Editorial

HIV and Tuberculosis --A "Cursed Duo" in the HAART Era

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HIV and Tuberculosis (TB) a "cursed duo", is a major public health problem. Globally, nearly 2 billion people are infected with Mycobacterium tuberculosis and about 33.2 million are estimated to be living with HIV infection.[1] An estimated 1.37 million new cases of HIV-TB occurred in 2007, representing 15% of the total global burden of TB. In addition, an estimated 456 000 HIV-TB deaths accounted for 23% of global HIV/AIDS mortality.[2] India accounts for one-fifth of the world's new TB cases. Every year 1.8 million people of the country develop TB and 3,70,000 people die of it.[3] In India, the estimated prevalence of HIV in the adult population is 0.36% and 2.5 million people are living with HIV/AIDS.[4] At present, about 5% of new TB cases in India occur in people with HIV co-infection.[5]

TB is one of the most virulent opportunistic infections and it appears early in the course of the HIV infection than other opportunistic infections. As it is one of the first opportunistic infection to appear in HIV–infected people, TB may be one of the earlier signs of HIV infection. HIV specifically eliminates macrophages and CD_4 cells that provide immunity against TB thereby fuels the spread of TB. People with latent TB are increasingly becoming infected with HIV and many more develop active TB because HIV weakens their immune system. People who are co-infected with both HIV and latent TB have 800 times greater risk for developing active TB disease and becoming infectious compared to people not infected with HIV.[6] TB in HIV patients has different clinical presentation, hence it can be a diagnostic challenge. TB progresses faster in HIV-infected people. In early stages the presentations of TB in TB-HIV co-infection is the same as HIV-negative but in late stages extra-pulmonary and disseminated forms are more common. The treatment outcome is different and chances of relapse and resistance are also high. TB in HIV is more likely to be fatal if undiagnosed or left untreated. It is the only major AIDS-related opportunistic infection that poses a risk to HIV–negative people. Although treatment of TB can improve the quality of life in HIV positive people and prolong their life, it cannot prevent the progression to AIDS. Hence, antiretroviral therapy (ART) is also vitally important. The Government of India launched the free ART program in April 2004, making ART widely available to the Indian population suffering from HIV infection.

TB in HIV can also be a part of immune restoration inflammatory syndrome (IRIS). It is defined as transient worsening or appearance of new symptoms, signs or radiographic manifestations after initiation of highly active antiretroviral therapy (HAART). The incidence of IRIS in TB alone was 2%, with HIV co-infection was 7% and in those started on HAART was 36% as reported in a study by Narita et al.[7] The most common symptom of TB presenting as IRIS is fever along with worsening infiltrates on chest x-ray. Other manifestations include enlargement of the affected lymph nodes and liquefaction or appearance of new lymph nodes, pleural and pericardial effusion, ascites, central nervous system (CNS) lesions and visceral lesions.[8] Risk factors for TB presenting as IRIS include early initiation of antiretroviral therapy (ART) within 2 months of starting antitubercular therapy (ATT), low CD_4, presence of extrapulmonary TB especially of the CNS, disseminated TB and high viral load.[9,10]

The other problem associated with TB treatment is development of multi drug resistant tuberculosis (MDR-TB) and extensively drug resistant tuberculosis (XDR-TB) which also is a problem seen in the treatment of TB in HIV. MDR-TB and XDR-TB can occur due to poor compliance to ATT, increased incidence of side-effects and malabsorption of drugs due to associated diarrhoea. ART containing protease inhibitors (PI) or non-nucleoside reverse transcriptase inhibitors (NNRTI) should not be used along with Rifampicin. The API Consensus Expert Guidelines for management of HIV-TB co-infection recommend postponing the initiation of ART. If it is absolutely necessary to initiate ART while the patient is on ATT, either usage of PI-free or NNRTI-free regimen; or using Efavirenz-based regimen or using non-rifampicin regimen (rifampicin can be substituted with rifabutin).[11] As far as possible, MDR TB and XDR-TB should be managed by specialized units having a facility for quality controlled drug sensitivity testing and experienced in handling such cases.[11] When patients with HIV infection are treated at the same facility as those with tuberculosis, effective infection-control measures are essential, given the high risk of nosocomial transmission of tuberculosis. When caring for HIV-TB co-infected patients, physicians must consider many clinical issues, like the prevention of disease; the timing of treatment; the choice of medications; drug interactions, side- effects, and resistance; and potential reinfection with other strains of mycobacteria. Antiretroviral therapy is essential for reducing the number of deaths from tuberculosis that are related to HIV infection.[12]

As the National AIDS Control Program expands, it may be able to learn from the revised national tuberculosis-control program (RNTCP) which provides care, diagnosis and treatment on a large scale.[13,14] Treatment of HIV is more complex and expensive than tuberculosis treatment because it has to be continued indefinitely.

Several randomized controlled trials in HIV-infected persons have shown that the incidence of TB can be reduced by 40-60% by preventive therapy.[15,16] The standard regimen of preventive therapy is isoniazid (INH) for 12 months. It is a standard recommendation in the United States of America (USA) and the United Kingdom (UK) to give preventive therapy to all purified protein derivative (PPD)-positive (> 5mm) HIV positive persons, after ruling out active TB.[17] This preventive therapy is also recommended by WHO. Presently, in India there is no national policy regarding TB preventive therapy for HIV+ve persons. At present, clinical trials at TB Research Centre, Chennai are being

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conducted evaluating the combination of INH and Ethambutol for 6 months versis a 3 year regimen of INH alone, results of which are awaited.[17]

In the present issue of this journal in the study by Agarwal et al, 30% patients were diagnosed with active concurrent TB (HIV-TB) receiving HAART. This study shows an improved outcome of HIV-TB if diagnosed early and treated appropriately. The drawback of this study is that all patients were diagnosed to have HIV at the time of diagnosis of TB. Hence, they had lost an opportunity to receive ART earlier during the asymptomatic phase (if it was needed) which could have prevented advanced immunosuppression and thereby reducing the risk of developing TB.

A recent study by Tabarsi et al from Tehran has also shown improved survival with earlier initiation of ART in HIV-TB co-infected patients with CD4 counts below 100/mm^3. [18]

In India, the care of the patients suffering from TB and HIV are increasingly being coordinated, but the full benefits have yet to be realized. The control of both TB and HIV is likely to be more successful if the national programs for TB and HIV collaborate whenever possible and they are closely integrated with the rest of medical care [19]. At the national level, there are several efforts being attempted to achieve coordination between the designated microscopy centre (DMC) of the RNTCP and the integrated counselling and testing centres (ICTC) of the HIV/AIDS control program. The objective is to promote early diagnosis and treatment of TB in HIV infected individuals and vice versa. Recently, the National AIDS Control Organization has decided to routinely test the HIV status in all the newly diagnosed TB patients in the high-prevalence states. TB clinics will form an important entry point for HIV diagnosis, care and support. Coordination, co-operation and a constant dialogue between these two government health programs is necessary in order to improve the outcome of HIV-infected TB patients and also to control the burden of TB in India.[17]

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Book Review

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Gastritis has undergone metamorphosis in the last four decades. Master clinician and scientist HG Desai has elegantly presented in a lucid format a reader-friendly compendium on Gastritis. The book has 10 chapters on each facet of Gastritis. He has spent a lifetime in reclassifying Gastritis. The current classification ignores the immune response of the host. He very nicely puts forth his hypothesis and describes the host-immune and Helicobacter gastritis in various chapters. The non-helicobacter and genetic pernicious anemia also gets a special mention. Unlike autoimmune hepatitis or autoimmune thryodiitis gastritis still eludes the immune component though paritel cell antibodies, H. pylori antibodies as well as intrinsic factor antibodies exist. The therapy and future of gastritis is also well discussed.It is a must for students, clincians and scientists of gastrointestinal medicine.

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