



Importance of Supportive Care in Latent Tuberculosis Treatment Success

Xinda Ning*

Department of Infectious Diseases, Fudan University, Shanghai, China

DESCRIPTION

Tuberculosis (TB) continues to be a significant global health concern and China bears one of the highest burdens of the disease. Among strategies to curb TB transmission, preventive treatment for Latent Tuberculosis Infection (LTBI) in individuals who have had close contact with pulmonary TB patients plays a pivotal role. However, adherence to preventive therapy is often inconsistent, presenting challenges in achieving desired public health outcomes. This article observes the findings of a cluster-randomized controlled trial conducted in China, which investigated adherence to LTBI preventive treatment among close contacts of pulmonary TB patients and discusses its implications for improving TB control measures.

Importance of preventive treatment for LTBI

LTBI represents a state where an individual is infected with *Mycobacterium tuberculosis* but does not exhibit active disease symptoms. Without treatment, individuals with LTBI face an increased risk of developing active TB, particularly those in close contact with infectious patients. Preventive treatment, using medications such as isoniazid or rifampin, has been shown to significantly reduce the progression of LTBI to active TB. Despite its efficacy, adherence to such preventive regimens remains a challenge due to factors including medication side effects, lack of awareness and systemic healthcare barriers.

China's national TB control program has prioritized the management of LTBI to reduce TB incidence. However, real-world adherence to preventive treatment among close contacts has been insufficiently studied, necessitating robust research to identify effective interventions.

Key findings

Adherence rates: The intervention group demonstrated significantly higher adherence rates to preventive treatment compared to the control group. Over 80% of participants in the intervention group completed the prescribed treatment course, compared to approximately 50% in the control group. This

suggests that supportive interventions play a critical role in improving adherence.

Impact of counseling and reminders: Participants who received personalized counseling reported greater understanding of LTBI and its potential risks, which positively influenced their motivation to adhere to treatment. Reminder systems also helped mitigate forgetfulness, a common barrier to medication adherence.

Barriers to adherence: Among those who did not complete treatment, key barriers included medication side effects, fear of long-term health impacts and logistical challenges such as traveling to healthcare facilities. These barriers were more pronounced in the control group, underscoring the importance of targeted interventions to address these challenges.

Adverse events: The study monitored adverse events associated with preventive treatment. While side effects such as mild gastrointestinal discomfort and fatigue were reported, severe adverse events were rare. Importantly, counseling sessions helped reassure participants about the safety of the treatment, reducing dropout rates.

Cost-effectiveness: The intervention group's improved adherence translated into a cost-effective approach to preventing active TB cases. By reducing the incidence of active TB, the intervention has the potential to lower healthcare expenditures associated with TB treatment and hospitalization.

Implications for policy and practice

The findings of this trial have significant implications for improving adherence to LTBI preventive treatment in high-burden settings like China. Several actionable insights can be drawn to inform public health strategies:

Community-based support systems: The success of the intervention highlights the value of community-based approaches to improving adherence. Regular engagement with healthcare providers, combined with technology-driven

Correspondence to: Xinda Ning, Department of Infectious Diseases, Fudan University, Shanghai, China, E-mail: ningxinda@chinafu.cn

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reminders, can bridge gaps in adherence and ensure continuity of care.

Patient-centered education: Structured counseling tailored to the cultural and educational background of patients is essential. Simplified communication about the risks of LTBI and the benefits of treatment can empower individuals to adhere to preventive regimens.

Integration into routine healthcare services: Embedding preventive treatment programs into existing community health frameworks can enhance access and reduce logistical barriers. This is particularly relevant for rural or underserved populations, where healthcare infrastructure may be limited.

Monitoring and feedback mechanisms: Regular monitoring of adherence and patient feedback should be incorporated into TB

control programs. This enables timely identification of challenges and allows for adjustments to interventions as needed.

CONCLUSION

Adherence to preventive treatment for LTBI is critical for reducing TB transmission, especially in high-burden countries like China. The findings of this trial emphasize the effectiveness of supportive interventions, such as personalized counseling and reminder systems, in improving adherence rates. Addressing barriers like medication side effects and logistical challenges through community-based support, patient education, and integration into routine healthcare services can enhance outcomes. These strategies not only reduce the progression of LTBI to active TB but also contribute to cost-effective public health solutions, highlighting their importance in TB control programs.