Sleeping Sickness rampant in Sub-Saharan Africa

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The recent announcement that the Microsoft Gates Foundation has donated $15 million to fund research into sleeping sickness has only served to highlight the abysmal response by pharmaceutical companies and Western governments to a disease that is now affecting millions in Africa.

The money was awarded to a group of international researchers led by Dr Richard R Tidwell of the University of North Carolina (UNC) at Chapel Hill. They are studying the effect of a new drug known as DB-289. Toxicity tests have been carried out on human volunteers in Germany and the drug is now to be tested on patients with sleeping sickness at the Institute for the Combat and Control of Sleeping Sickness clinic at Viana, near Luanda in Angola.

Sub-Saharan Africa has been hit by three major sleeping sickness epidemics over the last 100 years. By the 1960s the disease had almost been eradicated, but the current outbreak, which began in 1970, is now a threat to 60 million people living in the 36 countries comprising sub-Saharan Africa.

According to the World Health Organisation (WHO) only three to four million of those people who are at risk are under surveillance at health centres. The WHO says 45,000 cases were reported in 1999, but estimates the real number of people affected to be ten times this figure. Many of the figures are based on reports from areas with only five-percent surveillance of possible infected people. In some areas of Angola, Southern Sudan and the Democratic Republic of Congo, the prevalence of the disease is between 20 and 50 percent, making it the first or second highest fatal disease in these areas and even overtaking AIDS. Overall the disease is spreading across the continent at three times the rate of AIDS.

Sleeping sickness, or trypanosomiasis, is caused by the trypanosoma parasite. This is a single celled protozoan. Tsetse flies, about the size of houseflies, transmit the disease by biting humans.

The disease is confined to sub-Saharan Africa and occurs in two types. One type, causing chronic infection, is found in Central and West Africa. Once a person is infected, this form of the disease can take several months or even years to progress and for the symptoms to emerge. Once the symptoms have emerged, the disease is already at an advanced stage.

The other more virulent form of the disease is found in Southern and Eastern Africa and causes a more acute infection, with symptoms showing after only a few weeks. Domestic and wild animals act as reservoirs of the disease and also succumb to it.

In both types of the disease, the parasite multiplies in the host body, leading to fever, headaches and joint pains. The second phase of the disease, the neurological phase, occurs when the parasite crosses the blood barrier into the brain and central nervous system. This phase causes sensory disturbance, poor co-ordination, confusion and disturbance of sleep (hence sleeping sickness). If not treated the disease is fatal. Even if treatment is given, once the secondary neurological phase has begun it can leave the patient with irreversible damage.

Two existing drugs—Suramine, discovered in 1921, and Pentamidine, discovered in 1941—can be used to treat the first phase of sleeping sickness, i.e. before it crosses into the central nervous system.

Currently the main drug used to treat the second advanced phase of the disease is called Melarspol, which was developed in 1949. It has undesirable side effects. One such side effect is a reactive encephalopathy—a neurological allergic type reaction affecting the brain. In five percent of cases the side

effects prove fatal. Those who recover from the neurological allergic reaction can be left damaged.

The drug is the only surviving pharmaceutical product based on arsenic. It has to be injected directly into veins and is very painful. One doctor likens it to “arsenic suspended in car anti-freeze solution”. An indication of its toxicity is given by a WHO report, which explained that production of the drug was being transferred to Brazil because of pressure from environmentalists and more stringent pollution regulations in the West.

Apart from the side effects, there are now cases of drug resistant forms of sleeping sickness being reported, making up to 30 percent of cases in Central Africa. The only alternative drug, Eflornithine, was registered in 1990 but was withdrawn from production because it was unprofitable. The WHO was given the licence for the drug and is currently seeking a manufacturer.

The current spread of the disease can be attributed to the wars continuing in a number of regions of sub-Saharan Africa, made worse by the poverty and cuts in what was already minimal levels of healthcare provision, arising from IMF structural adjustment programmes. As the WHO fact sheet on sleeping sickness comments, “[It] affects remote and rural areas where health systems are least effective, or non-existent. It spreads with socio-economic problems such as political instability, displacement of populations, war and poverty.”

Dr Josenando Theophile is director of the Angolan Institute for the Combat and Control of Sleeping Sickness, which is undertaking the trial of the new drug DB-289. He explained that in Angola in 1974 there were only three cases of the disease, while today the figure is nearly 100,000.

In a statement made last year Dr Tidwell explained the reason for the group at UNC applying for the Microsoft Gates Foundation grant. The pharmaceutical industry, he argued, “cannot dedicate the research funds or technical resources necessary to search for new, more effective drugs . In the competitive marketplace, major pharmaceutical companies must concentrate on high-profile diseases with more potential for profits.”

The impact of the drive for profits by the drug companies and the indifference of Western governments to the spread of disease in Africa is reflected in statistics given by the charity, Doctors without Borders. Between 1975 and 1997 the international pharmaceutical industry put on the market 1,450 new medical products. Of these only 11 were directly targeted at common diseases found in Africa. Even the drug DB 289 was not originally developed to combat sleeping sickness. It was the result of research by Immtech International Inc (IMMT) into the effects of related compounds on opportunistic fungal infections that occur in pneumonia and in immune suppressed patients, such as those with AIDS or who have had organ transplants. IMMT is to be paid nearly $10m of the grant to the UNC to carry out clinical trials.