Who Report on Human African Trypanosomiasis

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The World Health Organization (WHO) has continued to support the disease endemic countries to strengthen human African trypanosomiasis (HAT) control and surveillance activities through the Sleeping Sickness National Control Programmes (SSNCP).

1. Current epidemiological situation

Since 2009, for four consecutive years, the number of new cases of HAT annually reported to WHO has been maintained below ten thousand (10,000), with seven thousand two hundred fourteen (7,214) new cases reported in 2012. In 2011 seven hundred and forty one (6,741) cases were reported. At the same time the surveillance system and the coverage of control activities has been extended and improved. The underreport is currently estimated in 50-60\% of cases with a total number of estimated cases around twenty thousand (20,000).

Recently it has been estimated that approximately 70 million of people live at different level of risk of contracting HAT, 57 million of them (which means the 81\%) are at risk of gambiense HAT. The population at risk of HAT are distributed over an area of approximately 1.55 million km\(^2\) in 22 of the 36 HAT endemic countries. 5 million people live in areas classified as high to very high risk of gambiense HAT.

The chronic form of the disease, caused by \textit{Trypanosoma brucei gambiense}, is endemic in 24 countries and in the last years, it represents 95-98\% of HAT cases reported. From 2009 to 2012, eleven countries (Benin, Burkina Faso, Gambia, Ghana, Guinea-Bissau, Liberia, Mali, Niger, Senegal, Sierra Leone and Togo) reported no cases. Eight countries namely Cameroon, Congo, Côte d’Ivoire, Equatorial Guinea, Gabon, Guinea, Nigeria and Uganda reported less than 100 new cases annually. Angola, the Central African Republic, Chad and South Sudan reported between 100 and 500 new cases annually. The Democratic Republic of the Congo is still the most affected country reporting more than 500 new cases each year.

The acute form of human African trypanosomiasis caused by \textit{T. b. rhodesiense} is endemic in 13 countries. In the last four years (2009-2012), in Botswana, Burundi, Ethiopia, Mozambique, Namibia, Rwanda and Swaziland, no cases were reported. Kenya and Zimbabwe reported sporadic cases and Malawi, United Republic of Tanzania, Uganda and Zambia reported fewer than 100 new cases annually.

On the other hand, a review of HAT cases diagnosed in non-endemic countries (non-DEC) from 2000 to 2010 was done. Ninety-four (94) cases were reported in this period in 19 non-DEC. Seventy-two (72) per cent of them corresponded to the Rhodesiense form, whereas 28\% corresponded to the Gambiense form. Cases of Rhodesiense HAT were mainly diagnosed in tourists after short visits to DEC and cases of Gambiense were expatriates living in DEC for long periods and refugees or migrants from DEC. Centralized distribution of drugs for HAT by WHO to non-DEC enables this HAT surveillance system for non-DECs. This system provides valuable information on disease transmission and complements data collected in DECs.
The people screened by active case-finding in the last years has worrisome reduced below 2,000,000 people screened yearly, but in the other hand, the health care facilities involved in passive surveillance have increased.

2. Epidemiological surveillance in low endemic countries and countries where cases are not reported.

An integrated surveillance system has been developed for disease surveillance in countries listed as HAT endemic but where few cases or even no cases have been reported in the last ten years. This system is based on the serological screening of certain patients attending to selected health structures (sentinel sites) in known HAT foci. The activities are integrated in the peripheral health system.

The development of individual serological tests known as rapid tests can facilitate this strategy. Serological positive samples are referred to the WHO collaborative centres for further analysis and assessment of suspects. This system has been already introduced in Benin, Togo and Cote d’Ivoire, and is expected to be extended to other countries, starting by Burkina Faso, Ghana, Mali and Cameroon.

3. Access to the best HAT treatment

Public-private partnerships have allowed DEC to improve access to diagnosis and use of the best available treatment options. Combination of efornithine and nifurtimox (NECT) has become first line treatment of second-stage disease in gambiense DEC, reducing below 2% the cases treated with the more toxic melarsoprol. A pharmacovigilance system was implemented to monitor this new treatment, confirming the efficacy and safety of the NECT. The data obtained by the pharmacovigilance system were presented to the WHO Committee and the NECT has been retained in the WHO list of essential medicines.

WHO continues supplying the medicines together with the material needed for its administration to the SSNCPs with the support of MSF/Logistique..

4. The Atlas of HAT

WHO launched in 2009 the initiative to map at village level, the control activities and cases reported for the period 2000-2009. This activity has been undertaken in collaboration with the Food and Agriculture Organization (FAO) within the framework of the Programme Against African Trypanosomiasis (PAAT).

National Sleeping Sickness Control Programmes (NSSCPs), NGOs and research institutes provide input and participate in the development of the database. At this stage, the mapping of the period 2000-2009 is completed and an update to 2012 is on-going.

The Atlas of HAT is available in the public domain through WHO and FAO/PAAT websites for the benefit of national health services, scientists, concerned communities, policy makers and donors with different levels of access defined by a Committee. It is pending that WHO provides NSSCPs with equipment and software including training for data management for the ownership of the Atlas enabling regular updates at the national level.
5. Support to research. WHO HAT Specimen Bank

WHO collaborate with different research institutions to seek for more appropriate diagnostic, treatment and surveillance tools. In this frame, WHO built a HAT Specimen Bank, aimed to facilitate to research institutions the biological material necessary to develop new HAT diagnostic tests. The Institute Pasteur in Paris (France) acts as a Repository Bank for storing samples and releasing the requested material to the research institutions after the clearance of the WHO Exit Committee.

6. WHO HAT Experts Committee

In April 2013 the WHO Expert committee on HAT control and surveillance met in Geneva after 18 years, to update the current knowledge in the disease. After discussing on epidemiological patterns, new diagnostic approaches, new therapeutic regimens and distribution of the disease, they recommended strategies and tools to be used in control of HAT. The technical report of the WHO HAT Expert Committee is expected to be published before the end of 2013.

Previously, in December 2012, WHO convened a meeting in Geneva with NSSCP focal points, experts from WHO collaborating centres and members of the WHO Strategic and Technical Advisory Group on Neglected Tropical Diseases (NTD STAG), to discuss strategies, tools and criteria for the process of eliminating gambiense HAT. They strengthen the commitment of DEC in gambiense HAT elimination and remarked that elimination of Gambiense trypanosomiasis as a public-health problem by 2020 represents an intermediate objective, which should be followed by the sustainable global elimination of the disease defined as absence of transmission resulting in zero cases reported in all foci.

After these two meetings strategies for elimination of gambiense HAT have been developed.

7. Collaboration with PATTEC, AU-IBAR and other UN Agencies. Collaborative centers of WHO for HAT control and surveillance program

WHO maintains the collaboration with the African Union (AU) under the frame of the Memorandum of Understanding signed between WHO and the Department of Rural Economy and Agriculture of the AU, to join forces to fight African trypanosomiasis within the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC). Since 1997, the Program against African trypanosomiasis (PAAT) is the forum where WHO joins FAO / IAEA and AU/IBAR to coordinate support to HAT endemic countries.

The Department of Parasitology at the Institute of Tropical Medicine in Antwerp (Belgium) and the Research Unit 177 of the Institut de Recherche pour le Développement (IRD), based in the CIRDES (Centre International de Recherche-Développement sur l’Élevage en zones Subhumides) in Bobo-Dioulasso (Burkina Faso) continue given technical support to the WHO HAT control and surveillance programme as WHO Collaborating Centres.

Conclusion

Since 2000, after implementation of continuous control measures by NSSCPs supported by WHO, bilateral cooperation and NGOs, the disease has been put under control in most of the
endemic countries. In this situation, today the disease is considered by WHO for the elimination.

In fact, in 2011, the elimination of HAT was considered by the WHO Strategic and Technical Advisory Group on Neglected Tropical Diseases as a feasible goal, and included in WHO’s roadmap on neglected tropical diseases with a 2020 target date for its elimination as a public health problem. In 2012, different partners including major pharmaceutical companies, the World Bank, research institutes, charitable organizations, and government development agencies of the United Kingdom and the United States of America announced the implementation of collaborative measures that were included in the London Declaration on Neglected Tropical Diseases to support the objectives and to accelerate the achievements of the WHO’s roadmap.

In December 2012, elimination of gambiense HAT was endorsed by HAT focal points of disease endemic countries and strategies, tools and criteria for the process of eliminating gambiense HAT were set up.

In April 2013, the WHO Expert Committee on HAT control and surveillance give out recommendations addressed towards the disease elimination.

Nevertheless and despite the exciting perspectives of elimination, the situation is fragile and past and current experiences show that HAT elimination is difficult and will require more efforts, time and money, There is needed a long-term commitment of donors, shifting from a control approach to an elimination approach. Adequate funding must be available not only to implement elimination program activities but also to support research to improve current deficient control tools to engage health services in sustainable sleeping elimination process.

DEC should be supported to strengthen control activities, to improve the surveillance of the disease gradually integrating surveillance and control activities in the health system. The strengthening of the health system to implement the activities included in the elimination strategies is a must.

The advocacy for keeping the disease in the health agenda of donors must continue. Apart of the pledge of donors, the appropriation by endemic countries of the objectives and process of elimination is critical. Policy-makers should prioritize elimination of HAT as a health objective when competing with other national priorities. HAT elimination has to be included in the national health plans.

The collaboration and coordination with PATTEC, AU-IBAR and other UN Agencies should help to synergize efforts and avoid duplications but more important, to assist in the sensitization of health decision-makers in DEC and donors to keep HAT in the Health Agenda.

Concerning T.b.rhodesiense, the disease has to be considered as a zoonosis with occasional presence in human beings and the possibility of occurrence of unexpected epidemics. The non-human reservoir makes its elimination more difficult and requiring a multisectoral approach where animal medicine has a preponderant task but involving also human health. The elimination of rhodesiense HAT as the total interruption of transmission of the disease is considered as not feasible. However it has been considered the possibility of elimination as a public health problem.

Summarizing, much progress has been made in the fight against the gambiense HAT but the final point is not yet in our viewfinder.