra SG, Pahan D, Moet FJ, Oskam L, Richardus JH. Patient-related factors predicting the effectiveness of rifampicin chemoprophylaxis in contacts: 6 year follow up of the COLEP cohort in Bangladesh. Lepr Rev. 2012 Sep;83(3):292-304. PMID: 23356030.

4. Wang L, Wang H, Yan L, Yu M, Yang J, Li J, et al. Single-Dose Rifapentine in Household Contacts of Patients with Leprosy. N Engl J Med. 2023 May 18;388(20):1843-1852. doi: 10.1056/NEJMoa2205487. PMID: 37195940.

5. Bakker MI, Hatta M, Kwenang A, Van Benthem BH, Van Beers SM, Klatser PR, et al. Prevention of leprosy using rifampicin as chemoprophylaxis. Am J Trop Med Hyg. 2005 Apr;72(4):443-8. PMID: 15827283.

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