



Khartoum: May 02, 2012

الخرطوم في :

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Sudan Federal Ministry of Health
Primary Health Care Directorate
The National Program for Prevention of Blindness

Press Release by Mr. Alkhair Alnour Almoubarak, State Minister of Federal Health Ministry, to declare interruption 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 about thirty 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 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 Suramine 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. In addition to that, surgical operations for the removal of the adult worms (nodulectomy) were carried out in Abu Hamad Hospital.

In 1987 Mectizan drug was used as an alternative drug instead of the traditional treatments, and it had a great effect. It was scientifically proved that the Mectizan was quite effective in eradicating micro filarial worms if used as a mass treatment. It is quite easy to use compared to the previous drugs. Moreover, its side effects are quite limited (it 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), compared to intravenous injections and surgical operations. It also can be distributed from house to house without the need to go to health centers.

Consequently, this drug was introduced to Sudan and was used in Abu Hamad focus in 1998 by the African Program for Onchocerciasis Control (APOC). This happened after pharmaceutical company Merck has pledged to donate their drug, Mectizan, to Sudan and up till now. Then, the program adopted the strategy of distributing the drug once a year through the Local Community (supervisors and volunteers) as a mass treatment, and the program was expected to continue over 10-14 years. The distribution coverage rate was 20% in 1998, and started to increase till it reached 55% in 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, because it is proved to be an isolated focus. Consequently, the program adopted the semi-annual distribution of Mectizan by local community. And The Carter Center has fully supported this important change in treatment strategy in Abu Hamad focus and continues to support it until now. The semi-annual distribution of the drug started at the beginning of 2006. The coverage rate was about 60% and started to increase greatly and remarkably to over 100% in 2011. Those high coverage rates of treatment led to the results which we shall present to you, and which clearly show the success of this program.

Evaluation of Epidemic Situation of River Blindness Disease in Abu Hamad focus:

Three scientific methods were used to assess the status of transmission of the River blindness disease in Abu Hamad focus, using the following methods:

- 1- Assessment of black flies for onchocerciasis volvolus infectious stage L3 larvae in the head vector by using 0-150 Polymerase Chain Reaction protocol follows:
 - a) In 2007-2008 collection of vector from two sentinel villages in the project area were analysed by PCR showed that the infectivity rate was 0.84/10,000 flies, which asserts that the disease was actually suppressed.
 - b) In 2011 in the same above-mentioned sentinel villages in addition to another one, using the same previous analysis, the result was 0.00 infected fly/10,000 flies. No doubt, this indicates that the transmission of River blindness disease was interrupted (the allowed prevalence is less than 0.5 infected fly/1,000 flies or 0.05 infected fly/10,000 flies).
- 2- Microscopical examination of skin snips revealed that OV microfilaria in human beings was as follows:
 - 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%.

(The allowed prevalence is 5% out of 100 % of villages or 1% out of 90% of the targeted villages).

3- Analysis of blood samples for anti-bodies among children less than 10 years by means of OV16 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 (the allowed ratio is less than 0.1%)

Based on these results, the Federal Ministry of Health announces that the results of laboratory tests had achieved the allowed results according to standards of the World Health Organization (WHO), and the results were even less than the allowed figures. Consequently, we declare the interruption of transmission of River blindness in Abu Hamad focus, and therefore halting the distribution of Mectizan drug in this focus, and shift to the Post Treatment Surveillance (PTS) according to the directives of the World Health Organization.

This is a historic day that all Sudanese can be proud of, and an example for all our African neighbors that we can wipe out river blindness and we must. The decision and the action are ours to make

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.
- 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....