

TUBERCULOSIS



Tuberculosis is not a new disease. It was thought by many that it could be eradicated, but the disease has re-emerged and is today the world's biggest bacterial cause of death amongst the adult population. Each year nearly nine million people develop tuberculosis, and around two million die from it. Yet TB is a curable disease, for the most part, when diagnosed and treated correctly. But the lack of adapted reliable diagnostics and access to treatment is a major problem in the developing world where nearly 99% of TB deaths occur.

Photo: © Tom Craig



The HIV/AIDS pandemic has created a new challenge due to the deadly duo of TB and HIV. People with HIV are more susceptible to developing TB disease because with a damaged immune system they are unable to fight the infection. TB is the number one killer of people diagnosed with HIV/AIDS.

In recent years, drug-resistant strains of tuberculosis have appeared because of incorrect prescription of drugs, inter-

rupted access, and/or incorrect adherence to treatment. Drug-resistant TB poses a new threat in the developed and developing world today.

Transmission and symptoms

TB is caused by a bacterium called *Mycobacterium tuberculosis*. Usually, the bacterium attacks the lungs, but it can infect almost any part of the body. TB is an airborne disease, like the common cold, and is transmitted when a

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person breathes in the bacteria from an infected person.

Infection with TB is common. One third of the world's population are latently infected. However, with a healthy immune system the body is able to keep the bacteria in check, and most people who are infected do not go on to become ill with the disease and are not infectious to others. If people do become ill and the latent infection becomes active, this is called TB disease. When TB occurs in the lungs it is called pulmonary TB. In any other part of the body, (for example, lymph nodes or spine) it is called extra-pulmonary TB. Only the form affecting the lungs is infectious.

The onset of symptoms is slow and insidious, they can manifest in a variety of ways and can be easily confused with symptoms of other diseases, particularly in the early stages.

When a person starts to develop TB disease they may feel weak and tired. There may be

weight loss, and a loss of appetite, fever and heavy night sweats. Pulmonary TB is characterised by a cough, shortness of breath, chest pain and sometimes bloodstained sputum (haemoptysis). Extra-pulmonary TB may be characterised by swelling of the particular site infected (lymph node), mobility impairment (spine), or severe headache and neurological dysfunction (TB meningitis) etc. Extra-pulmonary TB is not accompanied by a cough because it doesn't occur in the lungs. It is equally important that both the infectious and non-infectious forms of TB are diagnosed and treated as both can be fatal.

Diagnosis

Case detection is one of the biggest obstacles to TB care today and the tools for diagnosing TB are very old. The recommended diagnostic tool for TB in developing countries is sputum microscopy. Discovered by Dr Robert Koch in 1882, this technique is still in use today.

There are several problems with this technique.

Firstly, it detects TB only in a maximum of 70% of people suffering from pulmonary TB. Secondly, children are disadvantaged because it is difficult to get a good sputum sample from them. Thirdly, people with HIV who are more susceptible to TB disease have fewer bacilli in their sputum and the microscope is more often unable to identify the bacteria. They are more likely to suffer from extra-pulmonary TB. If someone doesn't have TB in the lungs but elsewhere in the body, they are not going to have TB bacilli in their sputum. This leads to especially children, people who have HIV, and/or those with extra-pulmonary tuberculosis falling through the diagnostic net, and often remaining untreated.

Another way to identify the bacilli is by growing it in a special culture medium, but this demands more sophisticated material and techniques. Very few laboratories in developing countries are capable of doing this. The bacteria that causes TB replicates very slowly, and results of classical culture tests take up to four to eight weeks.

The tuberculin skin test (e.g. the Mantoux test) can be used to identify people who are infected with TB bacilli. However people who have been vaccinated against TB usually also produce a positive result, and it is impossible to distinguish between an infection or a previous vaccination.

Chest X-rays can be used to assist the diagnosis of TB. However the lesions on the lungs are often difficult to interpret, especially if a person's immune system isn't working effectively, because of HIV for example. Chest X-rays can be misleading and inconclusive because the X-ray picture is atypical.

Diagnosis of extra-pulmonary TB is extremely difficult because diagnostic tools are too sophisticated and rarely available in resource-poor settings.

Treatment

TB is treated with a combination of drugs. The first-line medicines are isoniazid, rifampicin, ethambutol and pyrazinamide.

TB treatment requires strict adherence and lasts for at least six months. If a person does not adhere to treatment there is a possibility that the TB bacilli may become resistant to the drugs used and that the TB disease can not be cured anymore with the first-line drug regimen. It is therefore essential that TB treatment is not interrupted.

Drug-resistant TB is a growing problem. Treating drug-resistant TB is much more difficult, takes 18 to 24 months if the patient responds to the sec-

ond-line treatment regimen and is around 20 times more expensive than treating fully drug sensitive TB. The available second-line drugs are not only much more expensive but they have more, often severe side-effects.

MSF and TB

MSF has been confronted with tuberculosis since its first day of operation more than 30 years ago. In the past few years, MSF has expanded TB treatment to include patients in a growing number of projects, and the focus has shifted from disease control to patient care.

In 2004, MSF treated patients for TB in nearly 50 projects in 24 countries: Angola, Afghanistan(*), Abkhazia/Georgia, Burundi, Cambodia, Caucasus/Chechnya, Chad, China, Congo, Côte d'Ivoire, DRC, Ethiopia, Guinea, Kenya, Liberia, Malawi, Myanmar, Nepal, Nigeria, Sudan, Somalia, Thailand, Uganda and Uzbekistan. Approximately 16,500 new TB patients were admitted in programmes supported by MSF in 2004, and many more were diagnosed by MSF medical teams and referred to local TB services, some of them supported by MSF.

The settings in which MSF provides TB care vary widely. They include MSF staff treating TB patients in areas of chronic conflict, including work in Abkhazia and in South Sudan, and refugee camps in Chad and in Thailand.

An increasing number of patients receive TB care from MSF in primary health care settings, for example in South Sudan, Congo, DRC and Angola.

Two MSF projects offer treatment in prison settings: in Abkhazia and Abidjan/Côte d'Ivoire.

MSF is treating multidrug-resistant tuberculosis in Abkhazia, Côte d'Ivoire, Thailand and Uzbekistan.

Steps towards improving TB care recently taken in MSF projects include:

- TB/HIV co-infection: as TB is a major threat to people with HIV, MSF provides TB treatment in its AIDS programmes in several countries, including China, Cambodia, Kenya, Malawi, South Africa and Zambia, and is working on integrating treatment of the two diseases in some countries in order to improve the follow-up and care of co-infected patients.
- Alternative models: MSF has sought to find ways to treat patients who are difficult to fol-

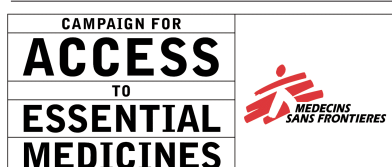
low, such as migrants or nomadic people, by reducing their need to come to a clinic. These efforts include home-based care in Cambodia and factory-based treatment in Thailand.

- Improving adherence to treatment: MSF is introducing strategies offering more flexibility to patients and at the same time guaranteeing good adherence. Self-administered treatment models have been begun with selected patients in Somalia, among co-infected patients in South Africa, and among paediatric patients in Angola. Community- or family-based direct observation has recently been introduced in Cambodia and Mozambique.
- Increasing the use of easy-to-use, pre-qualified fixed-dose combinations of TB drugs.
- Increasing the use of the WHO-recommended six month treatment regimen (instead of eight months) within MSF projects.
- MSF is also upgrading diagnostic facilities in some countries, including introducing culture in Sudan and enhanced (fluorescence) microscopy in Cambodia and Angola, and improving follow-up of diagnosis with the use of culture, drug sensitivity testing and X-rays in Thailand, Côte d'Ivoire and Abkhazia.

(*) MSF withdrew from Afghanistan in August 2004 following the killing of five of its workers there in June 2004.

What needs to be done?

- TB is a worldwide killer on the rise, and there is a need for increased attention to ensure care for all TB patients.
- MSF will continue to draw attention to the problem making sure it stays high on the global health agenda. MSF will also push for changes in the global TB strategy that at present excludes a large proportion of individuals with TB and is far from being a “cure for all”.
- Until new TB tests and drugs become available, MSF will continue to make the best of the current tools available, improving them and piloting innovative ways of delivering TB care in its projects.
- MSF works to increase awareness of drug-resistant TB and advocate for improved access to affordable second-line TB treatment.
- MSF advocates for the research and development of new diagnostics and treatment for TB at all levels. The sooner there are quality tests for TB that can be adapted to resource-poor settings, the sooner we will be able to provide appropriate diagnosis and care to all TB patients.
- Governments, scientists and pharmaceutical companies worldwide must increase investment in easy-to-use, affordable TB tests, vaccines and medicines.



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