Putting sleeping sickness to sleep forever
Together with Congolese and international partners, Prof. Marleen Boelaert and her team are waging a decisive battle against this deadly tropical disease.

26-01-18 - Roeland Scholtalbers

Sleeping sickness can be compared to a sniper lying in wait to take a shot. The disease affects poor communities such as those in the brousse of the Democratic Republic of Congo. Together with Congolese and international partners, Prof. Marleen Boelaert and her team are waging a decisive battle against this deadly tropical disease.

Sleeping sickness is caused by a single cell parasite that is transmitted by tsetse flies. The first symptoms can take years to present themselves and include fever, headaches and joint pains. Once the parasite invades the central nervous system and reaches the brain, its victims suffer confusion, have trouble sleeping and eventually fall into a coma.

Belgium and ITM have since long made important inroads into reducing sleeping sickness through control activities and research. By the end of the colonial period, the disease had almost disappeared, but crept back after the Congolese independence in 1960. The tide is slowly turning, however, and the illness has been greatly curtailed in recent years. More than 85% of new cases reported worldwide occur in Congo. Last year, fewer than 2000 cases were confirmed, although the actual number may be higher.

Sleeping sickness is a particularly complex disease. It is no sinecure to trace new cases in Congo’s most remote areas. Not all regions of this immense country keep reliable statistics. Furthermore, to get a convincing diagnosis is a complicated and time-consuming task but crucial to prevent healthy individuals from being treated with syringes, which can have toxic side effects.

Prof. Marleen Boelaert, a world expert on neglected diseases, and her team have recently launched a new project to consign sleeping sickness to the dustbin of history by 2025. Just as a reference, smallpox is the only disease that has been successfully eradicated, 37 years ago. However, there are several reasons for optimism, which is why the Belgian Minister for Development Cooperation, Alexander De Croo, and Bill Gates will be committing 50 million euro to the eradication of sleeping sickness over the next nine years. When presenting the initiative in April 2017, Bill Gates praised the ITM saying: "The Institute has been doing an excellent job for a long time. It has found the right way to reach even the most remote places."

In recent years, ITM, with the support of the Bill & Melinda Gates Foundation, has tested an innovative approach through a research programme to control sleeping sickness. "It is based on improved medication, rapid diagnostic testing, smaller and more effective fly traps, digital data processing and more efficient population research," says Prof. Boelaert. "We think that through this novel approach and together with our Congolese and international partners, we can deal a final blow to this disease."

More than 40 years ago, ITM developed the CATT test, the world’s most widely used sleeping sickness test. The Institute produced tens of millions of these over the years and shipped them all over Africa. However, the CATT test does not work without refrigerated reagents and a small engine, which means that field workers need a terrain vehicle equipped with a fridge and batteries. In 2014, the team of Prof. Philippe Büscher at ITM and Coris Bioconcept developed a rapid test resembling a pregnancy test. On the basis of a drop of blood, it provides a diagnosis within 15 minutes. "The rapid test
can also be carried out by less specialised staff and is much easier to take to remote villages," says Prof. Boelaert.

Furthermore, it is easier to combat the tsetse fly with smaller ‘tiny targets’ that attract and kill the flies. Detection of new cases within the community is more efficient through electronic data recording. “A combination of these digitised data and satellite data relative to the natural environment makes it possible to target and detect more sources of infection,” says Prof. Boelaert. In addition, the set-up of smaller and more flexible mobile screening teams makes it easier to identify new cases. New pills complete this approach, ensuring a safer and easier treatment compared to treatment with injections.

For the implementation of this ambitious project, ITM can count on the support of the Congolese Ministry of Health, the national sleeping sickness control programme and a series of international partner organisations. The Belgian Technical Cooperation and Memisa are ITM's key Belgian partners in the fight against this disease.