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Molecular epidemiology of chagas disease in Venezuela

Hernan Jose Carrasco
Universidad Central de Venezuela, Venezuela

Abstract

Chagas disease is endemic of the American continent with a wide distribution from the South of United States to North of Argentina. The etiological agent is the parasitic protozoan *Trypanosoma cruzi* which is transmitted by blood sucking bug vectors, belonging to the order Hemiptera. The parasite belong to the order Kinetoplastida, genera *Trypanosoma*, specie *cruzi*, and according to the last consensus meeting in 2009, the nomenclature for the intraspecific identification of strains, it is divided in six groups or discrete typing units (DTU), also name genotypes, from TcI to TcVI. There is a particular distribution of DTUs in Latin American Countries where genotypes TcII, TcV and TcVI are found infecting humans at the Southern cone, whereas TcI and TcIV are the genotypes prevalent from the Amazon basin to Central America. In Venezuela, we have identified TcI and TcIV genotypes infecting humans all across the country, where 79% of them were infected with TcI. The clinical outcome of people infected with TcI were more severe than those infected with TcIV, suggesting that *T. cruzi* I strains are in general more pathogenic than TcIV. We also found triatomine bugs and wild mammals naturally infected with TcIII but not human cases infected with this genotype. *T. cruzi* strains belonging to TcI genotype shows to be more virulent and pathogenic in laboratory reared mice in correlation with the clinical manifestation of chagasic patients.

Biography

Hernan Carrasco has completed his M.Sc. in 1993 and his Ph.D. in 1997 at the London School of Hygiene & Tropical Medicine, London, UK. Since 1997 is the Head of the Laboratory of Molecular Biology of Protozoan at the Institute of Tropical Medicine, Faculty of Medicine, Universidad Central de Venezuela. Since 2006 he has reached the Titular Professor level and has conducted several National and International Research Project. He is reviewer of several Scientific Journals and part of the Editor Board of International Journals. He has published more than 30 papers in well known and prestigious Journal.