



Risk of recurrence of active TB is high for people with HIV

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People living with HIV who have a history of active tuberculosis (TB) have a significant risk of recurrence of the disease, investigators report in the online edition of *Clinical Infectious Diseases*.

The risk of developing active TB was three times higher for individuals with previous active TB compared with people with no history of active disease.

‘We found that the hazard of future tuberculosis was increased 3-fold among those with a history of prior active tuberculosis,’ write the authors. ‘This enhanced hazard of future tuberculosis among subjects with prior tuberculosis was robust and consistent across multivariable analyses adjusted for several key clinical factors.’

The authors believe their findings have important and immediate clinical implications and suggest that TB prevention measures for people with HIV should be targeted at those with a previous history of active disease.

TB is the single most important cause of serious illness and death in people living with HIV worldwide. It has long been known that HIV-negative people with a prior history of active TB have a high risk of experiencing recurrence of active disease. However, it was unclear if this is also the case in people with HIV.

The DarDard TB vaccine trial provided an opportunity to explore this question. Conducted in Tanzania, the seven-year placebo-controlled trial examined the efficacy of a TB booster vaccine in adults living with HIV.

A total of 979 people were recruited to the trial and 8% had a history of previous active TB. All had a CD4 cell count above 200 cells/mm³ and a BCG vaccine scar. People with a reactive tuberculin skin test were provided with a course of isoniazid preventive therapy lasting six months.

Study participants were checked at regular intervals during follow-up for active TB disease. All cases were evaluated by a panel of three doctors who designated participants as having either definite or probable TB.

Baseline characteristics did not differ significantly between people with and without a history of active TB.

During follow-up, 9% of participants were diagnosed with definite or probable TB, of whom 5% were classified as definite TB

(two positive sputum cultures or smears, or one positive sputum culture of >10 CFU or one positive blood or other non-sputum culture).

Participants who developed active TB had lower CD4 cell counts ($p<0.001$), higher viral load ($p=0.001$), were less likely to be taking antiretroviral therapy (0% v. 4%, $p<0.001$), and were more likely to have a history of active TB ($p<0.001$) than individuals who did not develop TB.

Definite TB was diagnosed in 14% of people with previous active TB (4.57 cases per 100 person years), compared with 5% of people without prior active TB (1.43 cases per 100 person years). Definite or probable TB was diagnosed in 21% of those with a previous history of active disease (7.42 cases per 100 person years). This compared to 8% of people with no history of active TB (2.14 cases per 100 person years).

The investigators adjusted their findings to take into account factors associated with an increased risk of TB, such as CD4 cell count, age and treatment with isoniazid preventive therapy. People with a previous history of active TB had a more than three-fold increase in their risk of being diagnosed with definite active TB (HR=3.69; 95% CI 1.79 - 7.63, $p<0.001$). The risk of definite or probable disease was also increased significantly (HR=2.78; 95% CI 1.58 - 4.87, $p<0.001$).

‘Among immunocompromised patients living where tuberculosis is highly endemic, failure to contain tuberculosis infection once is associated with substantial risk of future active tuberculosis disease,’ comment the investigators. ‘We recommend that both isoniazid preventative therapy and ART be provided to HIV-infected adults on the basis of a clinical history of active tuberculosis.’

Lahey T, et al. Recurrent tuberculosis risk among HIV-infected adults in Tanzania with prior active tuberculosis. *Clin Infect Dis*, online edition. [<http://dx.doi.org/10.1093/cid/cis798>, 2012]

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