

Interventions to reduce tuberculosis mortality: a systematic review and meta-analysis of trial evidence

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Type selection

Category: Scientific research

Preferred presentation type: Oral abstract presentation

Track selection

Track: B7: TB and comorbidities (HIV, diabetes, malnutrition, mental health, etc.)

2nd Track: D5: Infection prevention and control of TB (and other airborne diseases affecting lung health e.g. SARS CoV-2)

Title

Scientific Research Abstract Text

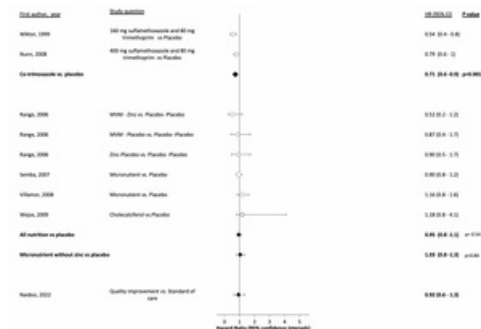
Background:

Tuberculosis is believed to have killed more people than any other infection. We aimed to synthesize the trial evidence assessing interventions aiming to reduce tuberculosis mortality.

Design/Methods:

Our systematic review of the PUBMED database followed the Prisma 2020 checklist and used search terms "(tuberculosis OR TB) AND (death OR mortality OR fatality OR survival)". We selected and characterized the eligible randomized controlled trials that included death as a primary or secondary outcome (including populations with comorbidities such as HIV). We did a meta-analysis of time-to-event data using the software RevMa 5.4 (Review Manager). A fixed-effects model was applied to estimate the pooled relative risks (RR) and hazard ratios (HR), and 95% confidence intervals (CI).

Results:



Of the 2268 identified articles, there were 29 trials, only 7 of which were eligible (Figure). Two studies

included HIV-positive populations with TB and evaluated the effects of co-trimoxazole that caused a 29% decrease in the hazard of death (HR=0.71, 95%CI=0.58-0.86, p<0.001). Four studies all reported no significant effect of micronutrient supplementation on mortality (HR=0.95, 95%CI=0.81-1.1, p=0.5). Subgroup analysis of micronutrient supplementation without zinc also revealed no effect on mortality (HR:1.0, 95%CI=0.78-1.3, p=0.8). A quality improvement study also found no significant effect on mortality (HR=0.92 95%CI=0.63-1.3).

Conclusions: Micronutrient supplementation and a quality improvement intervention had no significant effect whereas in two studies of people with TB-HIV co-infection, co-trimoxazole significantly reduced mortality. Remarkably few trials have focused on reducing tuberculosis mortality.

Summary

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No aspect of TB is more important than preventing mortality, one of the WHO End TB priorities. We therefore assessed trial evidence assessing interventions to reduce TB mortality. We found remarkably few trials, and meta-analysis revealed evidence that co-trimoxazole reduced TB mortality, not micronutrient supplements nor quality improvement did not.

Other Fields

Country of research: Peru

Did you benefit from the [Abstract Mentor Programme \(AMP\)](#)?: No

Do you have ethical clearance for this abstract?: No

If not, please specify why: Not needed because all publicly available data.

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