P1-L14

Interventions to prevent post-tuberculosis sequelae

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Rehabilitation programs significantly improved lung function (Hedges's g = 0.21; 95% CI: 0.03, 0.39) and prevented neurological sequelae (RR=0.10; 95% CI: 0.02, 0.42). Comprehensive interventions and cognitive-behavioural therapy significantly reduced the risk of mental health disorders among TB survivors (Hedges's g = -1.89; 95% CI: -3.77, -0.01).

BACKGROUND

Tuberculosis (TB) remains a global public health challenge, causing substantial mortality and morbidity. While TB treatment has made significant progress, it often leaves survivors with post-TB sequelae, resulting in long-term health issues. Current healthcare systems and guidelines lack comprehensive strategies to address post-TB sequelae, primarily due to insufficient evidence. This systematic review and meta-analysis aimed to identify effective interventions for preventing post-TB sequelae.

METHODS

- A systematic search was conducted across four databases including PubMed, SCOPUS, Web of Science, and Cochrane Central Register of Controlled Trials from inception to September 22, 2023.
- Eligible studies reported interventions designed to prevent post-TB sequelae were included.
- A random effect meta-analysis was conducted where applicable, and heterogeneity between studies was evaluated visually using forest plots and quantitatively using an index of heterogeneity (I2).

RESULTS

- From the 2,525 unique records screened, 25 studies involving 10,592 participants were included.
- Different interventions were evaluated for different outcomes.
- However, only a few interventions were effective in preventing post-TB sequelae.

Table. Post- TB sequela and possible intervention strategies

Post-TB sequelae	Number of studies	Intervention strategies for preventing sequelae
Lung function	9	• Pulmonary rehabilitation program • Adjunctive surgical resection • Comprehensive nursing care
Liver function	6	• Micronutrient supplementation • Mitochondrial nutrients (e.g., acetyl-L-carnitine) • Hepatoprotective agents (e.g., silymarin and silibinin)
Neurologic	5	• Adjunctive therapy (e.g., dexamethasone) • Rehabilitation programs.
Mental health disorder	4	• Comprehensive interventions • Pulmonary rehabilitation programs • Cognitive-behavioural therapy
Hearing	2	• Early medical intervention • Adjuvant steroid therapy
Vision	2	• Adjuvant steroid therapy

- Interventions targeting post-TB liver sequelae did not show significant reductions in sequelae (RR=0.90; 95% CI: 0.52, 1.57).
- Moreover, adjunctive therapies did not show a significant effect in preventing post-TB neurological sequelae (RR= 0.62, 95% CI: 0.31, 1.24).

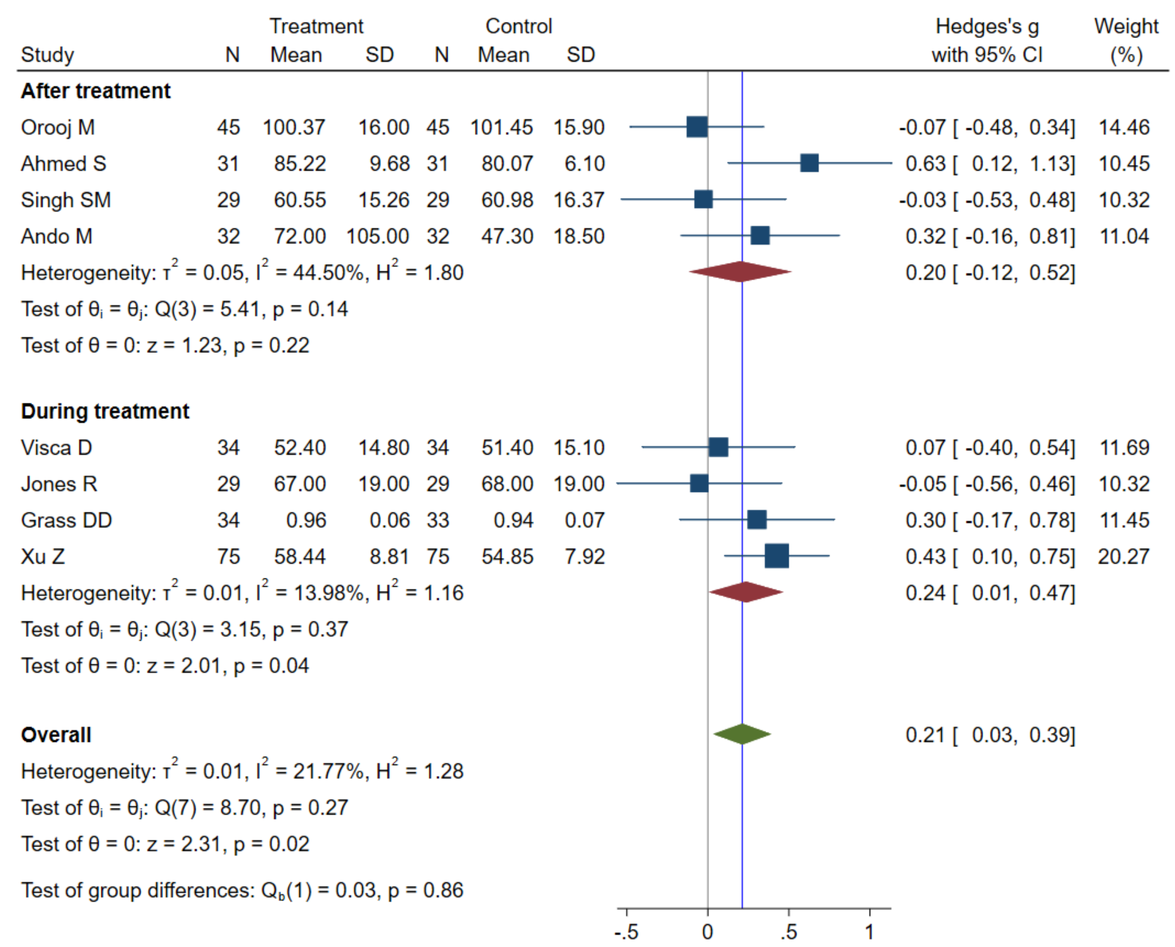

Figure: Effects of interventions during and after treatment on preventing post-TB lung impairment.

- Our study demonstrated that early initiation of rehabilitation programmes may result in better lung function compared to late initiation.

CONCLUSIONS

Rehabilitation programs prevented post-TB lung, neurologic and mental health sequelae, while adjuvant therapies and other interventions require further investigation.

ADDITIONAL KEY INFORMATION

Additional Resources: PMID 38434448

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