

Specialists hope to obtain vaccine against Chagas disease in less than three years

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Trypanosoma cruzi

Mexican and American researchers are working on developing a vaccine to stop Chagas disease, which is expected to be available for the population within the next three years.

Involved in the scientific work are the Baylor College Medicine, the Center for Research and Advanced Studies, Autonomous University of Yucatán, the laboratory Birmex and the Sabin Vaccine Institute; with

funding from the Carlos Slim Health Institute.

So far, the drug that has shown the best results against Chagas disease is benznidazole. "When administered in newly infected people, it has a 60 percent effectiveness at stopping the progression of the disease. But it often manifests certain side effects that make the patient leave the treatment," says Maria Elena Bottazzi from Baylor College Medicine, who led the the therapeutic vaccine project, so called because it is still in an experimental phase.

"When we hear the word 'vaccine,' we relate it to prevention—in this case, prevention of cardiac complications. But this one has demonstrated better tolerance, efficiency time and can be used in conjunction with benznidazole," said the American researcher.

Chagas disease is also called 'the disease of the poor,' as it mainly affects the lower-income population in rural areas. It is caused by the parasite *Trypanosoma cruzi* and transmitted by a blood transfusion or by the bite of the so called "kissing bug," *Triatoma infestans*.

If the condition is not detected during the first two months, or temporal phase, it passes to a chronic phase, in which the parasites move through the bloodstream into the heart and the digestive system tissues, which will gradually degrade.

Its symptoms can range from dizziness and digestive problems to abdominal pain, palpitations and difficulty swallowing; over time, cardiac failure will occur by deformation of the myocardium, and in severe cases, the abnormality of heart rhythm could cause sudden death.



Triatominae, also known as kissing bugs

According to Doctors without Borders in Latin America, 8 million people currently have Chagas disease and 25 million are at risk of infection, of which 30 percent will develop heart problems; in Mexico it affects 1.1 million people.

The disease can be treated with medication; however, less than one percent of those infected have access to it, plus it requires great care available in its administration.



Triatominae, also known as kissing bugs

Maria Elena Bottazzi said that the therapeutic vaccine has been tested in laboratory rodents and dogs infected with *T. cruzi*. It was observed that the disease stopped in 80 percent of subjects and, when administered preemptively, protected against the parasite in the bloodstream.

The researcher at the Baylor College of Medicine emphasized that its effectiveness is being analyzed in a control group of infected human patients in Mexico, and it is expected that in the next three years, a [vaccine](#) will be finalized and made available to the population.

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