

HIV and Tuberculosis: a deadly duo

While in most part of the world the fight against tuberculosis is improving with success, in Africa, the disease is reaching alarming proportions and we record an increasing number of people infected with TB as well as an increasing number of deaths associated to HIV. Nowadays, HIV and tuberculosis (TB) are the deadliest infectious diseases and are called the “deadly duo”.

Tuberculosis

Tuberculosis is a common and often deadly infectious disease spread through the air, when people who have the disease cough, sneeze, or spit. Tuberculosis usually attacks the lungs (as pulmonary TB) however; it can also affect almost any part of the body. It is an increasing challenge for many developing countries.

One third of the world’s population is infected with *Mycobacterium tuberculosis* but very few of these people actually develop tuberculosis disease. Tuberculosis infection occurs when a person breathes in the tubercle bacilli and it lives dormant in the lung. People with tuberculosis infection do not usually feel ill as a result of their infection.

When TB infection becomes active, usually as a result of something that weakens the body’s immune system, such as malnutrition, HIV or excessive alcohol consumption, the symptoms can be a cough that lasts for more than two or three weeks, weight loss, loss of appetite, fever, night sweats and coughing up blood. *Mycobacterium tuberculosis* is also known as tubercle bacilli (because they cause lesions called tubercles).

Tuberculosis and HIV/AIDS

Since 1986, the outbreak of tuberculosis at a global level has expanded at alarming rates. This phenomenon was first seen in the United States (3% in 1986, 6% in 1990) and the role of HIV seems to be one cause of this change. Indeed, HIV seems to be the biggest factor to contract the active form of TB.

Nearly 40 million people are living with HIV infection worldwide and as many as one-third are co-infected with TB, meaning that they carry both. People with HIV are up to 50 times more likely to develop TB in a given year than HIV-negative people. TB is also the most common opportunist infection among people infected with HIV. About 200,000 people living with HIV/AIDS die from TB every year. A majority of TB cases in people living with HIV/AIDS occur in South East Asia, but sub-Saharan Africa remains the most affected region, where up to 80 percent of TB patients may be co-infected with HIV. This co-infection is leading to a mortality rate five times higher than the rate of TB on its own. Moreover, TB and HIV are both family diseases, and any case of HIV or TB detected is likely to uncover further cases within the same household.

An example: In Central African Republic, the prevalence of the TB infection was estimated around 32% in 1988 and 62% in 1994 and was around 82% in 1998 of the patients suffering from HIV hospitalised in Bangui.

Both diseases mutually accelerate their progression:

- HIV weakens the immune system and so people are more susceptible to catching TB if they are exposed. People with HIV/AIDS are up to 50 times more likely to develop the active form of TB in a given year than HIV-negative people.
- TB bacteria accelerate the progression of HIV to AIDS. TB stimulates the immune system, facilitating the reproduction of HIV thus, accelerating the evolution of HIV.

The most common form of TB for people infected with HIV is the pulmonary TB, in 55 to 60% of the cases, however in many cases it can be an extra-pulmonary form of TB (which can be associated with pulmonary TB).

Diagnostic

TB is difficult to diagnose in people living with HIV because the commonly used diagnostic tools are less able to detect the TB bacteria. People living with HIV are more likely to develop TB both inside and outside of the lungs, also making the diagnosis more difficult, and the disease more deadly. The rate of detection of contagious TB is low, around 45%, far from the objective of 70% detection as fixed by the WHO in 2005. Extra-pulmonary diagnostic is relatively easy if a take is made (urine, peripheral ganglion, pleura...), but it is difficult when its localisation is deep.

TB and Women

Worldwide, women bear a disproportionate burden of poverty, ill-health, malnutrition and disease. TB causes more deaths among women than all causes of maternal mortality combined, and more than 900 million women are infected with TB worldwide. In 2006, 1 million women died and 2.5 million became sick from the disease, the majority of which were women between the ages of 15 and 44.

Conclusion

HIV/TB co-infection remains a serious medical and scientific challenge, among which, the difficulty to diagnose, the infection control and the management of the co-toxicity of medical treatments. Indeed, the majority of efficient treatments are used separately to treat whether HIV or TB.

Policies and guidelines to deal with HIV-related TB have been developed. Countries and organisations working in both diseases have been mobilized to work on both diseases.

For many years efforts to tackle TB and HIV have been largely separate, despite the overlapping epidemiology. Improved collaboration between TB and HIV programmes will lead to more effective control of TB among people who are infected with HIV and to significant public health gains.

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