

LETTER TO THE EDITOR

São Paulo, May 13, 2010

ORIGIN OF THE “Y STRAIN” OF *Trypanosoma cruzi*

Dear Sir

Trypanosoma cruzi is the protozoan causal agent of Chagas disease, an important endemic parasite in several Latin American countries. In many studies conducted on this disease, this microorganism is commonly used to obtain new knowledge. It can be maintained in laboratories through culture in artificial media or in susceptible animals. It presents variable aggressivity and a highly virulent form has been isolated, denominated the “Y strain”. It is often used in investigations because it possesses this particular trait.

I am well acquainted with much of the history concerning the “Y strain”. It seems appropriate to tell it, since the strain is frequently used and mentioned, but few of us know its origin, including many intensively active researchers.

In 1953, I was a resident physician at the Division of Infectious and Parasitic Diseases (*Divisão de Moléstias Infeciosas e Parasitárias*) of the Clinics Hospital of São Paulo (*Hospital das Clínicas de São Paulo*) and during my activities I admitted a Japanese woman or one of Japanese descent. She was sick and it was important to establish a diagnosis, with fever as the dominant manifestation. The woman asked that her seven-month-old daughter be permitted to stay with her and the request was granted. Both had originated from a farm located in the rural area of Marília in the State of São Paulo.

Diagnosis was achieved rapidly and recognized as Chagas disease in its acute phase. Concomitantly, we perceived that the child was also feverish and she was attended. It was not long before it was clear that she, like her mother, had Chagas disease, also in the initial period, when the quantity of parasites in the blood is usually large.

The *Trypanosoma cruzi* isolated from these patients showed peculiarities that were carefully verified in the Department of Parasitology of the São Paulo School of Medicine (*Departamento de Parasitologia da Faculdade de Medicina de São Paulo*). Further studies determined marked mortality among inoculated animals; thus, proving the highly expressive virulence of the strain. Due to this trait, the protozoan in question was the target of special characterization. It received the designation of “Y” strain from the first letter of the young patient’s name.

The number of experimental scientific studies based on the “Y strain” is enormous, because its behavior helps to achieve almost irrefutable conclusions. As an example, I can recall studies that evaluated the efficacy of pharmaceuticals in treatment protocols.

The subject has a second part, which I also participated in.

My dear friend and colleague, Professor Rubens Campos decided to go to Marília. The home address, a farm, was noted in the hospital medical records. He was successful, since the family still lived on the property. He encountered the girl, aged 25 years-old. He explained the reason for his visit, managed to get her to understand and, in the spirit of cooperation, she promised to go to São Paulo. She made two requests: she would submit to exams from 8 am to the end of the afternoon; and, since she was engaged, her future husband could not know the underlying medical situation. Regarding Chagas disease, the recommended, conventional treatment had been followed. The results: happily, everything was normal. In summary, after 25 years inside the human organism, the “Y strain” had caused no manifestations or disorders, despite the virulence mentioned above.

The parasite recovered from the young woman was forwarded to the Laboratory of Protozoology of the São Paulo Institute of Tropical Medicine (*Laboratório de Protozoologia do Instituto de Medicina Tropical de São Paulo*), to verify its behavior in animals over a long time period; however, the strain was eventually lost.

The “Y strain” appears in innumerable scientific texts concerning Chagas disease, although even researchers that use it do not know the specific facts of its origin.

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