The Power of TB Preventive Treatment (TPT) in Conquering Sleeping Monster

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SUMMARY

TB Preventive Treatment (TPT) for Latent Tuberculosis Infection (LTBI) aims to reduce risk of TB reactivation in individual who have been exposed to the bacteria but do not have active disease. This study aimed to evaluate the effectiveness of TPT in TB reactivation prevention among close contact smear positive TB. Effectiveness of treatment was measure by evaluating treatment outcome and assessing the reduction in the risk of developing active TB in individuals with LTBI. Therefore, TPT significantly reduces the risk of developing active TB in close contact smear positive TB with LTBI. It is estimated can reduce the risk by approximately 85%.

KEYWORDS

Close Contact Smear-Positive TB, Latent TB Infection, TB Preventive Treatment, Active TB, TB Reactivation

INTRODUCTION

LTBI serves as a reservoir for future TB cases and carries the risk of progressing to active TB disease, which can cause significant morbidity and mortality. Close contact smear-positive TB LTBI are at a higher risk of developing active TB disease. By evaluating the effectiveness of TPT helps ensure that these high-risk group receive appropriate and timely intervention to protect their health. Besides that, can assess the impact on reducing the overall TB burden. Therefore, this study was aimed to evaluate the effectiveness of TPT in preventing TB reactivation among close contact smear positive TB with LTBI.

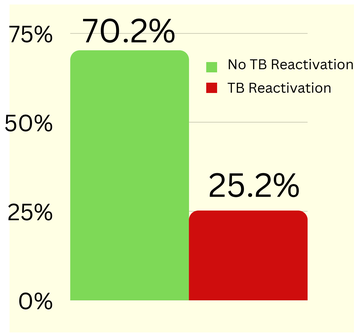
MATERIALS AND METHODS

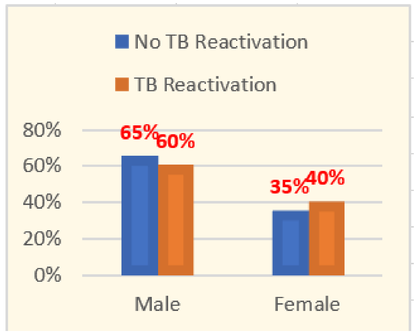
Study design	Retrospective Cohort
Sample size (adjusted effect size)	Determine based on proportion of TB reactivation among close contact TB with adjusted for potential attrition TPT
Sample population	Registered LTBI cohort 2019 & 2020
Sample frame	National Tuberculosis Information System
Definition for efficacy TPT for TB reactivation prevention	proportion of LTBI diagnosed with active TB during the 2 years follow up period
Analysis	descriptive analysis and regression.

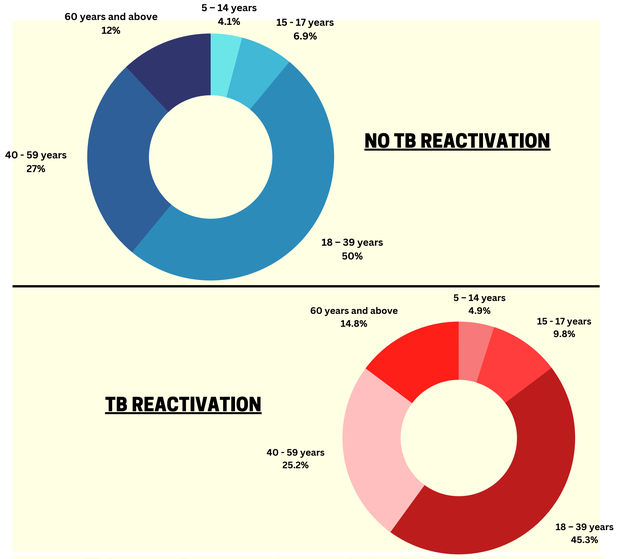
RESULTS

There is a significant relationship between the treated close contact smear-positive TB with LTBI with TB reactivation outcome variable. The treated LTBI are 85% more likely prevented from TB reactivation compared with the non-treated LTBI. Therefore, TPT lower the risk of TB reactivation among the completed treatment of close contact smear-positive TB with LTBI. TPT has demonstrated significant effectiveness in preventing TB reactivation among individuals with LTBI.

Descriptive results of Close Contact Smear Positive TB with LTBI on TPT Enrollment and TB Reactivation Outcome







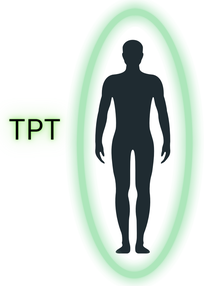
TB Preventive Treatment effectiveness Against TB Reactivation in Close Contact Smear-Positive TB with LTBI

	No Active TB	Active TB	Total
Treated LTBI	10229	77	10306
Non-Treated LTBI	4345	228	4573

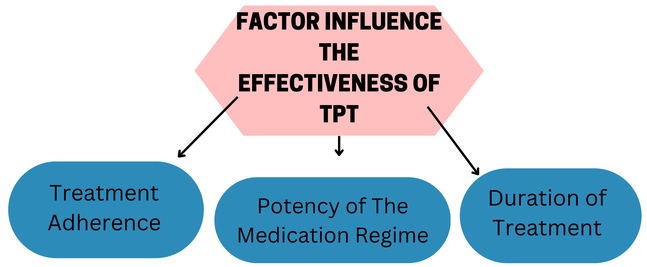
STEP 1 : RISK OF TB REINFECTION IN TREATED LTBI : 77 / 10306 = 0.001
STEP 2 : RISK OF TB REINFECTION IN NON TREATED LTBI : 228 / 4547 = 0.05
STEP 3 : DIVIDING THE RISK GIVES : 0.0075 / 0.05 = 0.02
STEP 4 : TB PREVENTIVE EFFECTIVENESS AGAINST INFECTION IS (1 – 0.15) * 100 = **85%**

TB PREVENTIVE TREATMENT LOWER THE RISK OF TB REACTIVATION ABOUT 85% AMONG TREATED CLOSE CONTACT SMEAR-POSITIVE TB WITH LTBI COMPARED WITH NON-TREATED LTBI.

DISCUSSION



- Strengthening immune system response
- Preventing TB reactivation
- Eliminate or suppress dormant Mycobacterium TB
- Treat early stage of TB disease
- Reducing infectiousness & interrupting transmission



CONCLUSION

TB Preventive Treatment is highly effective in preventing TB reactivation among the close contact smear-positive TB with LTBI. High treatment completion rates and adherence important to maximize the preventive effects of TPT. It serve as a vital strategy for TB control and elimination efforts by reducing the burden of active TB disease, interrupting transmission and protecting the health of individuals at risk. Implementing and scaling up TPT programs can have a significant impact on reducing the global burden of TB and achieve the EndTB strategy.

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