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Opinion Article

Pulmonary Tuberculosis Among Patients Affected with HIV/AIDS

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DESCRIPTION

Tuberculosis (TB) is the most common infection and the leading cause of death among HIV patients in developing countries, accounting for approximately 40% of all HIV manifestations. Tuberculosis of any organ affects approximately 25% to 65% of HIV/AIDS patients, and it accounts for approximately 13% of all HIV-related deaths worldwide. While tuberculosis prevalence has declined by more than 20% globally, rates in Africa have tripled since 1990 in countries with high HIV prevalence and are still rising at a rate of 3%-4% per year across the continent. Between 1998 and 1999, there was a 20% increase in tuberculosis cases in African countries severely affected by HIV/AIDS. Appropriate tuberculosis diagnosis and treatment can help to reduce the burden of tuberculosis, provided infectious cases are detected early and treated successfully. However, achieving the goal of reducing the tuberculosis burden is difficult due to a number of challenges in diagnosing tuberculosis in HIV-infected patients due to an unusual increase in smear negative acid fast (AFB negative) pulmonary tuberculosis disease and atypical findings on chest radiography. It is to be noted that because HIV weakens the immune system, people with HIV are becoming more susceptible to tuberculosis. HIV/AIDS contributes to tuberculosis epidemics in a variety of ways, including promoting active tuberculosis progression and increasing the risk of reactivation of latent tuberculosis infection. In addition, once exposed to tubercle *bacilli*, the risk of tuberculosis infection increases linearly.

HIV/TB co-infection and immunological status

A $CD4^+$ T cell count of 349 cells/mm^3 was found in two-thirds (3/20 (65%) of HIV tuberculosis patients. HIV positive tuberculosis negative patients had higher $CD4^+$ T cell counts than HIV tuberculosis co-infected patients. The difference in mean $CD4^+$ T cells between people living with HIV/AIDS who have tuberculosis and those who do not have tuberculosis is not statistically significant.

Testing for drug susceptibility

For the 20 culture positive isolates, drug susceptibility testing was performed. Rifampicin, isoniazid, streptomycin, and ethambutol are all toxic to nineteen (95%) of the patients. One isolate (5%), representing a history of previous tuberculosis treatment in which isoniazid was one of the drugs used, was resistant to isoniazid.

Tuberculosis and antiretroviral therapy (ARV)

Ten (6.7%) HIV-TB co-infected patients were on ARV, while 140 (93.3%) HIV-TB negative patients were on ARV. Thirty-three (33%) of those on ARV had a history of previous tuberculosis in the previous 5 years, while 117 (78.0%) had no history of previous tuberculosis. The mean duration of ARV use in HIV tuberculosis co-infected patients can be calculated among HIV infected tuberculosis negative patients.

CONCLUSION

The study finally denotes that a high prevalence of tuberculosis disease among HIV patients can be controlled with early diagnosis. In HIV/tuberculosis co-infected patients, a chest radiograph is suggested for tuberculosis and clinical symptoms of fever and cough. Tuberculosis can manifest itself at any stage of $CD4^+$ T cell depletion. Patients with low immunity due to HIV are more likely to contract tuberculosis in a tuberculosis-endemic area.

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