

Latent tuberculosis infection and average lifespan; The effects of having a latent tuberculosis infection

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Background: 25% of the world population are estimated to have a latent tuberculosis infection thereby representing a large reservoir from which the disease can reactivate with severe illness and transmission as the fatal consequences. However, little is known about the lifetime consequences of tuberculosis infection on general health besides the risk of reactivation.

Methods: We conducted a retrospective follow-up study on a cohort of individuals tested with Purified Protein Derived (PPD) skin test in 1999-2000 in the capital of Guinea Bissau. The groups of PPD-positive and -negative were sought out to determine who have died during the follow-up period and to investigate subjects still alive in terms of reactivation/active TB disease events, risk factors for TB, immunological reactivity towards *Mycobacterium tuberculosis* (Mtb) and socioeconomic factors.

Results: A total of 375 individuals were identified and included out of the original sample size of 1271. The average lifespan of the PPD-positive group was 51 years and slightly lower in the PPD-negative group with 48 years ($p=0.380$). When performing Cox-regression analysis, PPD-positivity showed a hazard ratio for death of 1.02 ($P=0.914$). However, the original groups consisting of either households to a TB-case or households to a matched control were stronger predictors of death. Being a case household showed a hazard ratio for death of 1.30 ($P=0.141$).

Conclusion: We found no difference in the average lifespan or survival based on PPD-status, but the trend of case households being associated with negative effects on survival may suggest that residual confounding such as immunosuppression at baseline is blurring potential associations.