

بسم الله الرحمن الرحيم

Republic of Sudan
Federal Ministry of Health
State Minister



جمهورية السودان
وزارة الصحة الإتحادية
وزير الدولة

Khartoum: ١٥:١٥:٢٥١٥.....

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Press Release by Mrs. Sumaia Idris Akad, Federal State Minister of Health, to declare elimination of transmission of River Blindness (Onchocerciasis) in Abu Hamad focus, River Nile State

Introduction:

River Blindness is a parasitic disease that affects the eye and skin in human beings. It is caused by the filarial worms known as *Onchocerca volvulus*, a parasite that can live up to 14 years in the human body. The disease is transmitted by the black fly 'Simulium', which is known locally in River Nile State as 'Kunteeb'. The fly breeds in fast flowing waters like cataracts, waterfalls and fast streams.

The disease is widely spread in Central and South America, Asia (Yemen), and in thirty-one countries in the tropical and equatorial regions of Africa. About 17 million people were already affected by this disease, while about 120 millions are at risk of being infected with it. Same time, the number of blind people amounts to about 270 thousand people, and 500 thousand people have some sort of visual impairment. The inflammation caused by larvae that die in the eye results initially in reversible lesions on the cornea that without treatment progress to permanent clouding of the cornea, resulting in blindness. There can also be inflammation of the retinal and optic nerve resulting in vision loss, particularly peripheral vision, and eventually blindness. This will definitely have a socio-economic impact on those countries in addition to being a public health problem.

In Sudan, the disease spreads in four regions, known as foci, which are Al Radom focus in South Darfur, Khor Yabous focus in southern Blue Nile, Al-Galabat (Sundus) focus south east of Gedaref state, and Abu Hamad focus in River Nile state, which is the farthest focus in the north part of the world and is the biggest one.

In 1985 it was found that the prevalence of disease was 37% in Abu Hamad area, in 1987 it was 60% in Gedaref region on the Atbara River. It was 65% in Al-Radom in South Darfur, and about 40% in Khor Yabous in Blue Nile state. Abu Hamad area did not register any cases of blindness. However, the disease was discovered in Sudan in 1908, in Abu Hamad in 1958, and in 1975 in the Atbara River area. Since that time some attempts had started to treat those affected people and to fight this disease. Where Suramin drug was used as a treatment for adult worms, but it was stopped due to its toxicity and intravenous usage. After that DEC drug was used as an anti-micro filarial drug, but it was also stopped, because it was proved also to be dangerous for the eyes. In addition to that, surgical operations for the removal of the adult worms (nodulectomy) were carried out in Abu Hamad Hospital.

In 1987 ivermectin (also known as Mectizan) was licensed as an alternative drug instead of the traditional treatments, and it had a great effect. It was scientifically proved that ivermectin was effective in killing the microfilarial worms in the skin and eye. It was safe to use in mass treatment compared to the previous drugs because its side effects are quite limited. Ivermectin is in the form of tablets that are taken by mouth in one dose, ranging from 1 to 4 tablets according to the patient's height. It also can be distributed from house to house without the need to go to health centers. The pharmaceutical company Merck has pledged to donate ivermectin (known by the Merck brand name as Mectizan) to the world, for as long as needed.

Consequently, ivermectin was introduced to Sudan and was used by the ministry of health in Abu Hamad focus in 1998, with support from the African Program for Onchocerciasis Control (APOC) and the Carter Center. Then, the program adopted the strategy of distributing the drug once a year through the local community volunteers known as CDDs. The program was expected to continue over 10-14 years. The distribution coverage rate was at first only 20% in 1998, but it increased to 55% by 2005.

In 2005, the Government of Sudan, represented by the Federal Ministry of Health, decided to change the program strategy in Abu Hamad from control to elimination. The reason for this was that it was proved to be an isolated focus of the disease, a focus that could be wiped out. Consequently, the program changed from once to twice per year distribution to more quickly do away with onchocerciasis. The Carter Center fully supported this important change in treatment strategy in Abu Hamad focus. And Merck increased its pledged donation of Mectizan to accommodate twice per year treatments in Sudan. The twice per year distribution of the drug began in 2006. The coverage rate increased greatly and remarkably to over 100% by 2011. Those high coverage rates of treatment led to the results which we shall present to you, and which clearly show the success of our elimination program.

Last week, the Nobel Prize in Medicine and Physiology was awarded to the two scientists, Dr. Campbell and Dr. Omura, who discovered ivermectin. It is certain that the Nobel committee was impressed by the wonderful impact their discovery has had in eliminating River Blindness in several parts of the world, including Sudan. What follows is the scientific data that support our declaration of success against River Blindness in Abu Hamad.

Stopping mass treatment in Abu Hamad in 2012:

Three scientific methods were used to make the determination to stop ivermectin mass treatment for River Blindness disease in Abu Hamad focus in 2012. There were:

- 1- Infections among the Abu Hamad population based on microscopical examination of skin samples:
 - a) In 1985 the prevalence was 37%.
 - b) In 2006 the prevalence was 5%.
 - c) In 2007 the prevalence was 0.45%.
 - d) In 2011 the prevalence was 0.00%.

2- Analysis of blood samples for OV16 anti-bodies by means of the ELISA technique, and the results were as follows:

- In 2007, the prevalence was 0.00% among children and 1.5% among adults.
- In 2011 it was 0.00% among children (This meets the allowed World Health Organization of less than 0.1% with 95% statistical confidence)

3- Assessment of black flies for *Onchocerca volvulus* infectious stage L2 larvae in the body of the vector by using O-150 Polymerase Chain Reaction protocol follows:

- a) In 2011 in the sentinel villages in Abu Hamad there were **0 infections** in the vector black flies. This indicated that the transmission of River blindness disease was interrupted (the allowed prevalence is less than 0.05 infected fly/2,000 flies or 1 infected fly/1,000 flies). The results showed us with 95% statistical confidence that we were below this level.

Based on these results, the Federal Ministry of Health declared the interruption of transmission of River blindness in Abu Hamad focus, and halted the distribution of Mectizan in this focus in 2012, and shifted to the Post Treatment Surveillance (PTS) for three years according to the directives of the World Health Organization.

After the consecutive years, in November 2014 through June 2015 black fly vectors were collected from four sentinel sites, starting from Karney Island in south of the Focus, Nady and Mugrat Island in the middle and Sarsaf area in the north of the Focus. The total of the collected flies was more than 19,000 flies.

The assessment of black flies for *Onchocerca volvulus*; infected stage L2 larvae in the vector body by using O-150 Polymer Chain Reaction protocol has revealed **Zero infection**. As before the allowed percentage is less 1 infected fly/1000.

In December 2014- January 2015 a total of 5,476 dried blood spots were collected from children under the age of ten years living in the Abu Hamad Focus. These

were analyzed for OV16 antibodies. These resulted in only one positive case, giving a result of 0.018 and the allowed infection rate is less than 0.1%. That means our results are less than the allowed rate, with statistical confidence of 95%.

In addition, a skin snip sample taken from the single positive case analyzed by PCR to detect any presence of DNA of *Onchocerca volvulus* was **Negative**, *indicating that this is not an active infection.*

Based on these results, the Government of Sudan represented by the Federal Ministry of Health announces that the results of laboratory tests after three years of Post Treatment Surveillance (PTS) in Abu Hamad Focus have achieved the allowed results according to the standards of the World Health Organization. *Consequently, we declare the elimination of transmission of onchocerciasis [River blindness] in Abu Hamad Focus.*

Ladies and Gentlemen,

This is a historic day that all Sudanese should be proud of, and an example for all our African neighbours that we can wipe out River blindness in accordance with international standards.

The decision and the action are ours to make.

Now we must continue with the task for interrupting transmission and then completing post treatment surveillance, in a similar manner to Abu Hamad, in the other parts of Sudan where Sudanese people suffer from this disease: Galabat, Radom, and Khor Yabous. At such time, the Sudan Federal Ministry of Health will request World Health Organization verification of the elimination of this terrible disease from all of Sudan.

WHO verification of elimination has been accomplished in three countries already in the Americas, but none yet in Africa.

As Government of Sudan and Federal Ministry of Health and all Sudanese Health Institutes, we express our deep gratitude and appreciation to:

- 1- The Carter Center for its generous and unlimited financial, technical and consultancy assistance to the program, especially in the rehabilitation and training of laboratory staff of Onchocerciasis Research Unit, with technical assistance from the University of South Florida.
- 2- The African Program for Onchocerciasis Control (APOC).
- 3- Merck & Co. (the producer of the Mectizan drug) and Mectizan Donation Program (MDP).
- 4- The Lions Clubs International Foundation as a donor to The Carter Center.
- 5- The National Program for Prevention of Blindness of the Federal Ministry of Health.
- 6- Ministry of Health of River Nile State.
- 7- Ministry of Health of Northern State.
- 8- All Localities and Administrative Units, where the program was implemented.
- 9- The Local Community (the first beneficiary from this program) and those who had carried out the program activities.

May Allah grant you health and wellness....

