

## Letter

# Old Paradigms and New Challenges motto of ChagasLeish 2017: a speech at the opening ceremony of MedTrop 2017 and ChagasLeish 2017

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### Dear Editor:

Overview of valuable discussions held over time at the Meetings of Applied Research on Chagas Disease and Leishmaniasis was presented in the opening session in 2017. We present here the speech translated from Portuguese.

### Opening speech

We, active participants of the Meetings of Applied Research on Chagas disease and Leishmaniasis, are passionate about the study of these diseases, their causative parasites, infection processes, and issues in prevention and treatment.

Today, we begin the XXXII Meeting of Applied Research on Chagas Disease and the XX Meeting of Applied Research in Leishmaniasis (ChagasLeish 2017). In the next three days, we will engage in discussions and activities, which would provide a unique opportunity for young people and new participants to learn and fall in love with the research in these areas.

As highlighted in the motto of ChagasLeish 2017, we have Old Paradigms, which need to be reviewed under the lens of new approaches, and New Challenges.

In the area of Chagas' disease, the vector transmission of *Trypanosoma cruzi* has been well-controlled but other modes of transmission such as oral and transfusional still occur. Vector transmission control succeeded as a result of discussions based on researches developed by participants of the Meeting of Applied Research in Chagas Disease over three decades. Further

studies involving Latin American collaborators evolved to propose assays to implement blood donor screening measures to eliminate or reduce *Trypanosoma cruzi* transmission through blood derivatives. However the infection persists throughout life in previously infected individuals. Thus millions of those individuals may develop chronic manifestations of Chagas disease that require therapeutic intervention, not to mention the impact on their labor capacity, social integration, and quality of life. These infected individuals need or would need medical care of medium to high complexity that can not be adequately handled by the healthcare system that we presently have<sup>1</sup>. At this meeting, their accessibility was discussed with representatives from various Latin American countries and participation of the Pan American Health Organization (PAHO), World Health Organization (WHO), and Drugs for Neglected Diseases initiative (DNDi). In addition to Chagas disease and Leishmaniasis, today, the II Forum for Challenging Infectious and Neglected Diseases took place with broad participation of organized social sectors concerning infectious diseases with focus on accessibility.

Turning our attention now to leishmaniasis, there are also Paradigms, which need to be reviewed, and New Challenges.

The Meeting of Applied Research on Leishmaniasis started some years after the Meetings of Applied Research on Chagas disease and it has contributed to the care of patients with leishmaniasis. Subsequently, relevant information was published in manuals aimed at clinical and laboratory diagnosis and treatment of leishmaniasis. HIV–*Leishmania* co-infection and diagnostic and treatment guidelines were also discussed. Selection of diagnostic products and their production and use were also debated at these meetings, and later, incorporated in the routine diagnosis of human leishmaniasis and *Leishmania infantum* infection in dogs.

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**Received** 7 February 2019

**Accepted** 4 June 2019

Regarding *Leishmania* transmission, control and handling measures were proposed at these meetings, and research proposals were implemented with support from the Ministry of Health. Regarding *Leishmania infantum* transmission, which causes visceral leishmaniasis, a control measure has been the elimination of infected dogs, but the New Challenge is the treatment of these animals that is presently allowed requiring new evaluation of its impact on intensity of transmission and the need of new control measures. Regarding the transmission vectors, observing the expansion of diseases to previously indomitable urban areas in conjunction with environmental changes, species other than the phlebotomine species classically associated with transmission have to be considered which need to be investigated for vector competence. Additionally, for the control programs, a great challenge is the choice of measure, considering the diversity of behavior and susceptibility of each species of sand flies to transmit different *Leishmania* species.

The discontinuity of Montenegro's antigen production for anti-*Leishmania* delayed-type hypersensitivity test precludes the definitive diagnosis of tegumentary leishmaniasis, mainly in the mucosal form of the disease. This happens now in the 21<sup>st</sup> century, and to make matters worse, these patients are treated with drugs, such as pentavalent antimonials, that are highly toxic with serious side effects. For the diagnosis and treatment of patients with HIV-*Leishmania* coinfection, the measures used in leishmaniasis without coinfection do not have the same efficacy.

Cutaneous leishmaniasis lesions do not usually are severe but compromise the social life and working capacity of the patients, while visceral leishmaniasis shows high mortality<sup>1</sup>. It is essential the understanding of the pathogenesis to improve the treatment or prevent the severe outcomes. Despite the studies, we still do not see results that make significant differences regarding development of the disease. Severity parameters have been defined, and mechanisms of the lesion development have been studied, but focus has been mainly on the immune system. However, the parasite survives within the host despite the active immune response, by developing survival strategies within the host's biological and physiological environment. These strategies have not been well-understood by the researchers.

For both Chagas disease and leishmaniasis, we need to analyze, without sectoring in different biological systems or preconception, the mechanism of the infectious process in detail. Only then actual advancements can be expected where the so-called translational researches are needed. In this meeting, particularly in the round tables on pathogenesis of both Chagas disease and visceral leishmaniasis, coordinated by professors Walderez Ornelas Dutra and Alda Maria da Cruz we discuss the mechanisms beyond the immune response.

Meetings of Applied Research on Chagas Disease and Leishmaniasis have promoted the translational studies. In my first participation in these meetings about 15 years ago and in a workshop by professor Maria Aparecida Shikanai Yasuda, I noticed a positive difference compared with others of scientific/academic nature. In these meetings, there is participation of

service sectors and government institutions that organize and dictate health policies and execute control measures, along with professionals involved in the care of patients, sectors that perform laboratory services and validate assays, people involved in the basic research as well as in the development of tests, in sum people of different specificities and expertise. In these meetings, we have the opportunity to discuss the needs arising from different segments concerned on the chain of transmission and control, on healthcare and to confront with new knowledge generated in research institutions around the proposed topics.

At the XXXII Meeting of Applied Research on Chagas Disease and the XX Meeting of Applied Research on Leishmaniasis, which begins today, we aim to:

- Compose the current sketch of the epidemiological situation, transmission, patient care, diagnostic approaches, difficulties in handling, treatment and prevention;
- Be informed on the advancement in research in these areas;
- Identify the researches with results to be considered for application in health care and public health, to transmit to professionals working in the area and to make suggestions to government agencies in the development of public policies;
- Propose areas for research or continuation of studies to search for proposals and solutions in the control, assistance to patients including guidance of therapeutic measures.

We finish inviting everyone to participate and act in this stage that is launched. Come and participate in your activities and fall in love with these areas of research.

Coordinator of ChagasLeish 2017

## ACKNOWLEDGMENT

I thank the Brazilian Society of Tropical Medicine for providing me the opportunity to coordinate with ChagasLeish 2017.

### Conflict of Interest

The author has no conflict of interest to declare.

### Financial Support

Conselho Nacional de Desenvolvimento Científico e Tecnológico (research fellowship to HG) and Laboratório de Investigação Médica, Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo.

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