



NEWSLETTER

CHAGAS DISEASE CLINICAL RESEARCH PLATFORM



COMMUNICATION PROCESSES ENABLE TIMELY DIAGNOSIS AND TREATMENT OF CHAGAS DISEASE

Page 10

The Chagas Disease Clinical Research Platform was created in 2009, the centennial anniversary of the discovery of the disease. Its main objective is to support the overcoming of Research and Development (R&D) challenges for Chagas disease through a flexible network, focused on tackling unmet health needs and facilitating diagnosis and treatment of *Trypanosoma cruzi* infection. In that way, the Platform continues to pursue mechanisms and synergies to facilitate development of new drugs and tools for Chagas disease. By creating an open, innovative, collaborative and patient-oriented environment, the Platform promotes meetings, training, standardization of protocols, regulatory aspects, and integration of ethical principles. The Platform provides a forum for technical discussions and exchange of information about Chagas disease,

while supporting efficient use of resources by avoiding duplication of efforts. Currently, the network gathers more than 430 members from 23 endemic and nonendemic countries. Representing more than 150 institutions, these individuals come from diverse backgrounds including research, academia, government, international and national organizations, and patient associations. Recent knowledge advances and the increasing number of researches and initiatives for Chagas disease provide a renewed optimism and underline the importance of open collaboration and fluid exchange of information. Encouraging cooperation among R&D initiatives, the Chagas Platform continues to facilitate clinical research, to promote professional development, and to strengthen institutional structures and capacities, looking up for accessible and simple treatments, as well as new tools for diagnosis and follow up.

P2 EDITORIAL - CHAGAS PLATFORM:
NEW SCENARIOS

P3 MEXICO FIGHTS CHAGAS DISEASE

P4 PUBLIC HEALTH AND THE STRUGGLE
AGAINST NEGLECTED DISEASES:
CIVIL SOCIETY ACTIONS IN BRAZIL

P5 DOCTORS WITHOUT BORDERS
CAMPAIGN PUTS PEOPLE AFFECTED
BY CHAGAS DISEASE IN THE SPOTLIGHT

P6 THE IMPACT OF *TRYPANOSOMA CRUZI*
GENETIC DIVERSITY ON PATHOGENESIS,
SERODIAGNOSIS AND DRUG DISCOVERY
FOR CHAGAS DISEASE

P6 CHAGAS DISEASE DIAGNOSIS
– THE MISSING LINK IN ASSURING
ACCESS TO TREATMENT

P7 ADVANCES IN MOLECULAR DIAGNOSIS
OF CONGENITAL CHAGAS DISEASE

P8 UPDATE ON DNDi CLINICAL STUDIES:
BENDITA AND FEXI 012

P9 CHAGAS DISEASE IN BRAZIL:
COMPREHENSIVE ACTIONS
TO AMPLIFY ACCESS TO DIAGNOSIS
AND TREATMENT

P10 COMMUNICATION PROCESSES ENABLE
TIMELY DIAGNOSIS AND TREATMENT
OF CHAGAS DISEASE

P11 EDUCATING PEOPLE ABOUT CHAGAS
DISEASE IN HEALTH SCIENCES PROGRAMS
IS AN ESSENTIAL COMPONENT
OF PREVENTING, DIAGNOSING
AND TREATING THE DISEASE

P12 INFOGRAPHIC: MULTIDIMENSIONAL
BARRIERS TO ACCESS TO TREATMENT
FOR CHAGAS DISEASE

EDITORIAL

CHAGAS PLATFORM: NEW SCENARIOS

CAROLINA BATISTA, MARINA CERTO AND SERGIO SOSA ESTANI,
DNDi/LATIN AMERICA

In 2009, when the Chagas Platform was created, it brought together a network of clinical research experts. Since then, our network has evolved, become more dynamic, and begun addressing several issues relevant to clinical research. We maintain a holistic view of Chagas disease and its dimensions of access innovation: from the discovery and pre-clinical phases of research to the implementation of programs assuring access to medicine, without losing sight of the social and political reality of people affected by the disease.

2017 was a dynamic year for our community. The Platform remained active even though the plenary meeting, initially scheduled to take place in Colombia, did not occur. We promoted several strategic discussions to expand innovation and access to diagnosis and treatment of Chagas disease. In August, we conducted the workshop "Comparison of Guidelines and Consensus for Chagas Disease - Argentina, Brazil and Colombia", as part of the ChagasLeish 2017 – 53th MEDTROP program in Cuiabá, Brazil.

This activity resulted in a report comparing the approaches and protocols of diagnosis and treatment in the three countries, in order to discuss the importance of a regional recommendation. The Platform also participated actively in the II Encontro do Fórum Social Brasileiro para Enfrentamento de Doenças Infecciosas e Negligenciadas (Second Meeting of the Brazilian Social Forum for Confronting Infectious and Neglected Diseases), held on the same occasion. Representatives of several social movements in Brazil exchanged experiences and described their efforts to fight for the rights of people affected by these diseases.

The Chagas Platform also supported and co-organized an important seminar in conjunction with the Baylor College of Medicine. This seminar gathered renowned experts on research and development for vaccines in Chagas. The event

took place in November at the American Society of Tropical Medicine and Hygiene (ASTMH) conference in Baltimore. The discussion focused on strategies to use current research in future clinical trials for vaccines and to define endpoints.

The Chagas Platform promoted a technical meeting of Clinical Research Centers of Chagas disease in Brazil at the end of November, in Rio de Janeiro. The event brought together specialists and representatives from clinical research centers throughout the country. The meeting allowed researchers to exchange experiences, establishing new strategic contacts and providing updates about clinical studies.

Thus, the dynamics of the Platform were transformed through the creation of workshops and satellite meetings throughout the year, strategically associated with scientific events. Meanwhile, the plenary meeting will still be held every two years. In addition, 2018 will be a year of strategic review, searching for mechanisms that support the sustainability of the Platform through collaborative initiatives. This year's activities reflect the dynamism of the international Chagas community: in May, the Platform organized a pre-seminar to identify access barriers for Chagas disease treatment in Brazil along with the Oswaldo Cruz Foundation and DNDi. Participants were primarily state health managers and experts from different Fiocruz research and health care areas. This is the first step in an important initiative to promote access to public health care for people with Chagas disease living in Brazil.

This edition of the Chagas Platform Newsletter reflects the transformation of the Platform and the breadth of its ongoing activities. For the first time, we posted a call for articles and received several contributions from our members. This issue addresses current issues and challenges relevant to the disease: the genetic diversity of *T. cruzi*, diagnostic issues, updates of key clinical studies, IEC (Information, Education, and Communication) in communities and universities, access initiatives, patients' perspectives and political advocacy.

The theme scope expansion of the Platform has been an organic process, in conjunction with recent trends, focusing on the integrality, on the individual and which highlight the urgent need for comprehensive solutions which translate the fruits of research into decision-making tools to benefit the millions of infected individuals who still do not have access to diagnosis and treatment.

MEXICO FIGHTS CHAGAS DISEASE

ELVIRA IDALIA HERNÁNDEZ CUEVAS, M.A. AMEPACH PRESIDENT
FINDECHAGAS VICE-PRESIDENT

In Mexico, Chagas disease is a social, economic and political problem of great dimensions. The country recorded its first experience with the disease 80

years ago. In 1928, Hoffman published an article on the large amount of *Triatoma dimidiata* found in the homes of the population of Las Choapas, Veracruz, and in 1938, the first case of Chagas disease was reported in a Mexican man from Veracruz state (although this was refuted by Luis Mazzotti). In that same year, Luis Mazzotti, M.D. described the first two cases of acute Chagas disease in Tejomulco in the Mexican state of Oaxaca. Thus began the story of this silent disease.

In 2012, a small group of 11 Mexicans infected with the disease decided to create a private, non-profit association that actively supports patients in this unfair battle. AMEPACH A.C. (Mexican Association of People Infected with Chagas Disease) works by providing daily information on its Facebook page, helping readers who are not sufficiently familiarized with or who do not have sufficient and correct information about the disease. It also holds lectures for information and prevention purposes in institutes, universities, schools of different levels, rural and urban populations, and other settings. The Association takes part in national and international congresses on Chagas disease, always staying on

top of the latest developments. Additionally, the Association has had the opportunity to participate in radio and television shows, and has given interviews to the local, national and international press. Folders and leaflets have been handed out in high risk areas promoting different activities to inform and prepare the general population.

The main goal of AMEPACH A.C. is to promote disease visibility and control in Mexico. This involves providing support to public health authorities and requesting the creation of action policies, effectively promoting prevention programs, publication of results, dissemination of new forms of treatment, and disease follow-up, in addition to funding planning and execution of research projects to turn statistical reports into actual benefits to the people infected. Therefore, we fight for full and specialized medical attention for people infected with Chagas disease. This scenario would contribute to increasing the quality of life of patients and their families, as well as enhancing the progress of the country.

In the beginning, Chagas disease was mainly found in rural areas of several Mexican states, especially Veracruz, Oaxaca and Yucatán. Today, people are diagnosed with the disease all over the country. An important factor is the number of people infected with Chagas disease in rural areas who do not speak Spanish (they speak several indigenous languages). This further hinders the support provided to them as part of their right to healthcare.

The WHO says that 800,000 people in Mexico have Chagas disease, but this is not an accurate estimate because reporting the disease is not mandatory, even though it should be considered a priority. Most diagnoses are derived from blood donated by the relatives of affected patients, upon request of the patients themselves, because there is not a prevailing culture of voluntary donation.

AMEPACH A.C. faces a challenge of humanity, solidarity and perseverance, always waiting for the political initiative of health-care institutions, their employees, and the general population to support the people infected through this silent and life-threatening battle, one that can be fought and won if everyone works together.



Patients' association from Mexico, AMEPACH, during activity to raise awareness on Mexican countryside.

PUBLIC HEALTH AND THE STRUGGLE AGAINST NEGLECTED DISEASES: CIVIL SOCIETY ACTIONS IN BRAZIL

ELOAN PINHEIRO, INDEPENDENT CONSULTANT
AND MARINA CERTO, CHAGAS PLATFORM, DNDi

Therefore, the Brazilian Social Forum for Confronting Infectious and Neglected Diseases emerged, comprising a broad collaborative network of nongovernmental organizations, social movements and activists, with the aim of exchanging experiences and working together to create agendas, recommendations, and public policies to ensure fundamental rights.

The first effective action of the Forum took place in June 2016, in Rio de Janeiro, during the annual meetings of the Chagas Platform and redeLEISH. It was preceded in 2015 by an initial statement on the right to access hepatitis C medicines. The workshop "Interfaces between Social Movements and NGOs in Facing Neglected Tropical Diseases: Prospecting Limits and Potentialities" gathered representatives of several organizations and movements for different diseases. As a result and continuation of this first activity, the movements met in the same year to formalize the creation of the Forum. Thus, its foundation took place during the XXXI Annual Meeting of Applied Research in Chagas Disease and the XIX



II Meeting of the Brazilian Social Forum to Combat Infectious and Neglected Diseases, which took place in Cuiabá, in the Chagas Leish / Medtrop 2017, gathered around 60 people.

Health is a fundamental right. However, the democratization of this right is still a challenge. The global disease picture shows serious inequalities, which are promoted by the globalization of an economic model that encourages exclusion on one hand and accumulation on the other, perpetuating cycles of neglect and vulnerability. In Brazil, much of the population depends on the Unified Health System (SUS) for free, comprehensive, universal health care. In the case of people affected by neglected diseases, the SUS is often the only alternative for access to health. These services, however, are constantly threatened by public health management and budget cutbacks. To extend and protect these rights, the efforts of an organized civil society are important, since they strengthen the engagement of patients and their associations.

With these challenges in mind, the creation of a political space with national representation was proposed, in order to collectively strengthen civil society initiatives facing infectious and neglected diseases, such as Chagas disease, leishmaniasis, viral hepatitis and leprosy.

Annual Meeting of Applied Research in Leishmaniasis (ChagasLeish 2016), held at the Congress of the Brazilian Society of Tropical Medicine (MedTrop 2016). Organizations such as Findechagas, Morhan, MBHR, NHR, ABIA, UAEM, DNDi and MSF/Doctors Without Borders participate in this network.

Decision-making is more efficient if the affected people are involved. The Forum continues strengthening established patient associations while supporting the creation of new ones. The forum is open to involvement by more people and entities. Its next annual meeting will take place in September 2018, in Recife, also in the context of ChagasLeish and Medtrop 2018. Mobilization and social organization are key to obtaining rights and bringing about transformation. Promoting engagement and dialogue is necessary, so that those affected by neglected diseases are encouraged and empowered to take action against the inequalities they face.

DOCTORS WITHOUT BORDERS CAMPAIGN PUTS PEOPLE AFFECTED BY CHAGAS DISEASE IN THE SPOTLIGHT

VITÓRIA RAMOS, DOCTORS WITHOUT BORDERS

Since early 2017, when Doctors Without Borders (MSF) closed its field projects for Chagas disease after nearly 20 years, the organization has refocused its efforts in this disease area toward advocacy. However, society and political authorities in general no longer believe in the need for action against Chagas disease. This poses a great challenge.

To reduce this false perception that Chagas is a disease of the past, MSF launched a campaign to heighten the visibility of the problem this past April 14th, on International Chagas Day.

The campaign "Having a big heart is not always good" was designed in collaboration with the Quintal Agency. It uses a play on words related to one of the characteristics of the disease (an enlarged heart), seeking to reach an audience that is completely unaware of this reality. Through social networks and print media, the campaign promotes the website chagas.msf.org, which contains stories of affected people.

MSF invites social network users to share the voices of these people and show that Chagas is a key issue in our society, humanizing the debate and highlighting that there is still much to do on behalf of affected people, starting with the expansion of diagnosis and comprehensive treatment through primary health care.

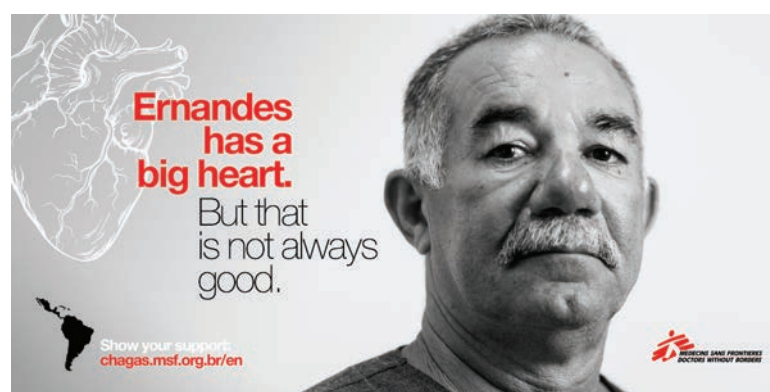
Antonio Gomes's story is one of those highlighted by the campaign: "There are three cases in my family. I lost a 22-year-old sister due to a heart condition. I do not know what the problem was, whether she was already affected by Chagas disease. Two brothers are under treatment along with me. I used to do periodic blood tests every year, they never showed any problem at all. Then, I went to donate blood and they informed me that my blood could not be donated, because I had Chagas disease. After a severe arrhythmia, I had an ICD (Implantable Cardioverter Defibrillator) implanted. I'm still under treatment."

Sadly, Antonio's story describes the classic situation of Chagas disease: almost the entire family is affected – they lost a family member still at a young age due to

sudden death and Antonio only found out about his condition by coincidence (blood donation). This reality will only be changed with a dramatic shift in political priorities, which also depends on social mobilization.

MSF invites you to share these stories, which are available on the campaign website and on our social networks.

The campaign is supported by the RioChagas Association, the Association of Victims of Chagas Disease and Heart Failure of Pernambuco, Fiocruz, DNDi, the Chagas Coalition, the Brazilian Forum for the Treatment of Infectious and Neglected Diseases and the World Heart Federation.



THE IMPACT OF *TRYPANOSOMA CRUZI* GENETIC DIVERSITY ON PATHOGENESIS, SERODIAGNOSIS AND DRUG DISCOVERY FOR CHAGAS DISEASE

BIANCA ZINGALES, BIOCHEMISTRY DEPARTMENT
AND UNIVERSIDADE DE SÃO PAULO LABORATORY
OF MOLECULAR BIOLOGY AND TRYPANOSOMATIDS

A defining characteristic of *Trypanosoma cruzi* is its high genetic and phenotypic intraspecies diversity. Based on different molecular markers, *T. cruzi* has been divided into seven genetic lineages or discrete typing units (DTUs), TcI-TcVI and Tcbat. The overall distribution of about 6,400 DTUs, including their geographic origin and association with human hosts, wild reservoirs and vectors is available. DTUs TcI, TcII, TcV and TcVI are the main agents of human disease with uneven distribution in different regions of Latin America. There is no evidence indicating an association between a particular DTU and the clinical manifestations of Chagas disease, strongly suggesting that the interplay between parasite and host genetics has an important role in the definition of pathogenesis.

As a consequence of the differential geographic distribution of DTUs in humans and differences in the immune response of affected individuals, regional variations in the sensitivity of the available serological tests have been documented. Efforts to establish a gold standard for the serodiagnosis of Chagas disease must take into account these variables, and the sensitivity of new reagents should be assessed against a panel of sera representative of patients from all countries endemic for *T. cruzi*.

There is no doubt that new, effective, safe and affordable drugs for Chagas disease are urgently needed, since the two available drugs, benznidazole (BZ) and nifurtimox (NF), have frequent adverse effects and their cure rates vary in different phases

of the disease and geographic regions. Regional therapeutic failures have been attributed, at least in part, to characteristics of the circulating strains. In fact, naturally resistant strains to both drugs have been evidenced in murine models and in vitro. A phenotypic assay, targeted to intracellular amastigotes of *T. cruzi* stocks representing six DTUs concluded that NF and BZ have broad efficacy against all stocks tested, while ergosterol biosynthesis inhibitors showed variable activity that was both compound and strain-specific.

Based on this experience, recommendations for the discovery of new drug candidates for high throughput screening have been issued. Priority should be given to parasites belonging to DTUs, more often associated with human infection. Screening should be performed with intracellular amastigotes, the prevalent parasite stage in the chronic phase. It is evident that the assessment of in vitro drug activity against members of different DTUs does not guarantee drug success in humans; however, differing impacts of drug activity between strains could indicate the likelihood of failure.

CHAGAS DISEASE DIAGNOSIS – THE MISSING LINK IN ASSURING ACCESS TO TREATMENT

ALBERT PICADO, FOUNDATION FOR INNOVATIVE
DIAGNOSTICS (FIND)

The statement – “less than 1% of Chagas disease patients receive any treatment” – is widely used by the Chagas disease community to indicate grossly deficient access to treatment for those suffering from the disease. It would be more accurate to assert “less than 1% of people infected with Chagas disease have access to diagnosis and treatment”. This stresses that lack of access to diagnosis is one of the main barriers to treatment. Several tests already exist for both acute and chronic Chagas disease yet their performance is often suboptimal, requiring specialized laboratory equipment or expertise. These factors are barriers to acquiring accurate and timely diagnosis and treatment.

In a recent survey, Chagas disease experts in Latin America indicated that developing point-of-care tests for chronic Chagas disease and congenital infections remains a priority. FIND has been mainly working on

the development and evaluation of tools to test babies, whose mothers are infected with Chagas disease, at the site of birth. Diagnostic solutions should be implemented in endemic and non-endemic country health systems to ensure that congenital Chagas disease is identified early and treated promptly, as this has well documented clinical and epidemiological benefits. In contrast to Chagas disease in adults, children under 1 year of age have a 100% cure rate and show high tolerance for antitrypanosomal treatment. In addition, treated children will not develop the cardiac and/or gastrointestinal forms of Chagas disease that affects adults, and female patients who grow up without Chagas disease will not transmit the infection to their offspring.

FIND, together with partners, has developed a loop-mediated isothermal amplification (LAMP) kit to detect *T. cruzi* DNA in human blood. Results are visible to the naked eye (Figure). The LAMP kit is easy to use and has shown good performance in studies conducted in Argentina and Spain. The kit is currently undergoing field evaluation in Argentina and Bolivia. If the expected results are confirmed, the *T. cruzi* LAMP kit could be implemented as a diagnostic tool for congenital Chagas disease in endemic and non-endemic countries, bringing patients closer to rapid treatment than ever before.

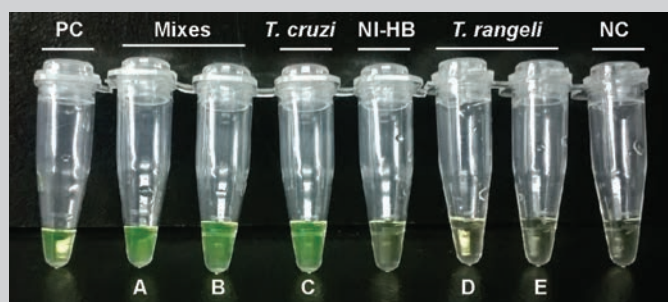
ADVANCES IN MOLECULAR DIAGNOSIS OF CONGENITAL CHAGAS DISEASE

ROCÍO RIVERO, NATIONAL INSTITUTE OF PARASITOLOGY
"DR. MARIO FATALA CHABEN"

Vertical transmission of Chagas disease represents the primary source of new cases in countries where the vector is thought to be controlled. Timely diagnosis of congenital infection is crucial to prevent, treat and control the disease. Due to transplacental transmission of maternal immunoglobulins, detection of the infection in individuals younger than 10 months old is confirmed after the detection of *Trypanosoma cruzi*. Direct and conventional parasitological methods have variable sensitivity, causing 55% of infected children to be misdiagnosed.

Molecular techniques have amplified the DNA sequence of infectious agents, thus increasing sensitivity in detecting pathogens. Research shows that detection of *T. cruzi* DNA by polymerase chain reaction (PCR) can speed up diagnosis of congenital infection. However, this technique has not yet been validated in healthcare centers, and no simplified test kits have been developed for routine diagnosis. For this reason, PCR is not currently employed in clinical settings in several affected countries, and its use is limited to reference laboratories or large healthcare centers with complex equipment and qualified personnel.

Isothermal DNA amplification techniques, such as LAMP (Loop-mediated isothermal amplification), can be employed at a constant temperature using a thermal bath only. The result is available in one hour and it is directly read by the observation of colorimetric changes. Although the LAMP technique has provided a test for the detection of *T. cruzi* in members of the *Triatominae* family, such diagnosis is not yet applicable to human Chagas disease. In 2017, two tests^{1,2} reported LAMP analytical validation for the detection of human infection by *T. cruzi*; one of these tests amplifies a gene region of the 18S ribosomal subunit and, the other, the satellite DNA sequences of the parasite. The analytical sensitivity of these tests ranges from 0.01 Eq/par/ml to 50 par/ml. However, the study reporting the greatest sensitivity derives from a commercial kit that is still not available for sale. Both investigations performed a proof of concept study for using the test to diagnose congenital Chagas disease (N=5 positive newborns¹; N=27: 20 negative and 7 positive newborns², respectively). In view of their



LAMP test, showing test results of different samples. PC = positive control, NC = negative control (Besuschio and al. <https://doi.org/10.1371/journal.pntd.0005779>).

affordability and convenience, isothermal molecular tests may replace conventional parasitological methods for the diagnosis of congenital Chagas disease in the near future. Multicenter, prospective studies are still needed, conducted with a larger number of patients, to determine the performance of these tests, so that such techniques can be implemented in healthcare centers and then provide timely access to diagnosis and treatment.

REFERENCES

¹Besuschio SA, Murcia L, Benatar AF et al. Analytical sensitivity and specificity of a loop-mediated isothermal amplification (LAMP) kit prototype for detection of *Trypanosoma cruzi* DNA in human blood samples. 2017;1-18. doi: 10.1371/journal.pntd.0005779

²Rivero R, Bisio M, Velázquez EB, et al. Rapid detection of *Trypanosoma cruzi* by colorimetric loop-mediated isothermal amplification (LAMP): A potential novel tool for the detection of congenital Chagas infection. *Diagnostic Microbiol Infect Dis.* 2017;89(1):2014-2016. doi:10.1016/j.diagmicrobio.2017.06.012.

UPDATE ON DNDi CLINICAL STUDIES: BENDITA AND FEXI 012

FABIANA BARREIRA AND BETHANIA BLUM, DNDi LATIN AMERICA

The importance of etiologic treatment for patients with chronic Chagas disease, even with no cardiac or digestive symptoms, has been firmly established in the last decades. Regarding effectiveness, in 12-month studies, it is known that 8 out of 10 patients who complete etiologic treatment with benznidazole (BZN) eliminate the presence of the parasite in blood. However, 20% of patients do not finish treatment due to adverse events, such as skin problems, anxiety, and peripheral neuropathy.

Considering this scenario, DNDi looks for new medications or new treatment plans that reduce the number of treatment interruptions due to adverse events. Ideally, we aim to improve safety and also increase therapeutic response.

BENDITA, a double-blinded, placebo-controlled study is being conducted in Bolivia and aims at evaluating the application of different benznidazole therapy (BZN) regimens in 210 patients: as a monotherapy in the standard dose (300 mg/day) for 8, 4 and 2 weeks and in low doses (150 mg/day) for 4 weeks; and as a combination therapy pairing BZN in low doses (150 mg/day) for 4 weeks or intermittently (300 mg once a week for 8 weeks) with E1224. The latter, a prodrug of the

antifungal ravuconazole proved safe in Phase 2 clinical studies, but only showed transitory efficacy against the parasite when used as monotherapy. The primary endpoint will be evaluated at 6 and 12 months follow-up, which will be completed in July, 2018. It is expected that the first results will be released in early 2019.

The FEXI 012 study analyzes the effects of fexinidazole in 45 patients from Spain. Fexinidazole is a medicine under development for sleeping sickness. It was also evaluated by DNDi in a proof-of-concept study in Bolivia in 2014 for treatment of patients with Chagas disease. This study was suspended because of safety concerns, and only 47 of the planned 140 subjects were recruited. However, data analysis showed a high efficacy rate after 12 months. All patients who received the treatment, even in the lower dose groups and with incomplete treatments (less than 3 days), eliminated the parasite after 12 months, without relapse. The current FEXI 012 study evaluates fexinidazole in short schedules of 3, 7 and 10 days. The primary endpoint will be at 4 months, with a follow-up of 12 months. The study commenced in November 2017 and seeks to complete recruitment in June, 2018. Analysis of primary data should be complete within the current year. Results from both BENDITA and FEXI 012 have the potential to greatly improve our understanding of the necessary pathways toward a safer, more effective treatment for Chagas disease.

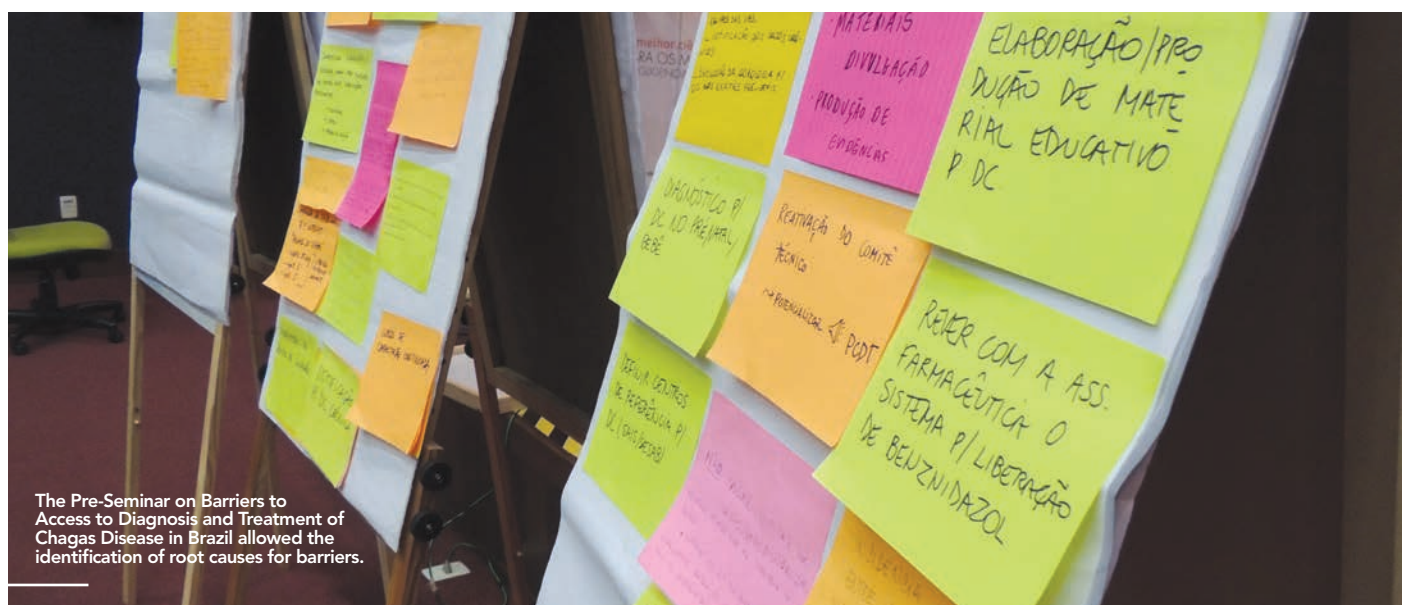


CHAGAS DISEASE IN BRAZIL: COMPREHENSIVE ACTIONS TO AMPLIFY ACCESS TO DIAGNOSIS AND TREATMENT

LUCIANA RIBEIRO GARZONI, VICE PRESIDENCY OF ENVIRONMENT,
HEALTH CARE AND HEALTH PROMOTION - FIOCRUZ

of Chagas disease. This year, Fiocruz will also carry out a training course in Piauí for community health workers, with educational activities to help people in the community identify vectors.

Through integration with partner institutions around a larger strategy, these actions can be strengthened and expanded to other parts of the country, creating a potential regional model. Thus, Fiocruz and DNDi initiated a partnership for development of a project for access to diagnosis and treatment of Chagas Disease in Brazil, which will seek to eliminate access barriers and strengthen training of Unified Health System (SUS) health professionals (including doctors, nurses and health agents), as well as undertaking health promotion activities. This effort is only possible with the initiative and involvement of local



The Pre-Seminar on Barriers to Access to Diagnosis and Treatment of Chagas Disease in Brazil allowed the identification of root causes for barriers.

When we talk about neglected diseases, we also speak of neglected populations, and consequently, inequities in health. We talk about social determinants of health, which involve social inequalities. Chagas disease predominantly affects neglected populations and, therefore, does not arouse the interest of the pharmaceutical industry to support research for new drugs. The World Health Organization estimates that approximately seven million people are infected by the parasite worldwide. The disease is endemic in Latin America, and in Brazil there are about three million infected people – however, only acute cases are mandatorily reported in Brazil.

Aside from acute cases, the identification of chronic cases of the disease is extremely important, and fundamental to ensuring access to diagnosis and treatment of Chagas disease. With this in mind, in 2018 Fiocruz will conduct a training course for health professionals from the state of Pará, regarding the diagnosis of acute and chronic cases

actors and national partners, such as authorities and health secretariats at the state and municipal levels, technical experts from the Ministry of Health, universities, associations of people affected by the disease, and MSF/Doctors Without Borders.

A first mutual step towards a situational diagnosis around access needs in Brazil was held on May 14th and 15th, 2018, in Rio de Janeiro. The Pre-Seminar on Access Barriers for Chagas Disease in Brazil was organized through collaboration between Fiocruz, DNDi and the Chagas Platform, with the participation of managers and representatives of state health secretariats, as well as representatives of the Ministry of Health (SVS, SAS and SGEP). Its main objective was to identify the main barriers to access to treatment and diagnosis of Chagas disease through the SUS. Thus, we began a new phase of coordinated efforts among academia, civil society and leaders to achieve greater political influence around access to healthcare for Chagas Disease.

COMMUNICATION PROCESSES ENABLE TIMELY DIAGNOSIS AND TREATMENT OF CHAGAS DISEASE

ELIZABETH PEREZ, DND/LATIN AMERICA

“They told me there is no treatment available for adults; that only death awaits us, and nothing more”, said Emerita Samudio, 33 years old, a mother of two who is also a leader in Tamurá, a community in Nunchía.

Interviews conducted in five selected municipalities in the departments of Arauca, Boyacá, Casanare, and Santander in eastern Colombia show many feel the same about Chagas disease as Emerita. In these communities, a pilot project, ‘Eliminating access barriers to Chagas disease diagnosis and treatment,’ is being conducted as part of a collaboration between the Ministry of Health and Social Protection, the National Health Institute, departmental and municipal health authorities, and Drugs for Neglected Diseases Initiative (DNDi).

People living in these areas usually visit a doctor only when they are very sick. During visits to the clinics, they have often been told that Chagas disease cannot be treated in adults;

this message is reinforced by public health campaigns which only treat children. They thus believe they are no longer entitled to treatment when they turn 18 years old. And, if they need medication, they either have to trust that they will be lucky enough to find it at the local clinic, or spend large sums of money to obtain it elsewhere.

Added to these and other fears and doubts, are the rejection and discrimination that many suffer due to a common belief that Chagas disease is contagious. Many have heard that “treatment is worse than the disease,” or prefer not to find out they have Chagas disease out of fear that “knowing” will cause the disease to progress more rapidly. Due to the limited information available, many perceive that as long as they are not in pain, they do not need treatment.

The ‘Eliminating access barriers’ project has been constructed based on the views held by Chagas disease patients themselves. The project conducted qualitative interviews with community members, healthcare personnel, and public health experts to learn more about prevailing attitudes and perceptions regarding the disease. The purpose of the study was to create an Information, Education, and Communication (IEC) plan to inform community members about the importance and availability (for adults as well as children) of timely diagnosis and treatment, and to raise awareness among providers of current treatment guidelines.

Currently, communication materials targeting different audiences, including both patients and healthcare personnel, are being completed and will be validated with technical and communication teams of participating institutions. Subsequently, IEC materials and key messages (see the text box) will be tested and validated directly by target audiences, including communities and healthcare professionals.

Support materials, such as the patient’s card, as well as materials for community leaders and doctors accompanies the implementation of the access project for Chagas in Colombia.



**“ Don't be afraid of Chagas.
Understand the disease and confront it.
Early diagnosis and treatment prevents
irreparable damage in the future.
Go to your nearest health center and ask
for a free appointment.”**

As part of the process, workshops will be conducted with communities, leaders, vector-borne disease teams, and health promotion and disease prevention teams so that they, together with patients, can begin to overcome some of the existing barriers, and spread the word that Chagas disease can be treated, even in adults. The goal is to strengthen timely diagnosis and treatment, first in the pilot communities, and then throughout the country.

EDUCATING PEOPLE ABOUT CHAGAS DISEASE IN HEALTH SCIENCES PROGRAMS IS AN ESSENTIAL COMPONENT OF PREVENTING, DIAGNOSING AND TREATING THE DISEASE

EDGARDO MORETTI AND BEATRIZ BASSO, NATIONAL UNIVERSITY
OF CÓRDOBA, NATIONAL CHAGAS DISEASE PROGRAM; CHAGAS
LABORATORY, IMBECU, CCT - CONICET MENDOZA, ARGENTINA

Chagas disease is traditionally managed by the health system, which is logical. But for us, it is not enough. This health approach was successful in reducing the risks of vector transmission, transfusion transmission and, in part, congenital transmission. However, it was difficult to make further progress due to the lack of knowledge of health professionals regarding basic aspects of the disease.

In the Department of Medical Sciences at the National University of Córdoba (UNC), we detected this problem in Elective, Interdisciplinary and Integrative programs for advanced students, taught by B. Basso, from 2003 to 2009. The lack of knowledge of the students was evident. As a representative sample, we transcribed the reflections of a student, in an

anonymous survey, after the program was concluded: “Actually, when I first started studying, I did not have high expectations. I never thought there was still so much to learn about this disease, which is so present in society.”

In order to verify if this low awareness was widespread in Argentina, we organized, together with UNC, the “First Actions toward Chagas Disease Awareness in Health Sciences Programs”, in Córdoba in 2008, with the support of the PAHO/WHO Regional Department, headquartered in Montevideo. Professors of Medicine and Biochemistry from more than 40 Argentinian colleges and universities participated, in addition to specially invited national and foreign experts. In light of the importance of these results, we have decided to periodically continue these Actions. Three UNC Actions have been organized so far, at UNC, the National University of Rosario, and the National University of Litoral. Other disciplines of health and social sciences were involved. Minimum contents were prepared for each program, along with presentations of advances in each academic unit, and other regionally important pathologies were included. This year, the Actions will take place at the UNC and will coincide with the 100th Anniversary of University Reform.

Parallel to these events, the PAHO Regional Department organized meetings during scientific and public health conferences, such as INCOSUR (Lima, Peru, 2009; Recife, Brazil, 2009; Fortaleza, Brazil, 2014). A workshop on Teaching Chagas Disease at the Chagas Platform Meeting was held (Rio de Janeiro, 2016), with the participation of university professors from most Latin American countries, as well as from the United States and Spain.

Documents currently available to those interested were prepared at each meeting. Perhaps we can summarize the results as follows:

The lack of knowledge of Health Professionals regarding Chagas Disease is a risk factor, since it impairs prevention, makes diagnosis difficult and frustrates the possibilities of adequate therapy.

All those involved are responsible for changing this scenario, aiming at benefitting millions of people in situations of vulnerability.

MULTIDIMENSIONAL BARRIERS TO ACCESS TO TREATMENT FOR CHAGAS DISEASE

COLIN FORSYTH, DNDi



Doris faces several difficulties to have treatment.

Doris, a mother of six, lives in a village in the department of Casanare, Colombia. She recently tested positive for Chagas disease and would like to get treated, but has confronted several barriers. She was told she needs to take multiple tests before starting treatment to ensure she can safely tolerate the medication (clinical barrier). However, she has to go to two different clinics for these tests: one is a 90-minute drive from her home, and the other is even further. And the phone number she was given to make appointments has not worked. (systemic

barriers). Doris's husband is a farmer and transportation to the clinics, which can cost up to US\$20 per trip, is a significant economic burden for their family. For this reason, she has not been able to get the tests she needs to start treatment. (structural barrier). "It stresses me that this is happening, that the disease is advancing and I haven't been able to do anything," Doris says. She has still not given up hope of obtaining treatment, but she can't help feeling fearful, because she knows her heart is not strong. (psychosocial barrier).

Published by the Drugs for Neglected Diseases initiative (DNDi) and supported by the National Economic and Social Development Bank (BNDES - Brazil) and the Oswaldo Cruz Foundation (FIOCRUZ)

DNDi Latin America
Rua São José 70, sala 601
Rio de Janeiro - RJ, Brasil
20010-020
Tel: +55 21 2529-0426
www.dndi.org

DNDi Geneva
15 Chemin Louis-Dunant
1202 Geneva Switzerland
Tel: +41 22 906 9230
www.dndi.org

EDITORIAL
BOARD:
Colin Forsyth,
Julia Alapenha
and Marina Certo

ORGANIZATION
AND
PRODUCTION:
Julia Alapenha,
Karoline Belo
and Marina Certo

PHOTOS:
P1: Felipe Abondano/DNDi,
P3: Fabio Nascimento/DNDi,
P4: Fernando Martin,
P5: Médicos Sem Fronteiras,
P7: Albert Picado/FIND,
P8: Fabio Nascimento/DNDi,
P9: Julia Alapenha/DNDi,
P11: Felipe Abondano
and P12: Felipe Abondano

TRANSLATIONS:
Prime Translations

REVIEW:
Andrea Marchiol,
Colin Forsyth,
Karoline Belo,
Marcela Dobarro
and Marina Certo

GRAPHIC DESIGN:
Bruno Silva

DNDi

Drugs for Neglected Diseases *initiative*
Iniciativa Medicamentos para Enfermedades Olvidadas
Iniciativa Medicamentos para Doenças Negligenciadas

SUPPORT:

