

OVERVIEW

Chagas disease, update on a migration related tropical disease in Europe

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On this year's World Health Day (7 April), WHO devoted special attention to vector-borne diseases. Chagas disease (historically called American trypanosomiasis) is a typical example of a vector-borne infection. With the increasing Latin American migration to non-endemic areas, Chagas disease has appeared as an emerging infectious disease in non-endemic continents, including Europe. In contrast to the endemic American areas, the means of transmission in Europe is characteristically non-vector-borne (direct). European-level, harmonized bodies designed to cope with this emerging public health problem have been created by WHO, the European Centre for Disease Prevention and Control (ECDC) and leading experts in the field of Chagas disease research and control.

Chagas disease – described by the Brazilian physician Dr Carlos Chagas in 1909 – is a protozoal infection caused by *Trypanosoma cruzi*, affecting the populations of Latin American countries. In endemic areas it is typically a vector-borne disease transmitted by Triatomine bugs from infected individuals or animals to a new host. Other means of transmission include: blood transfusion; transplantation of organs, tissues or their components; breastfeeding; and congenital transmission, which occurs when the parasite crosses the placenta during pregnancy. The infection may also be foodborne. The acute disease phase presents itself most frequently with mild and non-typical symptoms (fever, malaise, swelling of one eye if the bite is nearby, a red and swollen area around the bite). Non-treated infections frequently develop into a chronic phase, eliciting heart failure and neurological or gastrointestinal manifestations. Blood tests to show the parasite or its genetic material, or detection of specific antibodies to the pathogen may confirm the diagnosis. It is also possible to reveal the parasite through xenodiagnosis. In this case, non-infected bugs take a blood meal from the patient, after which the parasite is sought in the bug's faeces. Treatment with nifurtimox or benznidazole is recommended for all acute infections, congenital infections, for immunocompromised individuals, and for children with chronic infections. In the case of adults

presenting with chronic infection, consultation is advised regarding possible treatment with anti-parasitic agents; however, pregnancy is a clear contraindication to anti-parasitic intervention. In the chronic phase, with organ system manifestations, symptomatic therapy may also be helpful, following consultation with the relevant specialist.

In endemic areas Chagas disease accounts for significant morbidity (about 10 million patients) and mortality, and therefore also results in considerable economic loss (1). The emergence of the disease through increasing Latin American migration to non-endemic areas necessitates particular preparedness among health care personnel and also deserves the attention of the public. As the infection can remain symptom-free for decades, Latin American migrants may be not aware of the hazard they pose to the population of the receiving country. Furthermore, unregistered illegal migrants remain entirely outside the scope of the health care system. In Europe, spread of infection occurs by direct transmission of the parasite, rather than by means of vector-borne transmission.

As already mentioned, direct transmission can take place via blood transfusion, transplantation procedures, and transplacental transmission of the *Trypanosoma*. It is therefore highly important to diagnose and treat the infection in migrants, and exclude positively diagnosed individuals from blood, organ, tissue and cell donations.

Several publications have examined the problem of Chagas disease in Europe, including scientific papers in journals such as *Eurosurveillance*, Europe's journal on infectious disease epidemiology, prevention and control. In one such paper it was reported that by 2009, 4290 diagnosed cases of Chagas disease had been recorded among Latin-American immigrants in 9 European countries, with a prevalence of 1.3 per 1000 resident migrants from endemic countries (2). The prevalence in undocumented migrants may be even higher. The estimated number of congenital Chagas disease cases ranges between 20 and 183 in the countries involved in the 2011 study, in which the authors called for measures to tackle the problem at European level.

In 2010 WHO released a statement on Chagas disease in Europe, summarizing the recommendations set out by European governmental representatives and technical experts at an informal meeting (3). The recommendations included:

- setting up an integrated surveillance system to aggregate data and information about Chagas disease provided by European national health authorities;
- converting previous national technical recommendations into public health decisions;
- implementing strict guidelines on control measures for blood banks and organ transplant systems to eliminate the risk of Chagas disease transmission;
- testing target groups, such as women of child-bearing age and patients with heart conditions at risk of having been infected previously in endemic countries;
- implementing early detection practices and treating congenital transmission patients;
- improving access to diagnosis and medical care for anyone coming from areas in which Chagas disease is endemic;
- enhancing the capacity of national health systems to correctly diagnose, manage and treat Chagas disease; and
- harmonizing and validating diagnostic procedures through appropriate guidelines, with the support of relevant public health institutions.

At the 10th Workshop on Chagas Disease held in Barcelona on 6 March 2014 it was emphasized that Chagas disease needs to be considered as a worldwide public health issue

that now includes countries of the WHO European Region (4). Leading experts from around the world overviewed the latest advances in the treatment of Chagas disease and discussed existing health policies. It is estimated that between 68 000 and 122 000 inhabitants could be infected in Europe. Despite this situation, no European-wide legislation exists to address the problem. Dr Joaquim Gascon, a leading expert in the field stated that “Apart from the lack of European legislation, we are faced with additional challenges that are slowing the progress being made in the fight against Chagas disease”. He also emphasized the lack of experience on the part of health practitioners in the diagnosis and management of the disease.

To conclude, the following quote from a recent technical report of the ECDC is particularly relevant (5):

In Europe, Chagas disease is not systematically monitored, but available data suggest that prevalence rates are high enough in some countries to warrant concern. Spain, Italy, the Netherlands, the United Kingdom, Germany and France have the highest number of estimated cases in Europe. Key issues to be addressed are preventing transmission through blood, organ, tissue and cell donation by Latin American donors and congenital transmission in Latin American pregnant women who are infected with *T. cruzi*. However, only France, Italy, Spain and the United Kingdom are currently addressing transmission risks. There is a need to improve awareness and detection of Chagas disease in Europe and to improve access to health care for both legal and irregular Latin American migrants, to ensure that the disease is diagnosed and treated.

References

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