

TRANSMISSÃO

Mecanismos principais e atípicos de transmissão da Doença de Chagas (Eliane Dias Gontijo, Silvana Eloí Santos)

- STORINO R, JÖRG ME 1994. Vías de infección y aspectos clínicos. In R Storino, J Milei (orgs.), Enfermedad de Chagas, Bayma, Buenos Aires
- SILVEIRA AC, REZENDE DF. Epidemiologia e Controle da Transmissão Vetorial da Doença de Chagas no Brasil. Revista da Sociedade Brasileira de Medicina Tropical 27, sup III: 11-22, 1994.
- DIAS JCP, COURA JR. Clínica e Terapêutica da Doença de Chagas: uma abordagem prática para o clínico geral. Epidemiologia. Editora Fiocruz, 1997.
- SILVEIRA AC. O Controle da Doença de Chagas nos Países do Cone Sul da América: História de uma iniciativa internacional 1991-2001. In: Silveira AC (org) O Controle da Doença de Chagas nos Países do Cone Sul da América: História de uma iniciativa internacional 1991-2001. Organização Pan-Americana da Saúde, Brasília, p.15-43, 2002.
- FERREIRA ILM, SILVA TPT. Carta ao Editor. Eliminação da transmissão da doença de Chagas pelo Triatoma infestans no Brasil: um fato histórico. Revista da Sociedade Brasileira de Medicina Tropical 39(5):507-509, set-out, 2006
- DIAS J. C. P. Doença de Chagas transfusional. Rev. Soc. Bras. Med Trop. Brasília. 1986. v.19, n.2, p. 101-102.
- SCHMUNIS G. A. Trypanosoma cruzi, the etiologic agent of Chagas disease: status in the blood supply un endemic and nonendemic countries. Transfusion.1991. v.31, n.6, p.547-557.
- CDC. Blood Donor Screening for Chagas Disease-United States, 2006-2007. MMWR 2007;56:141-3.
- DIAS, JCP. Doença de Chagas e transfusão de sangue no Brasil:vigilância e desafios. Rev. Bras. Hematol. Hemoter. 28(2):abril/junho 2006
- WENDEL S. Transfusion-transmitted american and african trypanosomiasis (Chagas disease and sleeping sickness): neglected or reality. ISBT Science Series (2006) 1 , 140–151.
- MONCAYO A. Chagas' Disease: Current epidemiological trends after the interrupcion of vectorial and transfusional transmission in the Southern countries. Mem. Inst. Oswaldo Cruz, 2003;98(5):577-91.
- SCHMUNIS G. A. Prevention of transfusional Trypanosoma cruzi infection in Latin America. Mem. Inst. Oswaldo Cruz. Rio de Janeiro. 1999.v.94, n.1.p.93-101.
- REUNIÃO ANUAL DE PESQUISA APLICADA EM DOENÇA DE CHAGAS E LEISHMANIOSES (XVI). Relatório final.Uberaba. 2000 .3p.
- CARVALHO M. R., KRIEGER M. A., ALMEIDA E., OLEMANN W., SHIKANAI-YASSUDA M. A., FERREIRA A. W., PEREIRA J. B., SÁEZ-ALQUEZAR A., DORLHIAC P. E., CHAMONE D. F. , GODENBERG S. Chagas' disease diagnosis: evaluation of several test in blood bank screening. Transfusion.1993.v.33, n.10, p.830-834.
- DIAS J. C. P. Mecanismos de transmissão. In: BRENER Z. & ANDRARE Z. O Trypanosoma cruzi e a doença de Chagas. Rio de Janeiro.Guanabara Koogan.1979. cap.4, p.152-174.
- TORRICO F, ALONSO-VEGA C, SUAREZ E, RODRIGUEZ P, TORRICO MC, DRAMAIX M. Maternal Trypanosoma cruzi infection, pregnancy outcome, morbidity, and mortality of congenitally infected and non-infected newborns in Bolivia. Am J trop Méd Hyg. 2004;70(2):201-9.
- MORETTI E, BASSO B, CASTRO I, PAEZ MC, CHAUL M, BARBIERI G, et al. Chagas'disease: study of congenital transmission in cases of acute maternal infection. Rev Soc Bras Med Trop. 2005; 38(1): 53-55.
- CARLIER, Y & TORRICO F. Congenital infection with Trypanosoma cruzi : from mechanisms of transmission to strategies for diagnosis and control. Revista da Sociedade Brasileira de Medicina Tropical, 36(6):767-771, 2003
- GONTIJO ED, ANDRADE GMQ, JANUZZI JH, MOREIRA E, JANUÁRIO N, MOURÃO O, ET AL. Doença de Chagas Congênita – Inquérito Sorológico em Minas Gerais - modelo e proposta. Rev Soc Bras Med Trop.1998; 31(Supl III):53.
- GONTIJO ED et al. Relatório técnico: Transmissão Congênita da Infecção Chagásica em Minas Gerais. Belo Horizonte, 2007.
- GÜRTLER RE, SEGURA EL, COHEN JE. Congenital transmission of Trypanosoma cruzi infection in Argentina. Emerg Infect Dis. 2003; 9(1):29-32.

- SCHENONE H et al. Congenital Chagas Disease of Second Generation in Santiago, Chile. Report of two cases. *Rev. Inst. Med. trop. S. Paulo*, 43(4):231-232, 2001.
- TRUYENS C, MJIHDI K, LAMBOT M-A, RIVERA MT, NOËL C, CARLIER Y. Efectos de la infección aguda y crônica por *Trypanosoma cruzi* em la gestación de los ratones. *Revista da Sociedade Brasileira de Medicina Tropical*, 2005; 38 (Suppl II).
- DIAS JCP. Notas sobre o *Trypanosoma cruzi* e suas características bio-ecológicas, como agente de enfermidades transmitidas por alimentos. *Revista da Sociedade Brasileira de Medicina Tropical* 39(4):370-375, 2006
- NOTAS TÉCNICAS – SECRETARIA DE VIGILÂNCIA EM SAÚDE/MINISTÉRIO DA SAÚDE. http://portal.saude.gov.br/portal/arquivos/pdf/nota_chagas2308.pdf
http://portal.saude.gov.br/portal/arquivos/pdf/nota_chagas_091007.pdf
- COURA JR. Mecanismo de transmissão da infecção chagásica ao homem por via oral. *Revista da Sociedade Brasileira de Medicina Tropical* 30 (supl 1): 45-47, 1997.
- RELATÓRIO TÉCNICO. Consulta Técnica em Epidemiologia, Prevenção e Manejo da Transmissão da Doença de Chagas como Doença Transmitida por Alimentos. *Revista da Sociedade Brasileira de Medicina Tropical* 39(5):512-514, 2006.
- SHIKANAI-YASUDA, M.A., LOPES, M.H., TOLEZANO, J.E. et al. Acute Chagas' disease: transmission mechanisms, clinical features and specific therapeutic response in cases diagnosed in an urban center. *Rev. Inst. Med. trop. S. Paulo* . 1990, vol. 32, no. 1 , pp. 16-27.
- SHIKANAI-YASUDA 1990
- RASSI A, AMATO NETO V, RASSI GG, AMATO VS, RASSI JÚNIOR A, LUQUETTI AO E RASSI SG. Busca retrospectiva da transmissão materna da infecção chagásica em pacientes na fase crônica A retrospective search for maternal transmission of Chagas infection from patients in the chronic phase. *Revista da Sociedade Brasileira de Medicina Tropical* 37(6):485-489, nov-dez, 2004
- HOFFLIN JM, SADLER RH, ARAUJO FG, PAGE WE, REMINGTON JS. Laboratory-acquired Chagas disease *Trans R Soc Trp Med Hyg* 1987;81(3):437-40)
- HERWALDT BL, Laboratory-Acquired Parasitic Infections from Accidental Exposures. *Clinical Microbiology Reviews*, 2001, p. 659–688.
- BARCAN, L LUNAO C, CLARA L, SINAGRA A, VALLEDOR A, DE RISSIO AM, GADANO A, GARCIA MM, SANTIBANES E AND RIARTE A. Transmission of *T. Cruzi* Infection Via Liver Transplantation to a Nonreactive Recipient for Chagas' Disease. *Liver Transplantation*, Vol 11, No 9 (September), 2005: pp 1112-1116
- D'ALBUQUERQUE LA, GONZALEZ AM, FILHO HL, COPSTEIN JL, LARREA FI, MANSERO JM, PERÓN G JR, RIBEIRO MA JR, OLIVEIRA E SILVA A. Liver transplantation from deceased donors serologically positive for Chagas disease. *Am J Transplant*. 2007 Mar;7(3):680-4.

Controle vetorial do Cone Sul - A Iniciativa do Cone Sul (Incosul) (João Carlos Pinto Dias, Christopher John Schofield)

- Coura JR 1997. Síntese histórica e evolução dos conhecimentos sobre a Doença de Chagas. In Dias JCP & Coura JR (orgs) *Clínica e Terapêutica da Doença de Chagas: uma abordagem prática para o clínico geral*. Rio de Janeiro, Editora FIOCRUZ, pp. 469-486.
- Dias E 1957. Profilaxia da doença de Chagas. *O Hospital* 51: 485-459.
- Dias E 1959. Doença de Chagas, um problema americano. *O Hospital* 55: 57-65.
- Dias JCP 2002. O controle da doença de Chagas no Brasil. In Silveira AC (organ.) *El control de la Enfermedad de Chagas em los Países del Cono Sur de América*. Uberaba, OPAS/Faculdade de Medicina do Triângulo Mineiro, pp. 145-268.
- Dias JCP 2007. Fifteen years of the Southern Cone Initiative. *Memórias do Instituto Oswaldo Cruz* (In Press)
- Dias JCP & Schofield CJ 1999. The evolution of Chagas Disease (American Trypanosomiasis) control after 90 years since Carlos Chagas discovery. *Memórias do Instituto Oswaldo Cruz* 94 (suppl. 1): 103 - 121
- Dias JCP, Briceño-León R & Storino R 1994. Aspectos sociales, económicos, políticos, culturales y psicológicos. In Storino R & Milei J (organs) *Enfermedad de Chagas*. Buenos Aires, Doyma Argentina Ed., pp. 527-566.
- Dias JCP, Silveira AC & Schofield CJ 2002. The impact of Chagas Disease control in Latin América: a review. *Memórias do Instituto Oswaldo Cruz* 97: 603-612.
- Rocha e Silva EO 1979. Profilaxia. In Brener Z & Andrade ZA (orgs.) *Trypanosoma cruzi e doença de Chagas*. Rio de Janeiro, Guanabara Koogan Ed., pp. 425-449.

- Romaña C 1979. La enfermedad de Chagas como factor de integración científica latino-americana. Anais do Congresso Internacional sobre Doença de Chagas, Rio de Janeiro, pp. VIII-XIII
- Schofield CJ & Dias JCP 1999. The Southern Cone Initiative against Chagas Disease. *Advances in Parasitology* 42: 1-27.
- Schmunis GA 1997. Tripanossomíase Americana: seu impacto nas Américas e perspectivas de eliminação. In Dias JCP & Coura JR (orgs) *Clínica e Terapêutica da Doença de Chagas: uma abordagem prática para o clínico geral*. Rio de Janeiro, Editora FIOCRUZ, pp. 11-23.
- Silveira AC et al. 2002. El control de la Enfermedad de Chagas em los Países del Cono Sur de América. Uberaba, OPAS/Faculdade de Medicina do Triângulo Mineiro, 316 p.
- WHO 2002. Control of Chagas Disease. Geneva World Health Organization, Technical Report Series, no. 905, 96 p.

A certificação da interrupção da transmissão da doença de Chagas pelo *Triatoma infestans* no Brasil, em 2006 (João Carlos Pinto Dias)

- Brasil 2002. Inquérito Sorológico Nacional de Prevalência da Infecção Chagásica. Brasília, Ministério da Saúde, Fundação Nacional de Saúde, 14 pp.
- Chagas CRJ 1912. O mal de Chagas. *Arquivos da Sociedade de Medicina e Cirurgia de São Paulo* 3: 34 – 66.
- Dias E, 1957. Profilaxia da doença de Chagas. *O Hospital* 51: 53 – 68.
- Dias JCP 2002. O controle da doença de Chagas no Brasil. In Silveira AC (organ.) *O controle da doença de Chagas nos países do Cone Sul da América. História de uma iniciativa internacional, 1991-2001*. Uberaba, OPAS-Faculdade de Medicina do Triângulo Mineiro, pp. 145-250.
- Dias JCP 2006. Descentralización y enfermedad de Chagas, Brasil, 2005. In Yadón Z, Gürtler R, Tobar F & Médici AC (orgs.) *Descentralización y gestión del control de las enfermedades transmisibles em América Latina*. Buenos Aires, OPS, pp. 215-230.
- Dias JCP & Schofield CJ 1999. The evolution of Chagas Disease (American Trypanosomiasis) control after 90 years since Carlos Chagas discovery. *Memórias do Instituto Oswaldo Cruz* 94 (suppl. 1): 103 - 121
- Dias JCP, Silveira AC & Schofield CJ 2002. The impact of Chagas Disease control in Latin América. *Memórias do Instituto Oswaldo Cruz*
- Rocha e Silva EO 1979. Profilaxia. In Brener Z e Andrade ZA (orgs.) *Trypanosoma cruzi e doença de Chagas*. Rio de Janeiro, Guanabara Koogan Editora, pp. 425-449.
- Schofield CJ & Dias JCP 1999. The Southern Cone Initiative against Chagas Disease. *Advances in Parasitology* 42: 1-27.
- WHO 2002. Control of Chagas Disease. Geneva World Health Organization, Technical Report Series, no. 905, 96 p.

DIAGNOSTICO

Diagnóstico laboratorial – situação atual (Yara de Miranda Gomes)

- Ministério da Saúde. Consenso Brasileiro em Doença de Chagas. *Revista da Sociedade Brasileira de Medicina Tropical*, 38(Supl. III):12-14, 2005.
- Ministério da Saúde. Resultados da avaliação dos kits para diagnóstico da doença de Chagas. Nota técnica Nota Técnica N.º 03/06 – CGLAB/CGDT/DEVEP/SVS/MS), 2006. Site: http://200.214.130.38/portal/arquivos/pdf/nota_kit_chagas.pdf Capturado em 31/01/2007.

História dos métodos de diagnóstico para a doença de Chagas (Alejandro Luquetti Ostermayer)

- Almeida JO, Fife Jr EH 1976. Métodos de fijación del complemento estandarizado cuantitativamente para la evaluación crítica de antígenos preparados con *Trypanosoma cruzi*. *Org Panamer Salud, Publ Cient*, nº 319, Washington.
- Bacigalupo J 1936. Xenodiagnóstico en la enfermedad de Chagas. *Ev San Mil Argent* 35: 1033-1035.

- Brumpt E 1914. Le xénodiagnostic. Application au diagnostic de quelques infections parasitaires et en particulier a la Trypanosomose de Chagas. *Bull Soc Pat Exot* 7: 706-710.
- Camargo ME 1966. Fluorescent antibody test for the diagnosis of American trypanosomiasis. Technical modification employing preserved culture forms of *Trypanosoma cruzi* in a slide test. *Rev Inst Med Trop São Paulo* 8: 227-234.
- Camargo ME, Silva GR, Castilho EA, Silveira AC 1984. Inquérito sorológico da prevalência de infecção chagásica no Brasil. *Rev Inst Med Trop São Paulo* 26: 192-204.
- Castro AM, Luquetti AO, Rassi A, Rassi GG, Chiari E, Galvão LMC 2002. Blood culture and polymerase chain reaction for the diagnosis of the chronic phase of human infection with *Trypanosoma cruzi*. *Parasitol Res* 88: 894-900.
- Cerisola JA, Chaben MF, Lazzari JO 1962. Test de hemaglutinación para el diagnóstico de la enfermedad de Chagas. *Prensa Méd Argent* 49: 1761-1767.
- Cerisola JA, Rohwedder R, Segura EL, Del Prado CE, Alvarez M, Martini GJW 1974. *El xenodiagnóstico*, Imp Inst Nac Invest Cardiovasc, Buenos Aires, 157 p.
- Chagas C 1909. Nova trypanozomiose humana. Estudos sobre a morfologia e o ciclo evolutivo do *Schizotrypanum cruzi* n.g., n.s.p., agente etiológico de nova entidade mórbida no homem. *Mem Inst Oswaldo Cruz* 1: 159-218.
- Chagas C 1918. Revisão do ciclo evolutivo do *Trypanosoma cruzi*. *Brazil-Medico* 27: 23.
- Chiari E 1992. Parasitological diagnosis. In S Wendel, Z Brener, ME Camargo, A Rassi (eds), *Chagas' disease (American Trypanosomiasis): Its impact on transfusion and clinical medicine*. Editora Sociedade Brasileira de Hematologia e Hemoterapia, São Paulo, p. 153-164.
- Chiari E, Brener Z 1966. Contribuição ao diagnóstico parasitológico da doença de Chagas na sua fase crônica. *Rev Inst Med Trop São Paulo* 8: 134-138.
- Dias E 1935. Le xénodiagnostic appliqué à la trypanosomiose américaine. *Comp Rend Soc Biol* 118: 287-289.
- Fife EH, Muschel LH 1959. Fluorescent antibody technic for serodiagnosis of *Trypanosoma cruzi* infection. *Proc Soc Exp Biol Med* 101: 540-543.
- Freitas JLP 1952. O diagnóstico de laboratório na moléstia de Chagas. *Rev Clin São Paulo* 28: 1-20.
- Guerreiro C, Machado A 1913. Da reação de Bordet e Gengou na moléstia de Carlos Chagas como elemento diagnóstico. *Brasil Med* 27: 225-226.
- Levin M J, Franco da Silveira J, Frasch ACC, Camargo ME, Lafon S, Degraive WM, Rangel-Aldao R 1991. Recombinant *Trypanosoma cruzi* antigens and Chagas' disease diagnosis: analysis of a workshop. *FEMS Microbiol Immunol* 89: 11-20.
- Luquetti AO 1999. Evolution of knowledge on the etiological diagnosis of Chagasic infection. *Mem Inst Oswaldo Cruz*, 94(suppl): 283-284.
- Luquetti AO, Ponce C, Ponce E, Esfandiari J, Schijman A, Revollo S, Añez N, Zingales B, Rangel-Aldao R, González A, Levin MJ, Umezawa ES, Silveira JF 2003. Chagas' disease diagnosis: a multicentric evaluation of Chagas Stat-Pak, a rapid immunochromatographic assay with recombinant proteins of *Trypanosoma cruzi*. *Diagn Microbiol Infect Dis* 46: 265-271.
- Luquetti AO, Rassi A 2000. Diagnóstico Laboratorial da Infecção pelo *Trypanosoma cruzi*. In Z Brener, Z Andrade, M Barral-Neto (eds), *Trypanosoma cruzi e Doença de Chagas*, 2º ed. Guanabara Koogan, Rio de Janeiro, p. 344-378.
- Luz ZMP, Coutinho MG, Caçado JR, Krettli AU 1994. Hemocultura: Técnica sensível na detecção do *Trypanosoma cruzi* em pacientes chagásicos na fase crônica da doença de Chagas. *Rev Soc Bras Med Trop* 27: 143-148.
- Ministério da Saúde 1996. Fundação Nacional de Saúde. Coordenação de Laboratórios. Parecer Técnico 001/96. *Rev Patol Trop* 25: 171.
- Moncayo A, Luquetti AO 1990. Multicentre double blind study for evaluation of *Trypanosoma cruzi* defined antigens as diagnostic reagents. *Mem Inst Oswaldo Cruz* 85: 489-495.
- Rabelo A, Luquetti AO, Moreira EF, Gadelha MF, Santos JA, Melo L, Schwind P 1999. Serodiagnosis of *Trypanosoma cruzi* infection using the new particle gel immunoassay-ID-PaGIA Chagas. *Mem Inst Oswaldo Cruz* 94: 77-82.
- Saéz-Alquézar A, Luquetti AO, Pereira JB, Moreira EF, Gadelha MFS, Garcia-Zapata MT, Arruda AHS 1997. Estudo multicêntrico: avaliação do desempenho de conjuntos diagnósticos de hemaglutinação indireta, disponíveis no Brasil, para o diagnóstico sorológico da infecção pelo *Trypanosoma cruzi*. *Rev Patol Trop* 26: 343-374.

- Scharfstein J, Luquetti A O, Murta ACM, Senna M, Rezende JM, Rassi A, Mendonça-Previato L 1985. Chagas disease: serodiagnosis with purified Gp25 antigen. *Am J Trop Med Hyg* 34: 1153-1160.
- Schechter M, Luquetti AO, Rezende JM, Rassi A, Miles MA 1985. Further evaluation of lectin affinity purified glycoprotein (GP90) in the enzyme linked immunosorbent assay (ELISA) for diagnosis of *Trypanosoma cruzi* infection. *Trans Roy Soc Trop Med Hyg* 79: 637-640.
- Schechter M, Stevens AF, Luquetti AO, Snary D, Allen AK, Miles MA 1986. Prevalence of antibodies to 72-Kilodalton glycoprotein (GP72) in patients with Chagas' disease and further evidence of Zymodeme-Associated expression of GP72 carbohydrate epitopes. *Infect Immunity* 53: 547-552.
- Schmuñis GA 1991. A resposta imune humoral na infecção humana recente pelo *Trypanosoma cruzi*. *Rev Patol Trop* 20: 51-146.
- Silveira JF, Umezawa ES, Luquetti AO 2001. Chagas disease: recombinant *Trypanosoma cruzi* antigens for serological diagnosis. *Trends parasitol* 17: 286-291.
- Torrealba JF 1934. Algo más sobre tripanosomosis ensayos de xenodiagnóstico. *Gac Méd Caracas* 41: 33-37.
- Umezawa ES, Bastos SF, Camargo ME, Yamauchi LM, Santos MR, González A, Zingales B, Levin M, Sousa O, Rangel-Aldao R, Silveira JF 1999. Evaluation of recombinant antigens for Chagas' disease serodiagnosis in South and Central America. *J Clin Microbiol* 37: 1554-1560.
- Vattuone NH, Yanovsky JF 1971. *Trypanosoma cruzi*: agglutination activity of enzyme treated epimastigotes. *Exp Parasitol* 30: 349-355.
- Voller A, Draper C, Bidwell DE, Bartlett A 1975. A microplate enzyme-linked immunosorbent assay (ELISA) for Chagas disease. *Lancet* i: 426-429.
- www.aids.gov.br/telelab
- www.anvisa.gov.br/divulga/eventos/hemo_2005_sorologia.ppt
- http://portal.saude.gov.br/saude/portal/arquivos/pdf/nota_kit_chagas.pdf

Diagnóstico Molecular da doença de Chagas (Constança Britto)

- SEGURA, EL: Xenodiagnosis. In *Chagas' Disease Vectors* 1987, Vol.2 (ed. Brener, RR & Stoka, AM), pp.41-45. Boca Raton, Florida: CRC Press Inc.
- FERREIRA, AW: Tests for Chagas disease serodiagnosis: a review. In *Chagas Disease (American Trypanosomiasis): its Impact on Transfusion and Clinical Medicine* 1992, (ed. Wendel, S; Brener, Z; Camargo, ME & Rassi, A), pp.179-193. ISBT, São Paulo.
- STURM, NR; DEGRAVE, W; MOREL, CM; SIMPSON, L: Sensitive detection and schizodeme classification of *Trypanosoma cruzi* cells by amplification of kinetoplast minicircle DNA sequences: use in diagnosis of Chagas disease. *Mol. Biochem. Parasitol.* 1989, 33: 205-214.
- MOSER, DR; KIRCHHOFF, L; DONNELSON, JE: Detection of *Trypanosoma cruzi* by DNA amplification using the polymerase chain reaction. *J. Clin. Microbiol.* 1989, 27: 1477-1482.
- DEGRAVE, W; FRAGOSO, SP; BRITTO, C; VAN HEUVERSWYN, H; KIDANE, GZ; CARDOSO MAB; MUELLER, R; SIMPSON, L; MOREL, CM: Peculiar sequence organization of kinetoplast DNA minicircles from *Trypanosoma cruzi*. *Mol. Biochem. Parasitol.* 1988, 27: 63-70.
- SIMPSON, L: The genomic organization of guide RNA genes in kinetoplastid protozoa: several conundrums and their solutions. *Mol. Biochem. Parasitol.* 1997, 86(2): 133-141.
- AVILA, HA; PEREIRA, JB; THIEMAN, O; DE PAIVA, E; DEGRAVE, W; MOREL, CM; SIMPSON, L: Detection of *Trypanosoma cruzi* in blood specimen of chronic chagasic patients by polymerase chain reaction amplification of kinetoplast minicircle DNA: comparison with serology and xenodiagnosis. *J. Clin. Microbiol.* 1993, 31(9): 2421-2426.
- Russomando, G; FIGUEREDO, MA; SAKAMOTO, M; MORITA, K: Polymerase chain reaction-based detection of *Trypanosoma cruzi* DNA in serum. *J. Clin. Microbiol.* 1992, 30: 2864-2868.
- Russomando, G.; De Tomassone, M. C.; De Guillen, I.; Acosta, N.; Vera, N.; Almiron, M. et al.: Treatment of congenital Chagas disease and follow-up by the polymerase chain reaction. *Am. J. Trop. Med. Hyg.* 1998, 59: 487-491.
- AVILA, HA; SIGMAN, DS; COHEN, LM; MILLIKAN RC; SIMPSON, L: Polymerase chain reaction amplification of *Trypanosoma cruzi* kinetoplast minicircle DNA isolated from whole

- blood lysates: diagnosis of chronic Chagas disease. *Mol. Biochem. Parasitol.* 1991, 48(2): 211-221.
- BRITTO, C; CARDOSO, MAB; WINCKER, P; MOREL, CM: A simple protocol for the physical cleavage of *Trypanosoma cruzi* kinetoplast DNA present in blood samples and its use in polymerase chain reaction (PCR)-based diagnosis of chronic Chagas disease (Technical note). *Mem. Inst. Oswaldo Cruz* 1993, 88(1): 171-172.
- WINCKER, P; BRITTO, C; PEREIRA, JB; CARDOSO, MA; OELEMANN, W; MOREL, CM: Use of a simplified polymerase chain reaction procedure to detect *Trypanosoma cruzi* in blood samples from chronic chagasic patients in a rural endemic area. *Am. J. Trop. Med. Hyg.* 1994(a), 51: 771-777.
- BRITTO, C; CARDOSO, MA; RAVEL, C; SANTORO, A; PEREIRA, JB; COURA, JR; MOREL, CM; WINCKER, P: *Trypanosoma cruzi*: Parasite detection and strain discrimination in chronic chagasic patients from northeastern Brazil using PCR amplification of kinetoplast DNA and nonradioactive hybridization. *Exp. Parasitol.* 1995(a), 81: 462-471.
- JUNQUEIRA, AC; CHIARI, E; WINCKER, P: Comparison of the polymerase chain reaction with two classical parasitological methods for the diagnosis of Chagas disease in an endemic region of north-eastern Brazil. *Trans. R. Soc. Trop. Med. Hyg.* 1996, 90(2): 129-132.
- COURA, JR; JUNQUEIRA, ACV; GIORDANO, CM; FUNATSU, IRK: Chagas disease in the Brazilian Amazon. I - A short review. *Rev. Inst. Med. Trop. São Paulo* 1994, 36: 363-368.
- WINCKER, P; BOSSENO, MF; BRITTO, C; YAKSIC, N; CARDOSO, MA; MOREL, CM; BRENIERE, SF: High correlation between Chagas disease serology and PCR-based detection of *Trypanosoma cruzi* kinetoplast DNA in Bolivian children living in an endemic area. *FEMS Microbiol.* 1994(b), 124(3): 419-423.
- DE CASTRO, SL: The challenge of Chagas' disease chemotherapy: An update of drugs assayed against *Trypanosoma cruzi*. *Acta Tropica* 1993, 53: 83-98.
- Urbina, J.A.: Specific treatment of Chagas disease: current status and new developments. *Curr. Opin. Infect. Dis.* 2001, 14: 733-741.
- BRENER, Z; KRETTLI, AU: Immunology of Chagas' disease. In *Modern Parasite Biology: Cellular, Immunologic and Molecular Aspects 1990*, (ed. Wyler, DJ), pp.247-261. New York: WH Freeman and Company.
- BRITTO, C; CARDOSO, MA; VANNI, CMM; HASSLOCHER-MORENO, A; XAVIER, SS; OELEMANN, W; SANTORO, A; PIRMEZ, C; MOREL, CM; WINCKER, P: Polymerase chain reaction detection of *Trypanosoma cruzi* in human blood samples as a tool for diagnosis and treatment evaluation. *Parasitology* 1995(b), 110: 241-247.
- BRITTO, C; SILVEIRA, C; CARDOSO, MA; MARQUES, P; LUQUETTI, A; MACEDO, V; FERNANDES, O: Parasite persistence in treated chagasic patients revealed by xenodiagnosis and polymerase chain reaction. *Mem. Inst. Oswaldo Cruz* 2001, 96: 823-826.
- LIVAK, KJ; FLOOD, SJA; MARMARO, J; GIUSTI, W; DEETZ, K: Oligonucleotides with fluorescent dyes at opposite ends provide a quenched probe system useful for detecting PCR product and nucleic acid hybridization. *PCR Meth. Appl.* 1995, 4: 357-362.
- HEID, CA; STEVENS, J; LIVAK, KJ; MICKEY WILLIAMS, P: Real time quantitative PCR. *Genome Research* 1996, 6: 986-994.
- Schijman, A. G.; Altcheh, J.; Burgos, J. M.; Biancardi, M.; Bisio, M.; Levin, M. J. & Freilij, H.: Aetiological treatment of congenital Chagas disease diagnosed and monitored by the polymerase chain reaction. *J. Antimicrob. Chemother.* 2003, 52: 441-449.
- BRITTO, C; CARDOSO, A; MARQUES, P; NEHME-RUSSELL, N; FERNANDES, O; MOREL, C: Tecnologia TaqMan - Uso de sondas fluorogênicas para a quantificação em tempo real pela PCR e sua aplicação no monitoramento de tratamento específico anti-*Trypanosoma cruzi*. I Bienal de Pesquisa da Fundação Oswaldo Cruz 1998, pp.77.
- BRITTO, C; CARDOSO, MA; MARQUES, P; FERNANDES, O; MOREL, CM: Polymerase chain reaction: new insights into the diagnosis of chronic Chagas disease. *Mem. Inst. Oswaldo Cruz* 1999, 94(1): 305-306.
- Diez, M.; Favaloro, L.; Bertolotti, A.; Burgos, J.M.; Vigliano, C.; Peradejordi, L.M.; Levin, M.J.; Arnedo, A.; Nagel, C.; Schijman, A.G.; Favaloro, R.R.: Usefulness of polymerase chain reaction strategies for early diagnosis of Chagas disease reactivation and treatment follow-up in heart transplantation. *Am. J. Transplant.* 2007, 7(6): 1633-1640.

TRATAMENTO

A pesquisa de novas drogas para o tratamento da doença de Chagas (Solange Lisboa de Castro, Maria de Nazaré Soeiro)

- Aguirre G, Boiani M, Cabrera E, Cerecetto H, Di MR, Gonzalez M, Denicola A, Sant'anna CM, Barreiro EJ. 2006. New potent 5-nitrofuryl derivatives as inhibitors of *Trypanosoma cruzi* growth. 3D-QSAR (CoMFA) studies. *Eur J Med Chem* 41:457-466.
- Aguirre G, Bolani M, Cerecetto H, Gerpe A, Gonzalez M, Sainz YF, Denicola A, deOcariz CO, Nogal JJ, Montero D, Escario JA. 2004. Novel antiprotozoal products: Imidazole and benzimidazole N-oxide derivatives and related compounds. *Arch.Pharm.* 337: 259-270.
- Amato Neto V. 1999. Etiological treatment for infection by *Trypanosoma cruzi*. *Mem Inst Oswaldo Cruz* 94 Suppl 1:337-39.
- Andrade AL, Zicker F, de Oliveira RM, Almelda Silva S, Luquetti A, Travassos LR, Almeida IC, De Andrade SS, de Andrade JG, Martelli CM 1996. Randomized trial of efficacy of benzimidazole in treatment of early *Trypanosoma cruzi* infection. *Lancet* 348:1407-1413.
- Apt W, Aguilera X, Arribada A, Perez C, Miranda C, Sanchez G, Zulantay I, Cortes P, Rodriguez J, Juri D 1998. Treatment of chronic Chagas disease with itraconazole and allopurinol. *Am J Trop Med Hyg* 59:133-138
- Apt W, Arribada A, Zulantay I, Solari A, Sanchez G, Mundaca K, Coronado X, Rodriguez J, Gil LC, Osuna A. 2005. Itraconazole or allopurinol in the treatment of chronic American trypanosomiasis: the results of clinical and parasitological examinations 11 years post-treatment. *Ann Trop Med Parasitol* 99:733-41.
- Araújo MS, Martins-Filho OA, Pereira ME, Brener Z 2000. A combination of benzimidazole and ketoconazole enhances efficacy of chemotherapy of experimental Chagas disease. *J Antimicrob Chemother* 45: 819-824.
- Aronov AM, Suresh S, Buckner FS, Van Voorhis WC, Verlinde CL, Opperdoes FR, Hol WG, Gelb MH. 1999. Structure-based design of submicromolar, biologically active inhibitors of trypanosomatid glyceraldehyde-3-phosphate dehydrogenase. *Proc Natl Acad Sci USA* 96:4273-4278.
- Augustyns K, Amssoms K, Yamani A, Rajan PK, Haemers A 2001. Trypanothione as a target in the design of antitrypanosomal and antileishmanial agents. *Curr Pharm Des* 7: 1117-1141.
- Avila JL, Avila A, Munoz E. 1981. Effect of allopurinol on different strains of *Trypanosoma cruzi*. *Am J Trop Med Hyg* 30:769-774.
- Barr SC, Warner KL, Kornreic BG, Piscitelli J, Wolfe A, Benet L, McKerrow JH. 2005. A cysteine protease inhibitor protects dogs from cardiac damage during infection by *Trypanosoma cruzi*. *Antimicrob Agents Chemother* 49:5160-5161.
- Barrett MP, Gilbert IH. 2002. Perspectives for new drugs against trypanosomiasis and leishmaniasis. *Curr Top Med Chem* 2:471-482.
- Beach DH, Goad LJ, Holz GG, Jr. 1986. Effects of ketoconazole on sterol biosynthesis by *Trypanosoma cruzi* epimastigotes. *Biochem Biophys Res Commun* 136:851-856.
- Benaim G, Sanders JM, Garcia-Marchan Y, Colina C, Lira R, Caldera AR, Payares G, Sanoja C, Burgos JM, Leon-Rossell A, Concepcion JL, Schijman AG, Levin M, Oldfield E, Urbina JA. 2006. Amiodarone has intrinsic anti-*Trypanosoma cruzi* activity and acts synergistically with posaconazole. *J Med Chem* 49:892-899.
- Benson TJ, McKie JH, Garforth J, Borges A, Fairlamb AH, Douglas KT. 1992. Rationally designed selective inhibitors of trypanothione reductase. Phenothiazines and related tricyclics as lead structures. *Biochem J* 286:9-11.
- Blumenstiel K, Schoneck R, Yardley V, Croft SL, Krauth-Siegel RL. 1999. Nitrofurans as common subversive substrates of *Trypanosoma cruzi* lipoamide dehydrogenase and trypanothione reductase. *Biochem Pharmacol* 58:1791-1799.
- Bonse S, Richards JM, Ross SA, Lowe G, Krauth-Siegel RL 2000. (2,2':6',2"-Terpyridine)platinum(II) complexes are irreversible inhibitors of *Trypanosoma cruzi* trypanothione reductase but not of human glutathione reductase. *J Med Chem* 43: 4812-4821.
- Bouteille B, Oukem O, Bisser S, Dumas M, 2003. Treatment perspectives for human African trypanosomiasis. *Fundam Clin Pharmacol* 17: 171-181.
- Braga MV, Urbina JA, DeSouza W. 2004. Effects of squalene synthase inhibitors on the growth and ultrastructure of *Trypanosoma cruzi*. *Int J Antimicrobial Agents* 24:72-78.

- Bressi JC, Verlinde CL, Aronov AM, Shaw ML, Shin SS, Nguyen LN, Suresh S, Buckner FS, Van Voorhis WC, Kuntz ID, Hol WG, Gelb MH 2001. Adenosine analogues as selective inhibitors of glyceraldehyde-3-phosphate dehydrogenase of trypanosomatidae via structure-based drug design. *J Med Chem* 44: 2080-2093.
- Buckner FS, Griffin JH, Wilson AJ, Van Voorhis WC 2001. Potent anti-*Trypanosoma cruzi* activities of oxidosqualene cyclase inhibitors. *Antimicrob Agents Chemother* 45: 1210-1215.
- Buckner F, Yokoyama K, Lockman J, Aikenhead K, Ohkanda J, Sadilek M, Sebti S, Van Voorhis W, Hamilton A, Gelb MH. 2003. A class of sterol 14-demethylase inhibitors as anti-*Trypanosoma cruzi* agents. *Proc Natl Acad Sci USA* 100:15149-15153.
- Chibale K, Haupt H, Kendrick H, Yardley V, Saravanamuthu A, Fairlamb AH, Croft SL. 2001. Antiprotozoal and cytotoxicity evaluation of sulfonamide and urea analogues of quinacrine. *Bioorg Med Chem Lett* 11:2655-2657.
- Concepcion JL, Gonzalez-Pacanowska D, Urbina JA. 1998. 3-Hydroxy-3-methyl-glutaryl-CoA reductase in *Trypanosoma (Schizotrypanum) cruzi*: subcellular localization and kinetic properties. *Arch Biochem Biophys* 352:114-120.
- Coura JR, de Castro SL. 2002. A critical review on Chagas disease chemotherapy. *Mem Inst Oswaldo Cruz* 97:3-24.
- Coura JR, Junqueira AC, Boia MN, Fernandes O. 1999. Chagas disease: from bush to huts and houses. Is it the case of the Brazilian Amazon? *Mem Inst Oswaldo Cruz* 94 Suppl 1:379-384.
- Coura JR, Junqueira ACV, Fernandes O, Valente SAS, Miles MA. 2002. Emerging Chagas disease in Amazonian Brazil. *Trends Parasitol* 18:171-176.
- Croft SL, Barrett MP, Urbina JA. 2005. Chemotherapy of trypanosomiasis and leishmaniasis. *Trends Parasitol* 21:508-512.
- D'Silva C, Daunes S. 2000. Structure-activity study on the in vitro antiprotozoal activity of glutathione derivatives. *J Med Chem* 43:2072-2078.
- Dardonville C. 2005. Recent advances in antitrypanosomal chemotherapy: patent literature 2002-2004. *Expert Opin Ther Patents* 15:1241-1257.
- De Marchi AA, Castilho MS, Nascimento PG, Archanjo FC, del PG, Oliva G, Pupo MT. 2004. New 3-piperonylcoumarins as inhibitors of glycosomal glyceraldehyde-3-phosphate dehydrogenase (gGAPDH) from *Trypanosoma cruzi*. *Bioorg Med Chem* 12:4823-4833.
- De Oliveira RB, Vaz AB, Alves RO, Liarte DB, Donnici CL, Romanha AJ, Zani CL. 2006. Arylfurans as potential *Trypanosoma cruzi* trypanothione reductase inhibitors. *Mem Inst Oswaldo Cruz* 101:169-173.
- De Souza EM, Lansiaux A, Bailly C, Wilson, WD Hu, Q, Boykin DW, Batista MM; Araújo-Jorge TC, Soeiro MNC. 2004. Phenyl substitution of furamidine markedly potentiates its antiparasitic activity against *Trypanosoma cruzi* and *Leishmania amazonensis*. *Biochem Pharmacol* 68:593-600.
- De Souza EM, Melo G, Boykin DW, Wilson WD, Hu Q, Soeiro MNC. 2006a. Tripanocidal activity of the phenyl-substituted analogue of furamidine DB569 against *Trypanosoma cruzi* infection *in vivo*. *J Antimicrob Chemoth* 58:610-614.
- De Souza EM, Menna-Barreto R, Araújo-Jorge TC, Kumar A, Hu Q, Boykin DW, Soeiro MNC. 2006b. Antiparasitic activity of aromatic diamidines is related to apoptosis-like death in *Trypanosoma cruzi*. *Parasitology* 133:75-79.
- De Souza, EM, Oliviera GM and Soeiro MNC. 2007. Electrocardiographic findings in acutely and chronically *Trypanosoma cruzi*-infected mice treated by a phenyl-substituted analogue of furamidine DB569. *Drug Targets Insights*, no prelo.
- Dias JC. 2006. Chagas disease: successes and challenges. *Cad Saúde Pública* 22:2020-2021.
- Dias JC. 2007. Globalization, inequity and Chagas disease. *Cad Saúde Pública* 23 Suppl:S13-22.
- Dias JC, Silveira AC, Schofield CJ. 2002. The impact of Chagas disease control in Latin America: a review. *Mem Inst Oswaldo Cruz* 97:603-612.
- DoCampo R 2001. Recent developments in the chemotherapy of Chagas disease. *Curr Pharm Design* 7: 1157-1164.
- DoCampo R, Moreno SNJ 2001. Bisphosphonates as chemotherapeutic agents against trypanosomatids and Apicomplexan parasites. *Curr Drug Targets-Infect Dis* 1: 51-61.
- Dos Reis GA, Freire-de-Lima CG, Nunes MP, Lopes MF. 2005. The importance of aberrant T-cell responses in Chagas disease. *Trends Parasitol* 21:237-43.
- Du X, Hansell E, Engel JC, Caffrey CR, Cohen FE, McKerrow JH. 2000. Aryl ureas represent a new class of anti-trypanosomal agents. *Chem Biol* 7:733-742.

- Du X, Guo C, Hansell E, Doyle PS, Caffrey CR, Holler TP, McKerrow J H, Cohen F E. 2002. Synthesis and structure-activity relationship study of potent trypanocidal thio semicarbazone inhibitors of the trypanosomal cysteine protease cruzain. *J Med Chem* 45:2695-2707.
- Engel JC, Doyle PS, Palmer J, Bainton DF, McKerrow JH 1998a. Cysteine protease inhibitors alter Golgi complex ultrastructure and function in *Trypanosoma cruzi*. *J Cell Sci* 111: 597-606.
- Engel JC, Doyle PS, Hsieh I, McKerrow JH 1998b. Cysteine protease inhibitors cure an experimental *Trypanosoma cruzi* infection. *J Exp Med* 188: 725-734.
- Engel JC, Torres C, Hsieh I, Doyle PS, McKerrow JH, Garcia CT. 2000. Upregulation of the secretory pathway in cysteine protease inhibitor-resistant *Trypanosoma cruzi*. *J Cell Sci* 113:1345-1354.
- Esteva MI, Kettler K, Maidana C, Fichera L, Ruiz AM, Bontempi EJ, Andersson B, Dahse HM, Haebel P, Ortmann R, Klebe G, Schlitzer M. 2005. Benzophenone-based farnesyltransferase inhibitors with high activity against *Trypanosoma cruzi*. *J Med Chem* 48:7186-7191.
- Fairlamb AH, Cerami A 1992. Metabolism and functions of trypanothione in the kinetoplastida. *Annu Rev Microbiol* 46: 695-729.
- Florin-Christensen M, Florin-Christensen J, Garin C, Isola E, Brenner RR, Rasmussen L. 1990. Inhibition of *Trypanosoma cruzi* growth and sterol biosynthesis by lovastatin. *Biochem Biophys Res Commun* 166:1441-1445.
- Fournet A, Inchausti A, Yaluff G, Rojas De Arias A, Guinaudeau H, Bruneton J, Breidenbach MA, Karplus PA, Faerman CH 1998. Trypanocidal bisbenzylisoquinoline alkaloids are inhibitors of trypanothione reductase. *J Enzym Inhib* 13: 1-9.
- Galli U, Oliaro-Bosso S, Taramino S, Venegoni S, Pastore E, Tron GC, Balliano G, Viola F, Sorba G. 2007. Design, synthesis, and biological evaluation of new (2E,6E)-10-(dimethylamino)-3,7-dimethyl-2,6-decadien-1-ol ethers as inhibitors of human and *Trypanosoma cruzi* oxidosqualene cyclase. *Bioorg Med Chem Lett* 17:220-224.
- Garzoni LR, Waghbi MC, Baptista MM, De Castro SL, Meirelles MNL, Britto CC, Docampo R, Oldfield E, Urbina JA. 2004. Antiparasitic activity of risedronate in a murine model of acute Chagas disease. *Int J Antimicrob Agents* 23:286-290.
- Gilbert IH. 2002. Inhibitors of dihydrofolate reductase in leishmania and trypanosomes. *Bba Mol Basis Dis* 1587:249-257.
- Girault S, Davioud-Charvet E, Salmon L, Berecibar A, Debrey MA, Sergheraert C 1998. Structure-activity relationships in 2-aminodiphenylsulfides against trypanothione reductase from *Trypanosoma cruzi*. *Bioorg Med Chem Lett* 8: 1175-1180.
- Girault S, Davioud-Charvet TE, Maes L, Dubremetz JF, Debrey MA, Landry V, Sergheraert C. 2001. Potent and specific inhibitors of trypanothione reductase from *Trypanosoma cruzi*: bis(2-aminodiphenylsulfides) for fluorescent labeling studies. *Bioorg Med Chem* 9:837-846.
- Gotz MG, Caffrey CR, Hansell E, McKerrow JH, Powers JC. 2004. Peptidyl allyl sulfones: a new class of inhibitors for clan CA cysteine proteases. *Bioorg Med Chem* 12:5203-5211.
- Greenbaum DC, Mackey Z, Hansell E, Doyle P, Gut J, Caffrey CR, Lehrman J, Rosenthal PJ, McKerrow JH, Chibale K. 2004. Synthesis and structure-activity relationships of parasiticidal thiosemicarbazone cysteine protease inhibitors against *Plasmodium falciparum*, *Trypanosoma brucei*, and *Trypanosoma cruzi*. *J Med Chem* 47:3212-3219.
- Guedes PMD, Urbina JA, deLana M, Afonso LCC, Veloso VM, Tafuri WL, MachadoCoelho GLL, Chiari E, Bahia MT. 2004. Activity of the new triazole derivative albaconazole against *Trypanosoma (Schizotrypanum) cruzi* in dog hosts. *Antimicrob Agents Chemother* 48:4286-4292.
- Gutierrez-Correa J, KrauthSiegel RL, Stoppani AOM. 2003. Phenothiazine radicals inactivate *Trypanosoma cruzi* dihydrolipoamide dehydrogenase: Enzyme protection by radical scavengers. *Free Radical Res* 37:281-291.
- Henderson GB, Ulrich P, Fairlamb AH, Rosemberg I, Pereira M, Sela M, Cerami A 1988. "Subversive" substrates for the enzyme trypanothione disulphide reductase, alternative approach to chemotherapy of Chagas disease. *Proc Natl Acad Sci USA* 85: 5374-5378.
- Higuchi ML, Benvenuti LA, Martins RM, Metzger M. 2003. Pathophysiology of the heart in Chagas' disease: current status and new developments. *Cardiovasc Res* 60:96-107.
- Hotez PJ, Remme JH, Buss P, Alleyne G, Morel C, Breman JG. 2004. Combating tropical infectious diseases: report of the Disease Control Priorities in Developing Countries Project. *Clin Infect Dis* 38:871-878.

- Huang L, Ellman JA. 2002. General solid-phase method to prepare novel cyclic ketone inhibitors of the cysteine protease cruzain. *Bioorg Med Chem Lett* 12:2993-2996.
- Hurtado-Guerrero R, Pena-Diaz J, Montalvetti A, Ruiz-Perez LM, Gonzalez-Pacanowska D. 2002. Kinetic properties and inhibition of *Trypanosoma cruzi* 3-hydroxy-3-methylglutaryl CoA reductase. *FEBS Lett* 510:141-144.
- Jockers-Scherubl MC, Schirmer RH, Krauth-Siegel RL. 1989. Trypanothione reductase from *Trypanosoma cruzi*. Catalytic properties of the enzyme and inhibition studies with trypanocidal compounds. *Eur J Biochem* 180:267-272.
- Khabnadideh S, Pez D, Musso A, Brun R, Perez LMR, GonzalezPacanowska D, Gilbert IH. 2005. Design, synthesis and evaluation of 2,4-diaminoquinazolines as inhibitors of trypanosomal and leishmanial dihydrofolate reductase. *Bioorgan Med Chem* 13:2637-2649.
- Khan MO, Austin SE, Chan C, Yin H, Marks D, Vaghjiani SN, Kendrick H, Yardley V, Croft SL, Douglas KT. 2000. Use of an additional hydrophobic binding site, the Z site, in the rational drug design of a new class of stronger trypanothione reductase inhibitor, quaternary alkylammonium phenothiazines. *J Med Chem* 43:3148-56.
- Kosec G, Alvarez VE, Agüero F, Sanchez D, Dolinar M, Turk B, Turk V, Cazzulo JJ. 2006. Metacaspases of *Trypanosoma cruzi*: Possible candidates for programmed cell death mediators. *Mol Biochem Parasitol* 145:18-28.
- Krauth-Siegel RL, Bauer H, Schirmer RH. 2005. Dithiol proteins as guardians of the intracellular redox milieu in parasites: old and new drug targets in trypanosomes and malaria-causing plasmodia. *Angew Chem Int Ed Engl* 44:690-715.
- Krauth-Siegel RL, Enders B, Henderson GB, Fairlamb AH, Schirmer RH 1987. Trypanothione reductase from *Trypanosoma cruzi*. Purification and characterization of the crystalline enzyme. *Eur J Biochem* 164: 123-128
- Lakhdar-Ghazal F, Blonski C, Willson M, Michels P, Perie J. 2002. Glycolysis and proteases as targets for the design of new anti-trypanosome drugs. *Curr Top Med Chem* 2:439-456.
- Lazardi K, Urbina JA, de Souza W. 1990. Ultrastructural alterations induced by two ergosterol biosynthesis inhibitors, ketoconazole and terbinafine, on epimastigotes and amastigotes of *Trypanosoma (Schizotrypanum) cruzi*. *Antimicrob Agents Chemother* 34:2097-2105.
- Liendo A, Lazardi K, Urbina JA. 1998. *In vitro* antiproliferative effects and mechanism of action of the bis-triazole D0870 and its S(-) enantiomer against *Trypanosoma cruzi*. *J Antimicrob Chemother* 41:197-205.
- Linares GEG, Ravaschino EL, Rodriguez JB. 2006. Progresses in the field of drug design to combat tropical protozoan parasitic diseases. *Curr Medicinal Chem* 13:335-360.
- Magaraci F, Jimenez CJ, Rodrigues C, Rodrigues JCF, Braga MV, Yardley V, deLucaFradley K, Croft SL, DeSouza W, RuizPerez LM, Urbina J, Pacanowska DG, Gilbert IH. 2003. Azasterols as inhibitors of sterol 24-methyltransferase in *Leishmania* species and *Trypanosoma cruzi*. *J Med Chem* 46:4714-4727.
- Maldonado RA, Molina J, Payares G, Urbina JA. 1993. Experimental chemotherapy with combinations of ergosterol biosynthesis inhibitors in murine models of Chagas' disease. *Antimicrob Agents Chemother* 37:1353-1359.
- Marino APMP, Silva AA, Santos PVA, Pinto LMO, Gazinelli RT, Teixeira MM, LannesVieira J. 2005. CC-chemokine receptors: a potential therapeutic target for *Trypanosoma cruzi*-elicited myocarditis. *Mem Inst Oswaldo Cruz* 100:93-96.
- Marr JJ 1991. Purine analogs as chemotherapeutic agents in leishmaniasis and American trypanosomiasis. *J Lab Clin Med* 118: 111-119.
- Martin MB, Grimley JS, Lewis JC, Heath HT, 3rd, Bailey BN, Kendrick H, Yardley V, Caldera A, Lira R, Urbina JA, Moreno SN, Docampo R, Croft SL, Oldfield E 2001. Bisphosphonates inhibit the growth of *Trypanosoma brucei*, *Trypanosoma cruzi*, *Leishmania donovani*, *Toxoplasma gondii*, and *Plasmodium falciparum*: A potential route to chemotherapy. *J Med Chem* 44: 909-916.
- Mathis AM, Holman JL, Sturk LM, Ismail MA, Boykin DW, Tidwell RR, Hall JE. 2006. Accumulation and intracellular distribution of antitrypanosomal diamidine compounds DB75 and DB820 in African trypanosomes. *Antimicrob Agents Chemother* 50:2185-2191.
- Maya JD, Bollo S, NunezVergara LJ, Squella JA, Repetto Y, Morello A, Perie J, Chauviere G. 2003. *Trypanosoma cruzi*: effect and mode of action of nitroimidazole and nitrofurant derivatives. *Biochem Pharmacol* 65:999-1006.
- McCabe RE, Remington JS, Araújo FG 1986. *In vitro* and *in vivo* effects of itraconazole against *Trypanosoma cruzi*. *Am J Trop Med Hyg* 35: 280-284.

- McCabe RE, Remington JS, Araujo FG. 1987. Ketoconazole promotes parasitological cure of mice infected with *Trypanosoma cruzi*. *Trans R Soc Trop Med Hyg* 81:613-615.
- Meiering S, Inhoff O, Mies J, Vincek A, Garcia G, Kramer B, Dormeyer M, KrauthSiegler RL. 2005. Inhibitors of *Trypanosoma cruzi* trypanothione reductase revealed by virtual screening and parallel synthesis. *J Med Chem* 48:4793-4802.
- Midgley I, Fitzpatrick K, Taylor LM, Houchen TL, Henderson SJ, Wright SJ, Cybulski ZR, John BA, McBurney A, Boykin DW, Trendler KL. 2007. Pharmacokinetics and metabolism of the prodrug DB289 in rat and monkey and its conversion to the antiprotozoal/antifungal drug DB75. *Drug Metab Dispos* Mar 14; [Epub ahead of print].
- Molina J, Brener Z, Romanha AJ, Urbina JA. 2000a. In vivo activity of the bis-triazole D0870 against drug-susceptible and drug-resistant strains of the protozoan parasite *Trypanosoma cruzi*. *J Antimicrob Chemother* 46:137-140.
- Molina J, Martins-Filho O, Brener Z, Romanha AJ, Loebenberg D, Urbina JA. 2000b. Activities of the triazole derivative SCH 56592 (posaconazole) against drug-resistant strains of the protozoan parasite *Trypanosoma (Schizotrypanum) cruzi* in immunocompetent and immunosuppressed murine hosts. *Antimicrob Agents Chemother* 44: 150-155.
- Moncayo A, Ortiz-Yanine MI. 2006. An update on Chagas disease (human American trypanosomiasis). *Ann Trop Med Parasitol* 100:663-677.
- Montalvetti A, Bailey BN, Martin MB, Severin GW, Oldfield E, DoCampo R. 2001. Bisphosphonates are potent inhibitors of *Trypanosoma cruzi* farnesyl pyrophosphate synthase. *J Biol Chem* 276: 33930-33937.
- Morello A, Maya JD. 2005. Buthionine sulfoximine increases the toxicity of nifurtimox and benznidazole to *Trypanosoma cruzi*. *Antimicrob Agents Chemother* 49:126-30.
- Oliaro-Bosso S, Viola F, Matsuda S, Cravotto G, Tagliapietra S, Balliano G. 2004. Umbelliferone aminoalkyl derivatives as inhibitors of oxidosqualene cyclases from *Saccharomyces cerevisiae*, *Trypanosoma cruzi*, and *Pneumocystis carinii*. *Lipids* 39:1007-1012.
- Oliaro-Bosso S, Ceruti M, Balliano G, Milla P, Rocco F, Viola F. 2005. Analogs of squalene and oxidosqualene inhibit oxidosqualene cyclase of *Trypanosoma cruzi* expressed in *Saccharomyces cerevisiae*. *Lipids* 40:1257-1262.
- OPAS (1999) Tratamiento Etiológico de la Enfermedad de Chagas, Conclusiones de una Consulta Técnica. Document PS/HCP/HCT/140/99. Washington, DC: PAHO.
- Otero L, Vieites M, Boiani L, Denicola A, Rigol C, Opazo L, OleaAzar C, Maya JD, Morello A, KrauthSiegler RL, Piro OE, Castellano E, Gonzalez M, Gambino D, Cerecetto H. 2006. Novel antitrypanosomal agents based on palladium nitrofurylthiosemicarbazone complexes: DNA and redox metabolism as potential therapeutic targets. *J Med Chem* 49:3322-3331.
- Parveen S, Khan MOF, Austin SE, Croft SL, Yardley V, Rock P, Douglas KT. 2005. Antitrypanosomal, antileishmanial, and antimalarial activities of quaternary arylalkylammonium 2-amino-4-chlorophenyl phenyl sulfides, a new class of trypanothione reductase inhibitor, and of N-acyl derivatives of 2-amino-4-chlorophenyl phenyl sulfide. *J Med Chem* 48:8087-8097.
- Pena-Diaz J, Montalvetti A, Flores CL, Constan A, Hurtado-Guerrero R, De SW, Gancedo C, Ruiz-Perez LM, Gonzalez-Pacanowska D. 2004. Mitochondrial localization of the mevalonate pathway enzyme 3-Hydroxy-3-methyl-glutaryl-CoA reductase in the Trypanosomatidae. *Mol Biol Cell* 15:1356-1363.
- Perez-Fuentes R, Guegan JF, Barnabe C, Lopez-Colombo A, Salgado-Rosas H, Torres-Rasgado E, Briones B, Romero-Diaz M, Ramos-Jimenez J, Sanchez-Guillen MC. 2003. Severity of chronic Chagas disease is associated with cytokine/antioxidant imbalance in chronically infected individuals. *Int J Parasitol* 33:293-299.
- Pérez-Gutiérrez E, Agrelo RS, Figueiroa R (2006) Consulta técnica em epidemiologia, prevenção e manejo da transmissão da doença de Chagas como doença transmitida por alimentos. *Rev Soc Bras Med Tropical* 39:512-514.
- Perie J, Riviere-Alric I, Blonski C, Gefflaut T, Lauth d, V, Trinquier M, Willson M, Opperdoes FR, Callens M. 1993. Inhibition of the glycolytic enzymes in the trypanosome: an approach in the development of new leads in the therapy of parasitic diseases. *Pharmacol Ther* 60:347-365.
- Pez D, Leal I, Zuccotto F, Boussard C, Brun R, Croft SL, Yardley V, Ruiz Perez LM, Gonzalez PD, Gilbert IH. 2003. 2,4-Diaminopyrimidines as inhibitors of Leishmanial and Trypanosomal dihydrofolate reductase. *Bioorg Med Chem* 11:4693-4711.

- Rassi A, Luquetti AO, Rassi A Jr., Rassi GG, Rassi SG, Rassi AG. 2007. Specific treatment for *Trypanosoma cruzi*: lack of efficacy of allopurinol in the human chronic phase of Chagas disease. *Am J Trop Med Hyg* 76:58-61.
- Reche P, Arrebola R, Santi DV, Gonzalez-Pacanowska D, Ruiz-Perez LM 1996. Expression and characterization of the *Trypanosoma cruzi* dihydrofolate reductase domain. *Mol Biochem Parasitol* 76: 175-185.
- Rivarola HW, Paglini-Oliva PA. 2002. *Trypanosoma cruzi* trypanothione reductase inhibitors: phenothiazines and related compounds modify experimental Chagas' disease evolution. *Curr Drug Targets Cardiovasc Haematol Disord* 2:43-52.
- Roberts CW, McLeod R, Rice DW, Ginger M, Chance ML, Goad LJ. 2003. Fatty acid and sterol metabolism: potential antimicrobial targets in apicomplexan and trypanosomatid parasitic protozoa. *Mol Biochem Parasitol* 126:129-142.
- Rodrigues CR, Flaherty TM, Springer C, McKerrow JH, Cohen FE. 2002. CoMFA and HQSAR of acylhydrazide cruzain inhibitors. *Bioorg Med Chem Lett* 12:1537-1541.
- Rodriguez JB 2001. Specific molecular targets to control tropical diseases. *Curr Pharm Des* 7: 1105-1116.
- Roush WR, Cheng JM, KnappReed B, Alvarez-Hernandez A, McKerrow JH, Hansell E, Engel JC. 2001. Potent second generation vinyl sulfonamide inhibitors of the trypanosomal cysteine protease cruzain. *Bioorg Med Chem Letter* 11:2759-2762.
- Salmon-Chemin L, Buisine E, Yardley V, Kohler S, Debreu MA, Landry V, Sergheraert C, Croft SL, Krauth-Siegel RL, Davioud-Charvet E 2001. 2- and 3-substituted 1,4-naphthoquinone derivatives as subversive substrates of trypanothione reductase and lipoamide dehydrogenase from *Trypanosoma cruzi*: Synthesis and correlation between redox cycling activities and *in vitro* cytotoxicity. *J Med Chem* 44: 548-565.
- Schmidt A, Krauth-Siegel RL. 2002. Enzymes of the trypanothione metabolism as targets for antitrypanosomal drug development. *Curr Top Med Chem* 2:1239-1259.
- Schofield CJ, Jannin J, Salvatella R. 2006. The future of Chagas disease control. *Trends Parasitol* 22:583-588.
- Senkovich O, Bhatia V, Garg N, Chattopadhyay D. 2005. Lipophilic antifolate trimetrexate is a potent inhibitor of *Trypanosoma cruzi*: Prospect for chemotherapy of Chagas' disease. *Antimicrob Agents Chemother* 49:3234-3238.
- Siles R, Chen SE, Zhou M, Pinney KG, Trawick ML. 2006. Design, synthesis, and biochemical evaluation of novel cruzain inhibitors with potential application in the treatment of Chagas' disease. *Bioorg Med Chem Lett* 16:4405-4409.
- Silva CF, Meuser MB, Mota RA, De Souza EM, Stephens CE, Som P, Boykin DW, Soeiro MNC (2007a) Activity of "reversed" diamidines against *Trypanosoma cruzi* *in vitro*. *Biochemical Pharmacol*, *no prelo*.
- Silva CF, Meuser MB, De Souza EM, Meirelles MNL, Stephens CE, Som P, Boykin DW, Soeiro MNC (2007b) Cellular effects of reversed amidines on *Trypanosoma cruzi*. *Antimicrob Agents Chemother*, submetido à publicação
- Soeiro MNC, De Souza EM, Stephens CE, Boykin DW. 2005. Aromatic diamidines as antiparasitic agents. *Expert Opin Investig Drugs* 14:957-972.
- Sosa Estani S, Segura EL, Ruiz AM, Velazquez E, Porcel BM, Yampotis C 1998. Efficacy of chemotherapy with benznidazole in children in the indeterminate phase of Chagas disease. *Am J Trop Med Hyg* 59: 526-529.
- Souza DH, Garratt RC, Araújo AP, Guimarães BG, Jesus WD, Michels PA, Hannaert V, Oliva G 1998. *Trypanosoma cruzi* glycosomal glyceraldehyde-3-phosphate dehydrogenase: Structure, catalytic mechanism and targeted inhibitor design. *FEBS Lett* 424: 131-135.
- Stephens CE, Tanious F, Kim S, Wilson WD, Schell WA, Perfect JR, Franzblau SG, Boykin DW. 2001. Diguanidino and "reversed" diamidino 2,5-diarylfurans as antimicrobial agents. *J Med Chem* 44:1741-8.
- Stephens CE, Brun R, Salem MM, Werbovetz KA, Tanious F, Wilson WD, Boykin DW. 2003. The activity of diguanidino and "reversed" diamidino 2,5-diarylfurans versus *Trypanosoma cruzi* and *Leishmania donovani*. *Bioorg Med Chem Lett* 13:2065-2069.
- Steverding D, Tyler KM. 2005. Novel antitrypanosomal agents. *Expert Opin Investig Drugs* 14:939-955.
- Steverding D, Caffrey CR, Sajid M. 2006. Cysteine proteinase inhibitors as therapy for parasitic diseases: advances in inhibitor design. *Mini Rev Med Chem* 6:1025-1032.

- Stewart M, Krishna, S, Burchmore, RS., Brum, R, de Koning HP., Boykin, DW., Tidwell, RR., Hall, JE., Barrett, MP. 2005. Detection of arsenical drug resistance in *Trypanosoma brucei* with a simple fluorescence test. *Lancet* 366:486-87.
- Stoppani AOM 1999. The chemotherapy of Chagas disease. *Medicina (B Aires)* 59: 147-165.
- Szajnman SH, Montalvetti A, Wang Y, Docampo R, Rodriguez JB. 2003. Bisphosphonates derived from fatty acids are potent growth inhibitors of *Trypanosoma cruzi* farnesyl pyrophosphate synthase. *Bioorg Med Chem Lett* 13:3231-3235.
- Szajnman SH, Ravaschino EL, Docampo R, Rodriguez JB. 2005. Synthesis and biological evaluation of 1-amino-1,1-bisphosphonates derived from fatty acids against *Trypanosoma cruzi* targeting farnesyl pyrophosphate synthase. *Bioorg Med Chem Lett* 15:4685-4690.
- Tidwell RR, Boykin DW. 2003. *Minor groove binders as antimicrobial agents. In: Small Molecule DNA and RNA Binder: Synthesis to nucleic acid complexes. Wiley-VCH: New York, pp. 416-460.*
- Tomazela DM, Pupo MT, Passador EA, da Silva MF, Vieira PC, Fernandes JB, Fo ER, Oliva G, Pirani JR 2000. Pyrano chalcones and a flavone from *Neoraputia magnifica* and their *Trypanosoma cruzi* glycosomal glyceraldehyde-3-phosphate dehydrogenase-inhibitory activities. *Phytochemistry* 55: 643-651.
- Trouiller P, Olliaro P, Torreele E, Orbinski J, Laing R, Ford N. 2002. Drug development for neglected diseases: a deficient market and a public-health policy failure. *Lancet* 359:2188-2194.
- Ullman B, Carter D 1997. Molecular and biochemical studies on the hypoxanthine-guanine phosphoribosyltransferases of the pathogenic haemoflagellates. *Int J Parasitol* 27: 203-213.
- Urbina JA. 1997. Lipid biosynthesis pathways as chemotherapeutic targets in kinetoplastid parasites. *Parasitology* 114 Suppl:S91-99.
- Urbina JA. 2002. Chemotherapy of Chagas disease. *Curr Pharm Des* 8:287-295.
- Urbina JA. 2003. New chemotherapeutic approaches for the treatment of Chagas disease (American Trypanosomiasis). *Expert Opin Ther Patents* 13:661-669.
- Urbina JA, Lazardi K, Aguirre T, Piras MM, Piras R. 1988. Antiproliferative synergism of the allylamine SF 86-327 and ketoconazole on epimastigotes and amastigotes of *Trypanosoma (Schizotrypanum) cruzi*. *Antimicrob Agents Chemother* 32:1237-1242.
- Urbina JA, Lazardi K, Marchan E, Visbal G, Aguirre T, Piras MM, Piras R, Maldonado RA, Payares G, de Souza W. 1993. Mevinolin (lovastatin) potentiates the antiproliferative effects of ketoconazole and terbinafine against *Trypanosoma (Schizotrypanum) cruzi*: *in vitro* and *in vivo* studies. *Antimicrob Agents Chemother* 37:580-591.
- Urbina JA, Moreno B, Vierkotter S, Oldfield E, Payares G, Sanoja C, Bailey BN, Yan W, Scott DA, Moreno SN, DoCampo R 1999. *Trypanosoma cruzi* contains major pyrophosphate stores, and its growth *in vitro* and *in vivo* is blocked by pyrophosphate analogs. *J Biol Chem* 274: 33609-33615.
- Urbina JA, Lira R, Visbal G, Bartroli J 2000. *In vitro* antiproliferative effects and mechanism of action of the new triazole derivative UR-9825 against the protozoan parasite *Trypanosoma (Schizotrypanum) cruzi*. *Antimicrob Agents Chemother* 44:2498-2502.
- Urbina JA, Concepcion JL, Montalvetti A, Rodriguez JB, Docampo R. 2003a. Mechanism of action of 4-phenoxyphenoxyethyl thiocyanate (WC-9) against *Trypanosoma cruzi*, the causative agent of Chagas' disease. *Antimicrob Agents Chemother* 47:2047-2050.
- Urbina JA, Payares G, Sanoja C, Molina J, Lira R, Brener Z, Romanha AJ. 2003b. Parasitological cure of acute and chronic experimental Chagas disease using the long-acting experimental triazole TAK-187. Activity against drug-resistant *Trypanosoma cruzi* strains. *Int J Antimicrob Agents* 21:39-48.
- Urbina JA, Payares G, Sanoja C, Lira R, Romanha AJ. 2003c. *In vitro* and *in vivo* activities of ravuconazole on *Trypanosoma cruzi*, the causative agent of Chagas disease. *Int J Antimicrobial Agents* 21:27-38.
- Urbina JA, Concepcion JL, Caldera A, Payares G, Sanoja C, Otomo T, Hiyoshi H. 2004. *In Vitro* and *in vivo* activities of E5700 and ER-119884, two novel orally active squalene synthase inhibitors, against *Trypanosoma cruzi*. *Antimicrob Agents Chemother* 48:2379-2387.
- Viotti R, Vigliano C, Armenti H, Segura E 1994. Treatment of chronic Chagas disease with benznidazole: Clinical and serologic evolution of patients with long-term follow-up. *Am Heart J* 127: 151-162.
- Viotti R, Vigliano C, Lococo B, Bertocchi G, Petti M, Alvarez MG, Postan M, Armenti A. 2006. Long-term cardiac outcomes of treating chronic Chagas disease with benznidazole versus no treatment: a nonrandomized trial. *Ann Intern Med* 144:724-734.

- Watson NS, Procopiou PA. 1996. Squalene synthase inhibitors: their potential as hypocholesterolemic agents. *Prog Med Chem* 33:331-378.
- Werbovets K. 2006. Diamidines as antitrypanosomal, antileishmanial and antimalarial agents. *Curr Opin Investig Drugs* 7:147-157.
- Wilson LS, Strosberg AM, Barrio K. 2005. Cost-effectiveness of Chagas disease interventions in Latin America and the Caribbean: Markov models. *Amer J Trop Med Hyg* 73:901-910.
- Xavier SS, Sousa AS, Vinas PA, Junqueira AC, Boia MN, Coura JR. 2006. Chronic chagasic cardiopathy in the Rio Negro, Amazon State. Report of three new autochthonous cases confirmed by serology, clinical examination, chest X-rays, electro and echocardiography. *Rev Soc Bras Med Trop* 39:211-216.

“A história da terapêutica da doença de Chagas” (José Rodrigues Coura, Joaquim Romeu Cançado)

- Andrade AL, Zlicker F, de Oliveira RM, Almolda Silva S, Luquetti A, Travassos LR, Almeida IC, De Andrade SS, de Andrade JG, Martelli CM 1996. Randomized trial of efficacy of benznidazole in treatment of early *Trypanosoma cruzi* infection. *Lancet* 348: 1407-1413.
- Bocca- Tourres LC 1969. La enfermedad de Chagas en período agudo y su tratamiento con el Bay 2502. *Boi Chil Parasitol* 24: 24-27.
- Bock M, Gonert R, Haberkorn A 1969. Studies with Bay 2502 on animals. *Boi Chil Parasitol* 24: 13-19.
- Brener Z 1961. Atividade terapêutica do 5-nitrofuraldéido- semicarbazona (nitrofurazona) em esquemas de duração prolongada na infecção experimental pelo *Trypanosoma cruzi*. *Rev Inst Med Trop São Paulo* 3: 43-49.
- Brener Z 1968. Terapêutica experimental da doença de Chagas. In JR Cançado, *Doença de Chagas*. Belo Horizonte, Imprensa Oficial de Minas Gerais, Minas Gerais, p. 510-516.
- Brener Z, Cançado JR, Galvão LM, Da Luz ZM, Filardi LS, Pereira ME, Santos LM, Cançado CB 1993. An experimental and clinical assay with ketoconazole in the treatment of Chagas disease. *Mem Inst Oswaldo Cruz* 88: 149-153 .
- Cançado JR 1963. Aspectos clínicos na padronização dos métodos de avaliação terapêutica na doença de Chagas. *Rev Goiana Med* 9 (Supl.): 212-232.
- Cançado JR 1968. Tratamento da doença de Chagas. In JR Cançado, *Doença de Chagas*, Imprensa Oficial de Minas Gerais, Minas Gerais, p. 517 - 540.
- Cançado JR 2002. Long term evaluation on etiological treatment of Chagas disease with benznidazole. *Rev. Inst. Med. Trop. S. Paulo*, 44: 29-37.
- Cançado JR, Brener Z 1979. Terapêutica. In Z Brener, Z Andrade (eds), *Trypanosoma cruzi e Doença de Chagas*, Guanabara Koogan, Rio de Janeiro, p. 362-424
- Cançado JR, Duval Marra U, Mourão OG, Álvares JM, Oliveira J, Salgado A 1973. Bases para avaliação do tratamento específico da doença de Chagas humana segundo a parasitemia. *Rev Soc Bras Med Trop* 7: 155-166.
- Cançado JR, Marra UD, Brener Z 1964. Ensaio terapêutico clínico com a 5-nitro-2-furaldeído-semicarbazona (Nitrofurazona) na forma crônica da doença de Chagas. *Rev Inst Med Trop São Paulo* 6: 12-16.
- Cançado JR, Marra UD, Lopes M, Mourão O, Faria CAF, Álvares JM, Salgado AA 1969. Toxicidade y valor terapêutico del Bay 2502 en la enfermedad de Chagas in tres esquemas posológicos. *Boi Chil Parasitol* 24: 28-32.
- Cançado JR, Salgado AA, Marra UD, Alvares JM, Machado JR 1975. Clinical therapeutic trial in chronic Chagas disease using nifurtimox in 3 schedules of long duration. *Rev Inst Med Trop São Paulo* 17: 111-127.
- Chagas C, Chagas E 1935. Manual de Doenças Tropicais e Infectuosas, volume I. Livraria Editora Freitas Bastos, Rio de Janeiro, 189 p.
- Coura JR, Silva JR 1961. Aspectos atuais do tratamento da doença de Chagas. *Rev Bras Med* 51: 283-290.
- Coura JR, Ferreira LF, Silva JR 1962. Experiências com nitrofurazona na fase crônica da doença de Chagas. *O Hospital* 62: 957-964.
- Coura JR, Brindeiro PJ, Ferreira I 1978. Benznidazole in the treatment of Chagas disease. *Current Chemotherapy. Proc 10th Int Cong Chemotherapy* 1: 161-162.
- Coura JR, de Abreu LL, Willcox HP, Petana W 1997. Comparative controlled study on the use of benznidazole, nifurtimox and placebo, in the chronic form of Chagas disease, in a field

- area with interrupted transmission. J. Preliminary evaluation. *Rev Soc Bras Med Trop* 30: 139-144.
- Coura JR, Castro SL 2002. A critical review on Chagas disease chemotherapy. Mem. Inst. Oswaldo Cruz, 3-24.
- De Castro SL 1993. The challenge of Chagas disease chemotherapy: an update of drugs assayed against *Trypanosoma cruzi*. *Acta Trop* 53: 83-98.
- DoCampo R 2001. Recent developments in the chemotherapy of Chagas disease. *Curr Pharm Design* 7: 1157-1164.
- Ferreira HO 1961. Forma aguda da doença de Chagas tratada pela nitrofurazona. *Rev Inst Med Trop São Paulo* 3: 287-289.
- Ferreira HO 1962. Fase aguda da doença de Chagas. *O Hospital* 61:307-311.
- Ferreira HO, Prata A, Rassi A 1963. Administração prolongada de nitrofurazona no tratamento da doença de Chagas aguda. *O Hospital* 63: 131-139.
- Galleano RH, Marr JJ, Sosa RR 1990. Therapeutic efficacy of allopurinol in patients with chronic Chagas disease. *Am J Trop Med Hyg* 43: 159-166.
- Lacunza CD, Negrete OS, Mora MC, Uncos A, Segura MA, Castillo ND, Garayzabal MI, Basombrio MA 2006. Use of the polymerase chain reaction (PCR) for early evaluation of the etiological treatment in young adults, chronically infected with *Trypanosoma cruzi*. *Rev. Patol Trop*, 35: 227-232.
- Lauria-Pires L, Castro CN, Emanuel A, Prata A 1988. Ineficácia do allopurinol em pacientes na fase aguda da doença de Chagas. *Rev Soc Med Trop* 21: 79
- Macêdo VO, Silveira CA 1987. Perspectivas da terapêutica específica na doença de Chagas. Experiências na forma indeterminada. *Rev Soc Bras Med Trop* 20 (Supl II): M24-M26.
- Mayer M, Rocha Lima H 1912. Zur Entwicklung von *Schizotrypanum cruzi* in Saengatieren. *Arch Schiffs u Tropen Hyg* 16: 90-94 .
- Mayer M, Rocha Lima H 1914. Zum Verhalten von *Schizotrypanum cruzi* in Warmbluetern und Arthropoden. *Arch Schiffs u Tropen-Hyg* 5: 101-136.
- Molina J, Martins-Filho O, Brener Z, Romanha AJ, Loebenberg D, Urbina JA 2000. Activities of the triazole derivative SCH 56592 (posaconazole) against drug-resistant strains of the protozoan parasite *Trypanosoma (Schizotrypanum) cruzi* in immunocompetent and immunosuppressed murine hosts. *Antimicrob Agents Chemother* 44: 150-155.
- Molina J, Urbina J, Gref R, Brener Z, Rodrigues Junior JM 2001. Cure of experimental Chagas disease by the bis-triazole D0870 incorporated into "stealth" polyethyleneglycolpoly lactide nanospheres. *J Antimicrob Chemother* 47: 101-104.
- Packchanian A 1952. Chemotherapy of experimental Chagas disease with nitrofurans compounds. *J Parasitol* 38: 30-40.
- Packchanian A 1957. Chemotherapy of experimental Chagas disease with nitrofurans compounds. *Antibiotics & Chemotherapy* 7: 13-23.
- Rassi A, Ferreira HO 1971. Tentativas de tratamento específico da fase aguda da doença de Chagas com nitrofuranos em esquemas de duração prolongada. *Rev Soc Bras Med Trop* 5: 235- 262.
- Rassi A, Luquetti AO 1992. Therapy of Chagas disease. In S Wendel, Z Brener, E Camargo, A Rassi (eds), *Chagas Disease (American Trypanosomiasis): its Impact on Transfusion and Clinical Medicine*. ISBT, São Paulo, p. 237-247.
- Rubio M, Donoso F 1969. Enfermedad de Chagas en niños y tratamiento con Bay 2502. *Bol Chil Parasitol* 24: 43-48.
- Schenone H, Concha L, Aranda R, Rojas A, Alfaro E 1969. Experiência terapêutica con el Bayer 2502 en la infección chagásica crónica del adulto. Importancia del uso adecuado del xenodiagnóstico. *Bol Chil Parasitol* 24: 66-69.
- Schenone H, Concha L, Aranda R, Rojas A, Alfaro E, Knierin E, Rojo M 1975. Atividade quimioterápica de um derivado nitroimidazolacetarnida na infecção chagásica crônica. *Bol Chil Parasitol* 30: 91-93.
- Schenone H, Concha L, Aranda R, Rojas A, Knierin F, Rojo M 1972. Treatment of chronic Chagas infection with Lampit. *Bol Chil Parasitol* 27: 11-14.
- Schenone H, Rojas A, Alfaro E, Concha L, Aranda R 1981. Estudio longitudinal de la persistencia de la acción terapéutica del nifurtimox y del benznidazol en pacientes con infección chagásica crónica. *Bol Chil Parasitol* 36: 59-62.
- Sosa Estani S, Segura EL, Ruiz AM, Velazquez E, Porcel BM, Yampotis C 1998. Efficacy of chemotherapy with benznidazole in children in the indeterminate phase of Chagas disease. *Am J Trop Med Hyg* 59: 526-529.

Urbina JA, Payares G, Molina J, Sanoja C, Liendo A, Lazard K, Piras MM, Piras R, Perez N, Wincker P, Ryley JF 1996. Cure of short – and long-term experimental Chagas disease using D0870. *Sciences* 273: 969-971.

Células-tronco: uma terapia viável na doença de Chagas? Presente e futuro (Milena B. P. Soares, Ricardo Ribeiro dos Santos)

Leri A, Hosoda T, Kajstura J, Anversa P. Heart failure and regenerative cardiology. *Regen Med.* 1(2):153-159, 2006.

Mota ACA, Soares MBP, Ribeiro dos Santos R. Uso de terapia regenerativa com células-tronco da medula óssea em doenças cardiovasculares – perspectiva do hematologista. *Rev Bras Hematol Hemoter* 27(2):127-133, 2005.

Jiang Y, Jahagirdar BN, Reinhardt RL, Schwartz RE, Keene CD, Ortiz-Gonzalez XR, Reyes M, Lenvik T, Lund T, Blackstad M, et al. Pluripotency of mesenchymal stem cells derived from adult marrow. *Nature* 418:41-49, 2002.

Soares MB, Lima RS, Rocha LL, Takyia CM, Pontes-de-Carvalho L, de Carvalho AC, Ribeiro-dos-Santos R. Transplanted bone marrow cells repair heart tissue and reduce myocarditis in chronic chagasic mice. *Am J Pathol* 164(2):441-447, 2004.

Guarita-Souza LC, Carvalho KA, Woitowicz V, Rebelatto C, Senegaglia A, Hansen P, Miyague N, Francisco JC, Olandoski M, Faria-Neto JR, Brofman P. Simultaneous autologous transplantation of cocultured mesenchymal stem cells and skeletal myoblasts improves ventricular function in a murine model of Chagas disease. *Circulation.* 114(1 Suppl):1120-4, 2006.

Vilas-Boas F, Feitosa GS, Soares MB, Mota A, Pinho-Filho JA, Almeida AJ, Andrade MV, Carvalho HG, Dourado-Oliveira A, Ribeiro-dos-Santos R Early results of bone marrow cell transplantation to the myocardium of patients with heart failure due to Chagas disease. *Arq Bras Cardiol.* 87(2):159-166, 2006.

Tura BR, Martino HF, Gowdak LH, dos Santos RR, Dohmann HF, Krieger JE, Feitosa G, Vilas-Boas F, Oliveira SA, Silva SA, Bozza AZ, Borojevic R, de Carvalho AC. Multicenter randomized trial of cell therapy in cardiopathies - MiHeart Study. *Trials* 18;8:2, 2007 .

EPIDEMIOLOGIA

Epidemiologia: situação atual (Adauto Jose Goncalves de Araújo, Paulo Chagastelles Sabroza, Luiz Fernando Rocha Ferreira da Silva)

Araújo A, Jansen AM, Bouchet F, Reinhard K, Ferreira LF 2003. Parasitism, the diversity of life, and paleoparasitology. *Mem Inst Oswaldo Cruz* 98 suppl 1: 5-11.

Araujo A, Dittmar, K, Jansen A, Reinhard K, Ferreira LF 2005.. Paleoparasitology of Chagas disease. *Revista da Sociedade Brasileira de Medicina Tropical* 38: 490.

Aufderheide, AC, Salo W, Madden M, streitz J, Buikstra J, Guhl F, Arriaza B, Renier C, Lorentz EW, Fornaciari G, Allison M, 2004. A 9,000-year record of Chagas' disease. *Proceedings of the National Academy of Sciences* 101: 2034-2039.

Bargues MD, Klisiowicz DR, Panzera F, Noireau F, Marcilla A, Perez R, Rojas MG, O'Connor JE, Gonzalez-Candelas F, Galvao C, Jurberg J, Carcavallo RU, Dujardin JP, Mas-Coma S 2006. Origin and phylogeography of the Chagas disease main vector, *Triatoma infestans* based on nuclear rDNA sequences and genome size. *Infect Genet Evol* 6(1): 46-62.

Bastos OM, Araújo A, Ferreira LF, Santoro A, Wincker P, Morel CM 1996. Experimental Paleoparasitology: identification of *T. cruzi* DNA in desiccated mouse tissue. *Paleopathol News* 94: 5-8.

Borges-Pereira J, Castro JA, Campos JH, Nogueira JS, Zanza PL, Cardoso MA, Britto C, Araújo A 2002. Estudo da infecção e morbidade da doença de Chagas no município de João Costa, Parque Nacional Serra da Capivara, Piauí, Brasil. *Rev Soc Bras Med Trop* 35: 315-322.

Coimbra Jr CEA 1988. Human settlements, demographic pattern, and epidemiology in lowland Amazonia: the case of Chagas disease. *Am Anthropol* 90: 82-97.

- Fernandes A, Lima VS, Souza SM, Dittmar K, Ferreira LF, Araujo A, Jansen AM, Vicente ACP 2007. Temporal variation of *T. cruzi* transmission among pre-Columbian populations of Brazil. In: VI World Congress on Mummy Studies, Tegui, Lanzarote. Programa y Resúmenes. Tegui. Atoche P, Ramirez MA, v. 1: 153-153.
- Dias JCP 1986. Perspectivas de controle da doença de Chagas no Brasil. *Cad. Saúde Públ* 2: 84-103.
- Dias JCP, Coura JR 1997. Epidemiologia. In: Dias JCP, Coura JR, orgs., Clínica e terapêutica da doença de Chagas. Uma abordagem prática para o clínico geral. Rio de Janeiro, Ed. Fiocruz. Pp 33-36.
- Dias JCP, Machado EMM, Fernandes AL, Vinhaes MC 2000. Esboço geral e perspectivas da doença de Chagas no Nordeste do Brasil. *Cad. Saúde Pública*. 16 (sup.2): S13-S34.
- Dias JCP 2007. Globalização, iniquidade e doença de Chagas. *Cad. Saúde Públ*. 23 (sup 1): 513-522.
- Dittmar, Katharina ; Jansen, Ana Maria ; Araújo, A. ; Reinhard, Karl . Molecular diagnosis of prehistoric *Trypanosoma cruzi* in the Texas-Coahuila border region. In: Thirteenth Annual Meeting of the Paleopathology Association, 2003, Tempe, Arizona. Supplement of the Paleopathology Newsletter. Detroit, EUA : Paleopathology Association, 2003. p. 4-4.
- Ferreira LF, Britto C, Cardoso MA, Fernandes O, Reinhard K, Araújo A 2000. Paleoparasitology of Chagas disease revealed by infected tissues from Chilean mummies.. *Acta Tropica* 75: 79-84.
- Fornaciari G, Castagna M, Viacava P, Tognetti A, Bevilacqua G, Segura EI 1992. Chagas' disease in a Peruvian Inca Mummy. *Lancet* 339: 128 – 129.
- Greenblatt C, Spigelman M 2003. Emerging Pathogens. Archaeology, Ecology and Evolution of Infectious Disease. Oxford, Biology. Oxford University Press. 250pp.
- Guhl F, Jaramillo C, Vallejo GA, Yockteng R, Cardenas-Arroyo F, Fornaciari G, Arriaza B, Aufderheide AC 1999. Isolation of *Trypanosoma cruzi* DNA in 4.000-year-old mummified human tissue from northern Chile. *Am J Phys Anthropol* 108: 401-407
- Kipnis R 2002. Foraging Societies of Eastern Central Brazil: An Evolutionary Ecological Study of Subsistence Strategies During the Terminal Pleistocene and Early/Middle Holocene. Ph.D. diss., University of Michigan.
- Lima VS, Yotsuki RK, Iñiguez A, Ferreira LF, Araújo A, Jansen AM, Vicente AC 2007. Seven thousand years of *Trypanosoma cruzi* infection in pre-Columbian Brazilian Indians.. In: VI World Congress on Mummy Studies, 2007, Tegui, Lanzarote. Programa y Resúmenes. Tegui : Pablo Atoche y Maria Angeles Ramirez, 2007. v. 1. p. 152-152.
- Ministério da Saúde 2006. Guia de Vigilância Epidemiológica. Série A. Normas e Manuais Técnicos. Brasília, DF. pp 282-296.
- Prous A, Schlobach M, 1997. Sepultamentos pré-históricos do Vale do Peruaçu-MG. Revista do Museu de Arqueologia e Etnologia da USP 7:3-21.
- Ramos Jr., Alberto N. and Carvalho, Diana Maul de Os diferentes significados da certificação conferida ao Brasil como estando livre da doença de Chagas. *Cad. Saúde Pública*, Dez 2001, vol.17, no.6, p.1403-1412.
- Reinhard K, Fink M, Skiles J 2003. A case of megacolon in Rio Grande Valley as a possible case of Chagas disease. *Mem Inst Oswaldo Cruz* 98 suppl 1: 165-172.
- Reinhard K, Dittmar K, Araujo A 2007. Cave living and transmission of Chagas disease in ancient times. In: VI World Congress on Mummy Studies, Tegui, Lanzarote. Programa y Resúmenes. Tegui. Atoche P, Ramirez MA, v. 1: 155-155.
- Schofield CJ, Jannin J, Salvatella R 2006. The future of Chagas disease control. *Trends in Parasitology* 22: 582-588.
- Sianto L, Reinhard K, Chame M, Chaves SM, Souza SMM, Gonçalves MLC, Fernandes A, Ferreira LF, Araújo A 2005. The Finding of *Echinostoma* sp. (Trematoda: Digenea) and Hookworm Eggs in Coprolites Collected from a Brazilian Mummified Body Dated of 600-1,200 Years Before Present. *The Journal of Parasitology* 91: 972-975.
- Rothhammer F, Allison MJ, Nuñez L, Staden V, Arriaza B 1985. Chagas Disease in pre-Columbian South America. *Am J Phys Anthropol* 68: 495-498.

Histórico: O primeiro inquérito sorológico nacional para doença de Chagas (Brasil, 1975-1980) (João Carlos Pinto Dias, Aluizio Rosa Prata)

Brasil 2002. Inquérito Sorológico Nacional de Prevalência da Infecção Chagásica. Brasília, Ministério da Saúde, Fundação Nacional de Saúde, 14 pp.

- Camargo ME & Hoshinu-Shimizu S 1974. Metodologia sorológica na infecção pelo Trypanosoma cruzi. Revista Goiana de Medicina 20: 47-65
- Camargo ME & Takeda GFK 1979. Diagnóstico de Laboratório. In Brener Z & Andrade ZA. Trypanosoma cruzi e doença de Chagas. Rio de Janeiro, Guanabara Koogan Editora, pp. 175-198.
- Camargo ME, Silva GR, Castilho EA & Silveira AC 1984. Inquérito sorológico da prevalência da infecção chagásica no Brasil, 1975-1981, Revista do Instituto de Medicina Tropical de São Paulo 26: 192-204.
- Camargo ME, Hoshinu-Shimizu S, Macedo V, Peres B, Castro CN, 1977. Diagnóstico sorológico da infecção pelo Trypanosoma cruzi. Estudo comparativo de testes de fixação de complemento, imunofluorescência, hemaglutinação e floculação em 3.624 soros. Revista do Instituto de Medicina Tropical de São Paulo 19: 254-260.
- Chagas CRJ 1911. Doença de Carlos Chagas ou thyreoidite parasitária. Nova doença humana transmitida pelo barbeiro (Conorhynchus megista). Segunda Conferência na Academia Nacional de Medicina. Revista Médica de São Paulo 14: 337-356.
- Coura JR 1990. Chagas' disease as endemic to the Brazilian Amazon: Risk or hypothesis? Revista da Sociedade Brasileira de Medicina Tropical 23: 67-70.
- Coura JR 1997. Síntese histórica e evolução dos conhecimentos sobre a Doença de Chagas. In Dias JCP & Coura JR (orgs) Clínica e Terapêutica da Doença de Chagas: uma abordagem prática para o clínico geral. Rio de Janeiro, Editora FIOCRUZ, pp. 469-486.
- Dias E 1959. Doença de Chagas, um problema americano. O Hospital 55: 57-65.
- Dias E, Laranja FS, Pellegrino J, 1948. Estudos sobre a importância social da doença de Chagas. I. Inquérito clínico-epidemiológico feito nas vizinhanças de Bambuí, Oeste de Minas Gerais. Brasil Médico 62: 412-413.
- Dias E, Laranja FS, Nery-Guimarães F, Brant TC, 1953. Estudo preliminar de inquéritos sorológico-eletrocardiográficos em populações não selecionadas de zonas não endêmicas e de zonas endêmicas de doença de Chagas. Revista Brasileira de Malariologia e Doenças Tropicais 5: 205-210.
- Dias JCP 1967. Prevalência de doença de Chagas em crianças da zona rural de Bambuí, MG, após ensaio profilático. Revista Brasileira de Malariologia e Doenças Tropicais 19: 135-159.
- Dias JCP 1974. Perspectivas para o controle da doença de Chagas humana em áreas endêmicas através de profilaxia domiciliar com inseticidas de ação residual. Experiência de Bambuí, Minas Gerais, Brasil. Dissertação de Mestrado. Belo Horizonte, Faculdade de Medicina da UFMG, 34 p.
- Dias JCP 2000. História da Infectologia. In Tonelli E & Freire LMS (organs.) Doenças Infecciosas na Infância e na Adolescência. Belo Horizonte. Medsi Editora, pp. 28-49.
- Dias JCP 2002. O controle da doença de Chagas no Brasil. In Silveira AC (organ.) El control de la Enfermedad de Chagas en los Países del Cono Sur de América. Historia de uma iniciativa internacional. Uberaba. OPS/Faculdade de Medicina do Triângulo Mineiro, pp. 145-250
- Dias JCP & Schofield CJ 1999. The evolution of Chagas Disease (American Trypanosomiasis) control after 90 years since Carlos Chagas discovery. Memórias do Instituto Oswaldo Cruz 94 (suppl. 1): 103 - 121
- Fiúsa Lima JT & Silveira AC 1984. Controle da transmissão e inquérito sorológico nacional. In Cançado JR & Chuster M (organs) Cardiopatia Chagásica. Belo Horizonte, Fundação Carlos Chagas, p. 371- 379.
- Freitas JLP 1947. Contribuição para o estudo do diagnóstico da moléstia de Chagas por processos de laboratório. Tese. São Paulo, Faculdade de Medicina da USP, 160 p.
- Guerreiro C, Machado A, 1913. Da reação de Bordet e Gengou na moléstia de Chagas como elemento diagnóstico. Nota prévia. Brasil Médico 27: 225-226.
- Laranja FS, Dias E, Nóbrega GC & Miranda A, 1956. Chagas' disease. A clinical, epidemiologic and pathologic study. Circulation, 14: 1035-1060.
- Macedo V, Prata A, Silva GR & Castilho EA 1982. Prevalência de alterações eletrocardiográficas em chagásicos (resultados preliminares do inquérito eletrocardiográfico nacional). Arquivos Brasileiros de Cardiologia 38: 261-264.
- Morel CM 1999. Chagas Disease, from discovery to control, and beyond: History, myths and lessons to take home. Memórias do Instituto Oswaldo Cruz 94 (Suppl. 1): 3-16.
- Muniz J, Freitas G, 1944. Contribuição para o diagnóstico da doença de Chagas pelas reações de imunidade. I. Estudo comparativo entre as reações de aglutinação e de fixação de complemento. Memórias do Instituto Oswaldo Cruz 41: 303-333.

- Prata AR, Mayrink W, Sodré AG & Almeida JO, 1976. Discrepâncias entre resultados de reações de Guerreiro e Machado executadas entre diferentes laboratórios. *Revista da Sociedade Brasileira de Medicina Tropical* 10: 103-105.
- Puigbó, JJ, Nava Rhode JR, Barrios HG & Yépez G, 1969. Cuatro años de estudio longitudinal de una comunidad rural com endemicidad chagásica. *Boletín de la Oficina Sanitaria Panamericana* 66: 112-120.
- Salgado AA & Pellegrino J 1968. Distribuição geográfica: inquérito sorológico. In Cançado JR (organ.) *Doença de Chagas*. Belo Horizonte, Imprensa Oficial, p. 143-168
- Silveira AC, Feitosa VR & Borges R, 1984. Distribuição de triatomíneos capturados no ambiente domiciliar no período 1975-1983. Brasil. *Revista Brasileira de Malariologia e Doenças Tropicais*, 36:15-312.
- Segura EL 2002. El control de la enfermedad de Chagas en la República Argentina. In Silveira AC (organ.) *El control de la Enfermedad de Chagas en los Países del Cono Sur de América*. Historia de una iniciativa internacional. Uberaba. OPS/Faculdade de Medicina do Triângulo Mineiro, p. 45-108.
- Silveira AC et al. 2002. El control de la Enfermedad de Chagas en los Países del Cono Sur de América. Historia de una iniciativa internacional. Uberaba. OPS/Faculdade de Medicina do Triângulo Mineiro, 316 p.
- Souza AG, Wanderley DMV, Buralli G, Andrade JCR, 1984. Consolidation of the control of Chagas' disease vectors in the State of São Paulo. *Memórias do Instituto Oswaldo Cruz* 79 (Suppl.): 125-132.
- WHO 1991. Control of Chagas Disease. Geneva. WHO Technical Report Series No. 811. 94 p.

Paleoepidemiologia da doença de Chagas (Adauto Jose Goncalves de Araújo, Paulo Chagastelles Sabroza, Luiz Fernando Rocha Ferreira da Silva)

- Araújo A, Jansen AM, Bouchet F, Reinhard K, Ferreira LF 2003. Parasitism, the diversity of life, and paleoparasitology. *Mem Inst Oswaldo Cruz* 98 suppl 1: 5-11.
- Araujo A, Dittmar, K, Jansen A, Reinhard K, Ferreira LF 2005.. Paleoparasitology of Chagas disease. *Revista da Sociedade Brasileira de Medicina Tropical* 38: 490.
- Aufderheide, AC, Salo W, Madden M, streitz J, Buikstra J, Guhl F, Arriaza B, Renier C, Lorentz EW, Fornaciari G, Allison M, 2004. A 9,000-year record of Chagas' disease. *Proceedings of the National Academy of Sciences* 101: 2034-2039.
- Bargues MD, Klisiowicz DR, Panzera F, Noireau F, Marcilla A, Perez R, Rojas MG, O'Connor JE, Gonzalez-Candelas F, Galvao C, Jurberg J, Carcavallo RU, Dujardin JP, Mas-Coma S 2006. Origin and phylogeography of the Chagas disease main vector, *Triatoma infestans* based on nuclear rDNA sequences and genome size. *Infect Genet Evol* 6(1): 46-62.
- Bastos OM, Araújo A, Ferreira LF, Santoro A, Wincker P, Morel CM 1996. Experimental Paleoparasitology: identification of *T. cruzi* DNA in desiccated mouse tissue. *Paleopathol News* 94: 5-8.
- Borges-Pereira J, Castro JA, Campos JH, Nogueira JS, Zanza PL, Cardoso MA, Britto C, Araújo A 2002. Estudo da infecção e morbidade da doença de Chagas no município de João Costa, Parque Nacional Serra da Capivara, Piauí, Brasil. *Rev Soc Bras Med Trop* 35: 315-322.
- Dias JCP 1986. Perspectivas de controle da doença de Chagas no Brasil. *Cad. Saúde Públ* 2: 84-103.
- Dias JCP, Coura JR 1997. Epidemiologia. In: Dias JCP, Coura JR, orgs., *Clínica e terapêutica da doença de Chagas. Uma abordagem prática para o clínico geral*. Rio de Janeiro, Ed. Fiocruz. Pp 33-36.
- Dias JCP, Machado EMM, Fernandes AL, Vinhaes MC 2000. Esboço geral e perspectivas da doença de Chagas no Nordeste do Brasil. *Cad. Saúde Pública*. 16 (sup.2): S13-S34.
- Dias JCP 2007. Globalização, iniquidade e doença de Chagas. *Cad. Saúde Públ*. 23 (sup 1): 513-522.
- Dittmar, Katharina ; Jansen, Ana Maria ; Araujo, A. ; Reinhard, Karl . Molecular diagnosis of prehistoric *Trypanosoma cruzi* in the Texas-Coahuila border region. In: Thirteenth Annual Meeting of the Paleopathology Association, 2003, Tempe, Arizona. Supplement of the Paleopathology Newsletter. Detroit, EUA : Paleopathology Association, 2003. p. 4-4.
- Coimbra Jr CEA 1988. Human settlements, demographic pattern, and epidemiology in lowland Amazonia: the case of Chagas disease. *Am Anthropol* 90: 82-97.

- Fernandes A, Lima VS, Souza SM, Dittmar K, Ferreira LF, Araujo A, Jansen AM, Vicente ACP 2007. Temporal variation of *T. cruzi* transmission among pre-Columbian populations of Brazil. In: VI World Congress on Mummy Studies, Tegui, Lanzarote. Programa y Resúmenes. Tegui. Atoche P, Ramirez MA, v. 1: 153-153.
- Ferreira LF, Brito C, Cardoso MA, Fernandes O, Reinhard K, Araújo A 2000. Paleoparasitology of Chagas disease revealed by infected tissues from Chilean mummies.. *Acta Tropica* 75: 79-84.
- Fornaciari G, Castagna M, Viacava P, Tognetti A, Bevilacqua G, Segura EI 1992. Chagas' disease in a Peruvian Inca Mummy. *Lancet* 339: 128 – 129.
- Greenblatt C, Spigelman M 2003. Emerging Pathogens. Archaeology, Ecology and Evolution of Infectious Disease. Oxford, Biology. Oxford University Press. 250pp.
- Guhl F, Jaramillo C, Vallejo GA, Yockteng R, Cardenas-Arroyo F, Fornaciari G, Arriaza B, Aufderheide AC 1999. Isolation of *Trypanosoma cruzi* DNA in 4.000-year-old mummified human tissue from northern Chile. *Am J Phys Anthropol* 108: 401-407
- Kipnis R 2002. Foraging Societies of Eastern Central Brazil: An Evolutionary Ecological Study of Subsistence Strategies During the Terminal Pleistocene and Early/Middle Holocene. Ph.D. diss., University of Michigan.
- Lima VS, Yotsuki RK, Iñiguez A, Ferreira LF, Araújo A, Jansen AM, Vicente AC 2007. Seven thousand years of *Trypanosoma cruzi* infection in pre-Columbian Brazilian Indians.. In: VI World Congress on Mummy Studies, 2007, Tegui, Lanzarote. Programa y Resúmenes. Tegui : Pablo Atoche y Maria Angeles Ramirez, 2007. v. 1. p. 152-152.
- Ministério da Saúde 2006. Guia de Vigilância Epidemiológica. Série A. Normas e Manuais Técnicos. Brasília, DF. pp 282-296.
- Prous A, Schlobach M, 1997. Sepultamentos pré-históricos do Vale do Peruaçu-MG. Revista do Museu de Arqueologia e Etnologia da USP 7:3-21.
- Ramos Jr., Alberto N. and Carvalho, Diana Maul de Os diferentes significados da certificação conferida ao Brasil como estando livre da doença de Chagas. Cad. Saúde Pública, Dez 2001, vol.17, no.6, p.1403-1412.
- Reinhard K, Fink M, Skiles J 2003. A case of megacolon in Rio Grande Valley as a possible case of Chagas disease. *Mem Inst Oswaldo Cruz* 98 suppl 1: 165-172.
- Reinhard K, Dittmar K, Araujo A 2007. Cave living and transmission of Chagas disease in ancient times.. In: VI World Congress on Mummy Studies, Tegui, Lanzarote. Programa y Resúmenes. Tegui. Atoche P, Ramirez MA, v. 1: 155-155.
- Schofield CJ, Jannin J, Salvatella R 2006. The future of Chagas disease control. Trends in Parasitology 22: 582-588.
- Sianto L, Reinhard K, Chame M, Chaves SM, Souza SMM, Gonçalves MLC, Fernandes A, Ferreira LF, Araújo A 2005. The Finding of *Echinostoma* sp. (Trematoda: Digenea) and Hookworm Eggs in Coprolites Collected from a Brazilian Mummified Body Dated of 600-1,200 Years Before Present. *The Journal of Parasitology* 91: 972-975.
- Rothhammer F, Allison MJ, Nuñez L, Staden V, Arriaza B 1985. Chagas Disease in pre-Columbian South America. *Am J Phys Anthropol* 68: 495-498.

IMPORTÂNCIA SOCIAL

A doença de Chagas como problema do Continente Americano (João Carlos Pinto Dias, José Rodrigues Coura)

- Andrade AL, Zlicker F, de Oliveira RM, Almolda Silva S, Luquetti A, Travassos LR, Almeida IC, De Andrade SS, de Andrade JG, Martelli CM 1996. Randomized trial of efficacy of benznidazole in treatment of early *Trypanosoma cruzi* infection. *Lancet* 348: 1407-1413.
- Bocca- Tourres LC 1969. La enfermedad de Chagas en período agudo y su tratamiento con el Bay 2502. *Boi Chil Parasitol* 24: 24-27.
- Bock M, Gonert R, Haberkorn A 1969. Studies with Bay 2502 on animals. *Boi Chil Parasitol* 24: 13-19.
- Brener Z 1961. Atividade terapêutica do 5-nitrofuraldeido- semicarbazona (nitrofurazona) em esquemas de duração prolongada na infecção experimental pelo *Trypanosoma cruzi*. *Rev Inst Med Trop São Paulo* 3: 43-49.

- Brener Z 1968. Terapêutica experimental da doença de Chagas. In JR Cançado, *Doença de Chagas*. Belo Horizonte, Imprensa Oficial de Minas Gerais, Minas Gerais, p. 510-516.
- Brener Z, Cançado JR, Galvão LM, Da Luz ZM, Filardi LS, Pereira ME, Santos LM, Cançado CB 1993. An experimental and clinical assay with ketoconazole in the treatment of Chagas disease. *Mem Inst Oswaldo Cruz* 88: 149-153 .
- Cançado JR 1963. Aspectos clínicos na padronização dos métodos de avaliação terapêutica na doença de Chagas. *Rev Goiana Med* 9 (Supl.): 212-232.
- Cançado JR 1968. Tratamento da doença de Chagas. In JR Cançado, *Doença de Chagas*, Imprensa Oficial de Minas Gerais, Minas Gerais, p. 517 - 540.
- Cançado JR 2002. Long term evaluation on etiological treatment of Chagas disease with benznidazole. *Rev. Inst. Med. Trop. S. Paulo*, 44: 29-37.
- Cançado JR, Brener Z 1979. Terapêutica. In Z Brener, Z Andrade (eds), *Trypanosoma cruzi e Doença de Chagas*, Guanabara Koogan, Rio de Janeiro, p. 362-424
- Cançado JR, Duval Marra U, Mourão OG, Álvares JM, Oliveira J, Salgado A 1973. Bases para avaliação do tratamento específico da doença de Chagas humana segundo a parasitemia. *Rev Soc Bras Med Trop* 7: 155-166.
- Cançado JR, Marra UD, Brener Z 1964. Ensaio terapêutico clínico com a 5-nitro-2-furaldeido-semicarbazona (Nitrofurazona) na forma crônica da doença de Chagas. *Rev Inst Med Trop São Paulo* 6: 12-16.
- Cançado JR, Marra UD, Lopes M, Mourão O, Faria CAF, Álvares JM, Salgado AA 1969. Toxicidade y valor terapêutico del Bay 2502 en la enfermedad de Chagas in tres esquemas posológicos. *Boi Chil Parasitol* 24: 28-32.
- Cançado JR, Salgado AA, Marra UD, Alvares JM, Machado JR 1975. Clinical therapeutic trial in chronic Chagas disease using nifurtimox in 3 schedules of long duration. *Rev Inst Med Trop São Paulo* 17: 111-127.
- Chagas C, Chagas E 1935. Manual de Doenças Tropicais e Infecciosas, volume I. Livraria Editora Freitas Bastos, Rio de Janeiro, 189 p.
- Coura JR, Silva JR 1961. Aspectos atuais do tratamento da doença de Chagas. *Rev Bras Med* 51: 283-290.
- Coura JR, Ferreira LF, Silva JR 1962. Experiências com nitrofurazona na fase crônica da doença de Chagas. *O Hospital* 62: 957-964.
- Coura JR, Brindeiro PJ, Ferreira I 1978. Benznidazole in the treatment of Chagas disease. *Current Chemotherapy. Proc 10th Int Cong Chemotherapy* 1: 161-162.
- Coura JR, de Abreu LL, Willcox HP, Petana W 1997. Comparative controlled study on the use of benznidazole, nifurtimox and placebo, in the chronic form of Chagas disease, in a field area with interrupted transmission. J. Preliminary evaluation. *Rev Soc Bras Med Trop* 30: 139-144.
- Coura JR, Castro SL 2002. A critical review on Chagas disease chemotherapy. *Mem. Inst. Oswaldo Cruz*, 3-24.
- De Castro SL 1993. The challenge of Chagas disease chemotherapy: an update of drugs assayed against *Trypanosoma cruzi*. *Acta Trop* 53: 83-98.
- DoCampo R 2001. Recent developments in the chemotherapy of Chagas disease. *Curr Pharm Design* 7: 1157-1164.
- Ferreira HO 1961. Forma aguda da doença de Chagas tratada pela nitrofurazona. *Rev Inst Med Trop São Paulo* 3: 287-289.
- Ferreira HO 1962. Fase aguda da doença de Chagas. *O Hospital* 61:307-311.
- Ferreira HO, Prata A, Rassi A 1963. Administração prolongada de nitrofurazona no tratamento da doença de Chagas aguda. *O Hospital* 63: 131-139.
- Galleano RH, Marr JJ, Sosa RR 1990. Therapeutic efficacy of allopurinol in patients with chronic Chagas disease. *Am J Trop Med Hyg* 43: 159-166.
- Lacunza CD, Negrete OS, Mora MC, Uncos A, Segura MA, Castillo ND, Garayzabal MI, Basombrio MA 2006. Use of the polymerase chain reaction (PCR) for early evaluation of the etiological treatment in young adults, chronically infected with *Trypanosoma cruzi*. *Rev. Patol Trop*, 35: 227-232.
- Lauria-Pires L, Castro CN, Emanuel A, Prata A 1988. Ineficácia do allopurinol em pacientes na fase aguda da doença de Chagas. *Rev Soc Med Trop* 21: 79
- Macêdo VO, Silveira CA 1987. Perspectivas da terapêutica específica na doença de Chagas. Experiências na forma indeterminada. *Rev Soc Bras Med Trop* 20 (Supl II): M24-M26.
- Mayer M, Rocha Lima H 1912. Zur Entwicklung von *Schizotrypanum cruzi* in Saengatieren. *Arch Schiffs u Tropen Hyg* 16: 90-94 .

- Mayer M, Rocha Lima H 1914. Zum Verhalten von *Schizotrypanum cruzi* in Warmbluetern und Arthropoden. *Arch Schiffs u Tropen-Hyg* 5: 101-136.
- Molina J, Martins-Filho O, Brener Z, Romanha AJ, Loebenberg D, Urbina JA 2000. Activities of the triazole derivative SCH 56592 (posaconazole) against drug-resistant strains of the protozoan parasite *Trypanosoma (Schizotrypanum) cruzi* in immunocompetent and immunosuppressed murine hosts. *Antimicrob Agents Chemother* 44: 150-155.
- Molina J, Urbina J, Gref R, Brener Z, Rodrigues Junior JM 2001. Cure of experimental Chagas disease by the bis-triazole D0870 incorporated into "stealth" polyethyleneglycolpoly lactide nanospheres. *J Antimicrob Chemother* 47: 101-104.
- Packchanian A 1952. Chemotherapy of experimental Chagas disease with nitrofurans compounds. *J Parasitol* 38: 30-40.
- Packchanian A 1957. Chemotherapy of experimental Chagas disease with nitrofurans compounds. *Antibiotics & Chemotherapy* 7: 13-23.
- Rassi A, Ferreira HO 1971. Tentativas de tratamento específico da fase aguda da doença de Chagas com nitrofuranos em esquemas de duração prolongada. *Rev Soc Bras Med Trop* 5: 235-262.
- Rassi A, Luquetti AO 1992. Therapy of Chagas disease. In S Wendel, Z Brener, E Camargo, A Rassi (eds), *Chagas Disease (American Trypanosomiasis): its Impact on Transfusion and Clinical Medicine*. ISBT, São Paulo, p. 237-247.
- Rubio M, Donoso F 1969. Enfermedad de Chagas en niños y tratamiento con Bay 2502. *Bol Chil Parasitol* 24: 43-48.
- Schenone H, Concha L, Aranda R, Rojas A, Alfaro E 1969. Experiência terapêutica com el Bayer 2502 en la infección chagásica crónica del adulto. Importancia del uso adecuado del xenodiagnóstico. *Bol Chil Parasitol* 24: 66-69.
- Schenone H, Concha L, Aranda R, Rojas A, Alfaro E, Knierin E, Rojo M 1975. Atividade quimioterápica de um derivado nitroimidazolacetarnida na infecção chagásica crônica. *Bol Chil Parasitol* 30: 91-93.
- Schenone H, Concha L, Aranda R, Rojas A, Knierin F, Rojo M 1972. Treatment of chronic Chagas infection with Lampit. *Bol Chil Parasitol* 27: 11-14.
- Schenone H, Rojas A, Alfaro E, Concha L, Aranda R 1981. Estudio longitudinal de la persistencia de la acción terapéutica del nifurtimox y del benznidazol en pacientes con infección chagásica crónica. *Bol Chil Parasitol* 36: 59-62.
- Sosa Estani S, Segura EL, Ruiz AM, Velazquez E, Porcel BM, Yampotis C 1998. Efficacy of chemotherapy with benznidazole in children in the indeterminate phase of Chagas disease. *Am J Trop Med Hyg* 59: 526-529.
- Urbina JA, Payares G, Molina J, Sanoja C, Liendo A, Lazard K, Piras MM, Piras R, Perez N, Wincker P, Ryley JF 1996. Cure of short – and long-term experimental Chagas disease using D0870. *Sciences* 273: 969-971.

PATOLOGIA

A Patologia da doença de Chagas (Zilton A. Andrade)

- Andrade ZA, Andrade SG 1955. A patologia da doença de Chagas (Forma crônica cardíaca). *Bol Fund Gonçalo Moniz* 6: 1-53, 1955.
- Andrade ZA, Andrade SG, Sadigursky M, Wenthold Jr RJ, Hilbert SL, Ferrans VJ. 1997. The indeterminate phase of Chagas' disease: ultrastructural characterization of cardiac changes in the canine model. *Am J Trop Med Hyg* 57: 328-336, 1997
- Chagas C 1909. Nova tripanozomíase humana. *Mem Inst Oswaldo Cruz*. 1: 159-217.
- Chagas C 1911. Nova entidade mórbida do homem. *Mem Inst Oswaldo Cruz* 3: 22-275.
- Chagas C, Villela E 1922. Forma cardíaca da Trypanosomíase americana. *Mem Inst Oswaldo Cruz* 14: 5-61
- Crowell, B.C 1923. The acute form of American trypanosomiasis. Notes on its pathology, with autopsy report and observations on tripanosomiasis cruzi in animals. *Am J Trop Méd* 3: 425-452, 1923.
- Jorg ME 1956. Anatomía patológica de pancarditis en la Tripanosomiasis cruzi. (Sinópsis del estudio histopatológico de doce casos mortales) *Rev Confed Med Panamer* 3: 465-472.

- Köberle F 1962. Pathologic anatomy of enteromegaly in Chagas disease. *Bockus Alimni Internat. Soc. Gastroenterology (Proceedings)*, 2: 92-110.
- Laranja FS, Dias E, Nobrega G, Miranda A 1956. Chagas' disease. A clinical epidemiologic and pathologic study. *Circulation* 14: 1035-1060.
- Mazza S, Jorg ME 1939. Diferencias entre anatomia patologica de carditis reumática y carditis de enfermedad de Chagas. *Publ MEPRA* 42: 74-91.
- Pinto Dias JC, Silvera AC, Schofield CJ 2002. The impact of Chagas disease control in Latin América. A Review. *Mem Inst Oswaldo Cruz*. 97. 603-612.
- Relatório Oficial da 1ª Reunião Anual de Pesquisa Aplicada em Doença de Chagas 1985. Sociedade Brasileira de Medicina Tropical, Araxá, MG *Rev Soc Bras Med Trop* 18: 46.
- Rezende JM, Rosa H, Vaz MJM 1985. Endoscopia no megaesôfago: estudo prospectivo de 600 casos. *Arq Gastroenterol* 22: 53-62.
- Romaña C 1935. Acerca de um sintoma inicial de valor para elk diagnostico de forma aguda de la enfermedad de Chagas. La conjuntivitis esquizotripanósica unilateral. (Hipotesis sobre puerta de entrada conjuntiva de la enfermedad). *Public MEPRA* 22: 16-28.
- Torres CM 1941. Sobre a anatomia patológica da doença de Chagas. *Mem Inst Oswaldo Cruz* 36: 391-404.
- Vianna G 1911. Contribuição para o estudo da anatomia patológica da "Molestia de Carlos Chagas". *Mem Inst Oswaldo Cruz* 3: 276-294.

Cardiopatia Chagásica Humana - Aspectos Anátomo-patológicos e Patogenia (Maria de Lourdes Higuchi)

- Teixeira ARL, Teixeira ML, Santos-Buch CA. The immunology of experimental Chagas' disease. IV. Production of lesions in rabbits similar to those of chronic Chagas' disease in man. *Am J Path* 1975;80:163-80.
- Cunha-Neto E, Duranti M, Gruber A, Zingales B, De Messias I, Stolf N, Bellotti G, Patarroyo ME, Pileggi F, Kalil J. Autoimmunity in Chagas' disease cardiopathy: biological relevance of a cardiac myosin-specific epitope crossreactive to an immunodominant *Trypanosoma cruzi* antigen. *Proc Nat Acad Sci*. 1995;92:3541-45.
- Lopes ER, Chapadeiro E, Almeida HO, Rocha A. Contribuição ao estudo da anatomia patológica dos corações de chagásicos falecidos subitamente. *Rev Soc Bras Med Trop* 1975;9:269-82.
- Chagas C. Processos patogênicos da tripanosomíase americana. *Mem Inst Oswaldo Cruz* 1916;8:5-37.
- Jones EM, Colley DG, Tostes S, Lopes ER, Vnencak-Jones CL, McCurley TL. Amplification of *Trypanosoma cruzi* DNA sequence from inflammatory lesions in human chagasic cardiomyopathy. *Am Trop Med Hyg* 1993;48:348-57.
- Higuchi ML, Brito T, Reis M, Bellotti G, Pereira-Barreto AC, Pileggi F. Correlation between *T. cruzi* parasitism and myocardial inflammation in human chronic chagasic myocarditis. Light microscopy and immunohistochemical findings. *Cardiovasc Pathol* 1993;2:101-06.
- Palomino AS, Aiello VD, Higuchi ML. Systematic mapping of hearts from chronic chagasic patients: the association between the occurrence of histopathological lesions and *Trypanosoma cruzi* antigens. *Ann Trop Med Parasit* 2000;94:571-79.
- Ben Younes-Chennoufi A, Hontebeyrie-Joskowicz M, Tricottet V, Eisen H, Reynes M, Said G. et al - Persistence of *Trypanosoma cruzi* antigens in the inflammatory lesions of chronically infected mice. *Trans R Soc Trop Med Hyg* 1988;82:77-83.
- Cunningham DS, Grogl M, Kuhn RE. Suppression of antibody responses in humans infected with *Trypanosoma cruzi*. *Infect Immun* 1980;30:496-99.
- Reis MM, Higuchi Mde L, Benvenuti LA, Aiello VD, Gutierrez PS, Bellotti G, Pileggi F. An in situ quantitative immunohistochemical study of cytokines and IL-2R+ in chronic human chagasic myocarditis: Correlation with the presence of myocardial *Trypanosoma cruzi* antigens. *Clin Immunol Immunopathol* 1997;83:165-72.
- Schijman AG, Vigliano C, Burgos J, Favarolo R, Perrone S, Laguens R, Levin MJ. Early diagnosis of recurrence of *Trypanosoma cruzi* infection by polymerase chain reaction after heart transplantation of a chronic Chagas' heart disease patient. *J Heart Lung Transplant* 2000;19:1114-17.
- BENVENUTI, L.A.; ROGGÉRIO, A.; SAMBIASE, N.V. Polymerase chain reaction in endomyocardial biopsies for monitoring reactivation of Chagas' disease in heart

- transplantation. A case report and review of the literature. *Cardiovasc. Pathol.* 2005; 14:265-268.
- Sztejn M, Washington RC, Kierszenbaum F. Trypanosoma cruzi inhibits the expression of CD3, CD4, CD8 and IL-2R by mitogen-activated helper and cytotoxic human lymphocytes. *J Immunol* 1990;144:3558-62.
- Fuenmayor-Meza, CE. Quantitative analysis of histopathological alterations in endomyocardial biopsies from patients in different clinical forms of Chagas' disease or with dilated cardiomyopathy, regarding myocardial structure, T. cruzi antigens and subsets of T lymphocytes. São Paulo: University of São Paulo. 2000 (Thesis).
- Reis DD, Jones EM, Tostes S, Lopes ER, Gazzinelli G, Colley DG, Mc Curley TI. Characterisation of inflammatory infiltrate in chronic myocardial lesions: presence of tumor necrosis factor+ cells and dominance of granzyme A+ CD8+ lymphocytes. *Am J Trop Med Hyg* 1993;48:637-44.
- Higuchi ML, Reis M, Aiello VD, Benvenuti LA, Gutierrez PS, Bellotti G, Pileggi F. Human chronic chagasic myocarditis is T. cruzi antigen and CD8+ T cell dependent. *Am J Trop Med Hyg* 1997;56:485-89.
- Reed SG, Inverso JA, Roters SB. Heterologous antibody responses in mice with chronic Trypanosoma cruzi infection: depressed T helper function restored with supernatants containing interleukin 2. *J Immunol* 1984;133:1558-63.
- Spinella S, Milon G, Hontebeyrie-Joskowicz M. A CD4+ TH2 cell line isolated from mice chronically infected with Trypanosoma cruzi induces IgG2 polyclonal response in vivo. *Eur J Immunol* 1990;20:1045-51.
- Albert JCS, Soub JT, Marino APMP, Lannes-Vieira J, Teixeira MM, Farber J, Gazzinelli RT, Silva JS. Modulation of chemokine production and inflammatory responses in interferon-gamma and Tumor Necrosis Factor-R-1-deficient mice during Trypanosoma cruzi infection. *Am J Pathol* 2001;158:1433-40.
- Hölscher C, Mohrs M, Dai WJ, Köhler G, Ryffel B, Schaub GA, Mossmann H, Brombacher F. Tumor necrosis factor alpha-mediated toxic shock in Trypanosoma cruzi-infected interleukin 10-deficient mice. *Infection and Immunity* 2000;68:4075-83.
- Reis MM, Higuchi ML, Aiello VD, Benvenuti LA. Growth factors in the myocardium of patients with chronic chagasic cardiomyopathy. *Rev Soc Bras Med Trop.* 2000;33:509-18.
- ROSSI, M.A.; GONÇALVES, S.; RIBEIRO-DOS-SANTOS, R. Experimental Trypanosoma cruzi cardiomyopathy in BALB/c mice. The potential role of intravascular platelet aggregation in its genesis. *Am. J. Pathol.* v.114,p.209-216, 1984.
- TANOWITZ, H.B.; BURNS, E.R.; SINHA, A.K. et al. Enhanced platelet adherence and aggregation in Chagas' disease: a potential pathogenic mechanism for cardiomyopathy. *Am. J. Trop. Med. Hyg.* v.43,p.274-81,1990.
- TODOROV, A.G.; ANDRADE, D.; PESQUERO, J.B. et al. Trypanosoma cruzi induces edematogenic responses in mice and invades cardiomyocytes and endothelial cells in vitro by activating distinct kinin receptor (B1/B2) subtypes. *FASEB. J.* v.17, p.73-75, 2003.
- MARIN-NETO, J.A.; MARZULLO, P.; MARCASSA, C. et al. Myocardial perfusion abnormalities in chronic Chagas' disease as detected by thallium-201 scintigraphy. *Am J Cardiol.* v.69,p.780-784, 1992.
- ROCHITTE, C.E.; OLIVEIRA, P.F.; ANDRADE, J.M. et al. Myocardial delayed enhancement by magnetic resonance imaging in patients with Chagas' disease. *J. Am. Coll. Cardiol.* v.46,p.1553-1558, 2005.

Histórico (Anis Rassi, Simone Petraglia Kropf)

- Bynum WF, Lawrence C.; Nutton V. (eds.) 1985. The emergence of modern cardiology. London, Wellcome Institute for the History of Medicine (Medical History, supplement n.5).
- Chagas C 1910 a. Aspecto clinico geral da nova entidade morbida produzida pelo *Schizotrypanum cruzi*: nota prévia. *Brasil Médico* 24: 263-265.
- Chagas C 1910 b. Nova entidade morbida do homem. *Brasil Médico* 24: 423-428, 433-437, 443-447.
- Chagas C 1911 a. Nova entidade morbida do homem: Rezumo geral de estudos etiolojicos e clinicos. *Memórias do Instituto Oswaldo Cruz* 3: 219-275.
- Chagas C 1911 b. Carlos. Molestia de Carlos Chagas ou thyreoidite parasitaria: Nova doença humana transmittida pelo barbeiro (*Conorhinus megistus*). *Revista Médica de S. Paulo* 14: 337-356.

- Chagas C 1911 c. Molestia de Carlos Chagas: Conferencia realizada em 7 de agosto na Academia Nacional de Medicina. *Brasil Médico* 25: 340-343, 353-355, 361-364, 373-375.
- Chagas C 1912. O mal de Chagas: Conferencia realizada em São Paulo pelo dr. Carlos Chagas, a convite da Sociedade de Medicina e Cirurgia, sobre a tripanozomíase brasileira, e de sua descoberta. *Archivo da Sociedade de Medicina e Cirurgia de São Paulo* 3: 34-66.
- Chagas C 1916 a. Aspectos clínicos y anatomopatológicos de la tripanosomiasis americana. *La Prensa Médica Argentina* 3: 125-127, 137-138, 153-158.
- Chagas C 1916 b. Processos patojenicos da tripanozomíase americana. *Memórias do Instituto Oswaldo Cruz* 8: 5-35.
- Chagas C 1916 c. Tripanosomíase americana: Forma aguda da moléstia. *Memórias do Instituto Oswaldo Cruz* 8: 37-60.
- Chagas C 1923. Conferência do Sr. Carlos Chagas, sobre a tripanossomíase americana: Sessão de 6 de dezembro de 1923. *Boletim da Academia Nacional de Medicina*, pp. 791-810.
- Chagas C 1927. Forma cardíaca da trypanosomíase americana. *Brasil Médico* 41: 1386-7.
- Chagas C 1928. Sur les altérations du coeur dans la trypanosomíase américaine (Maladie de Chagas). *Archives des Maladies du Coeur des Vaisseaux et du Sang* 21: 641-655.
- Chagas C 1934. Estado actual da Trypanosomíase americana. *Revista de Biologia e Higiene* 5: 58-64.
- Chagas C, Chagas E 1935. Manual de doenças tropicais e infectuosas. Oficinas Gráficas da Empresa Almanak Laemmert, Rio de Janeiro, 1, 192 pp.
- Chagas C, Villela E 1922. Forma cardíaca da tripanossomíase americana. *Memórias do Instituto Oswaldo Cruz* 14: 5-61.
- Chagas E 1930. Forma cardíaca da Trypanossomíase Americana. *Memórias do Instituto Oswaldo Cruz* 24: 9-126.
- Chagas E 1932. Novos estudos sobre a forma cardíaca da trypanossomíase americana, *Memórias do Instituto Oswaldo Cruz* 26: 329-338.
- Chagas Filho C 1993. *Meu Pai*. Casa de Oswaldo Cruz, Rio de Janeiro, 293 pp.
- Dias E 1946. Acerca de 254 casos da doença de Chagas comprovados em Minas Gerais. *Brasil Médico* 60: 41-43.
- Dias E 1949. Considerações sobre a importância da moléstia de Chagas em Minas Gerais e estados vizinhos. Necessidade urgente de ser desenvolvido o estudo dessa endemia e de serem tomadas medidas para combatê-la. *Brasil Médico* 63: 217-220.
- Dias E, Laranja F, Nóbrega G 1945. Doença de Chagas. *Memórias do Instituto Oswaldo Cruz* 43: 495-581.
- Dias E; Laranja F; Pellegrino J 1948. Estudos sobre a importância social da doença de Chagas. I – Inquérito clínico-epidemiológico feito nas vizinhanças de Bambuí, oeste de Minas, *Brasil-Medico* 62: 412-3
- Köberle F 1958. Cardiopatia chagásica. *O Hospital* 53: 311-46.
- Kropf SP 2006. Doença de Chagas, doença do Brasil: ciência, saúde e nação (1909-1962). Universidade Federal Fluminense, Departamento de História, Niterói, 534 pp.
- Kropf SP, Azevedo N, Ferreira LO 2003. Biomedical research and public health in Brazil: the case of Chagas' disease. *Social History of Medicine* 16: 111-129.
- Laranja F 1986. Depoimento. Projeto Memória de Manguinhos. Rio de Janeiro, Casa de Oswaldo Cruz/Fiocruz.
- Laranja F, Dias E, Nóbrega G 1948 a. O eletrocardiograma na cardiopatia crônica da doença de Chagas. *Brasil Médico* 62: 51-3.
- Laranja F, Dias E, Nóbrega G 1948 b. Clínica e terapêutica da doença de Chagas, *Memórias do Instituto Oswaldo Cruz* 46: 473-529
- Laranja F, Dias E, Nóbrega G, Miranda A 1956. Chagas' disease: A clinical, epidemiologic and pathologic study. *Circulation* 14: 1035-60.
- Laranja F. 1949. Evolução dos conhecimentos sobre a cardiopatia da doença de Chagas, *Memórias do Instituto Oswaldo Cruz* 47: 605-69.
- Leme CA 1981. História da eletrocardiografia no Brasil. *Revista do Hospital das Clínicas da Faculdade de Medicina de São Paulo* 36: 179-83.
- Luquetti AO, Rassi A 2000. Diagnóstico laboratorial da infecção pelo *Trypanosoma cruzi*. In: Brener Z, Andrade Z, Barral-Netto M (eds). *Trypanosoma cruzi e Doença de Chagas*. 2ª ed. Guanabara Koogan. Rio de Janeiro. pp 344 – 378.
- Pellegrino J 1946. O eletrocardiograma na fase crônica da doença de Chagas experimental no cão. *Memórias do Instituto Oswaldo Cruz* 44: 615-47.

- Pellegrino J 1947. O eletrocardiograma na doença de Chagas experimental no cão. *Brasil Médico* 61: 299-301.
- Pellegrino J, Borrotchin M 1948. Inquérito sobre a doença de Chagas no Hospital da Santa Casa de Misericórdia de Belo Horizonte (Minas Gerais, Brasil), *Memórias do Instituto Oswaldo Cruz* 46: 419-57.
- Rassi A, Perini GE 1979. Valor da eletrocardiografia dinâmica (sistema Holter) no estudo da cardiopatia chagásica crônica. *Ars Curandi Cardiologia* 2:31 – 54.
- Rassi A 2001. Depoimento. Projeto História da Pesquisa sobre Doença de Chagas no Brasil. Rio de Janeiro, Casa de Oswaldo Cruz.
- Rassi Jr A, Rassi A, Little WC 2000. Chagas' heart disease. *Clinical Cardiology* 23: 883 – 889.
- Rassi Jr A, Rassi AG, Rassi SG, Rassi Jr L, Rassi A 1995. Arritmias ventriculares na doença de Chagas. Particularidades diagnósticas, prognósticas e terapêuticas. *Arquivos Brasileiros de Cardiologia* 65: 377 – 387.
- Rassi Jr A, Rassi SG, Rassi A 2001. Morte súbita na doença de Chagas. *Arquivos Brasileiros de Cardiologia* 76 : 75 – 85.
- Reis NB 1986. Evolução da cardiologia no Brasil. In: JS Queiroz (ed.). *Memória da Sociedade de Medicina e Cirurgia do Rio de Janeiro num século de vida*. Rioarte/MEC, Rio de Janeiro, 1, p.197-215.
- Rezende JM 2002. Fritz Köeberle. *Revista da Sociedade Brasileira de Medicina Tropical* 35: 25-34, suplemento III.
- Vianna G 1911. Contribuição para o estudo da anatomia patológica da “Molestia de Carlos Chagas” (Esquizotripanose humana ou tireoidite parasitária). *Memórias do Instituto Oswaldo Cruz* 3: 276-294.
- Yorke W 1937. Chagas' disease. A critical review. *Tropical Diseases Bulletin* 34: 275-300.

A forma cardíaca da doença de Chagas - avaliação funcional não invasiva (Manoel Otávio da Costa Rocha, Márcio Vinicius Lins Barros , Vitor Tadeu Vaz Tostes, Lucas Lodi Junqueira, Antônio Luiz Pinho Ribeiro)

- Acquatella H, Schiller NB, 1988. Echocardiographic recognition of Chagas' disease and endomyocardial fibrosis. *J Am Soc Echo*, 1: 60-68.
- Acquatella H, Shiller NB, Puigbó JJ *et al.*, 1980. Mode M and two-dimensional echocardiography in chronic Chagas' heart disease. A clinical and pathologic study. *Circulation*, 62: 787-799.
- Alfieri RG, Duarte, GM, 1993. Ergoespirometria. In: Alfieri RG, Duarte, GM. *Marcondes, exercício e o coração*, Editora Cultura Médica, Rio de Janeiro, 2^a. ed, 374-375.
- Almeida EA, Camargo LFM, Lopes MAS *et al.*, 1986. Prolapso da valva mitral em chagásicos crônicos. Estudo ecocardiográfico. *Arq Bras Cardiol*, 47: 207-210.
- Almeida JW, Shikanai Yasuda MA, Amato Neto V *et al.*, 1982. Estudo da forma indeterminada da doença de Chagas através da eletrocardiografia dinâmica. *Rev Inst Med Trop S Paulo*, 24: 222-228.
- Almeida-Filho OC, Maciel BC, Schmidt A, Pazin-Filho A, Marin-Neto JA, 2002. Minor segmental dyssynergy reflects extensive myocardial damage and global left ventricle dysfunction in chronic Chagas disease. *J Am Soc Echocardiogr*, 15(6):610-6.
- American College of Physicians, 1990. Ambulatory eletrocardiographic (Holter) monitoring. *Annals of International Medicine*, 113: 77-79.
- Amorim DS, Godoy RA, Manco JC, Tanaka A, Gallo LJ, 1968. Effects of acute elevation in blood pressure and of atropine on heart rate in Chagas' disease. A preliminary report. *Circulation*, 38:289-294.
- Amorim DS, Manco JC, Gallo L, Jr., Marin-Neto JA, 1982. Chagas' heart disease as an experimental model for studies of cardiac autonomic function in man. *Mayo Clin Proc*, 57 Suppl:48-60.
- Amorim DS, Marin-Neto JA, 1994. Alterações funcionais do sistema nervoso autônomo na doença de Chagas. *Rev Soc Cardiol Estado de Sao Paulo*, 4:106-117.
- Amorim DS, Mello de Oliveira JA, Manco JC, Gallo L, Jr., Meira de Oliveira JS, 1973. Chagas' heart disease. First demonstrable correlation between neuronal degeneration and autonomic impairment. *Acta Cardiol*, 28:431-440.
- Arreaza N, Puigbó JJ, Aquatella H *et al.*, 1983. Radionuclide evaluation of left-ventricular function in chronic Chagas' cardiomyopathy, *J Nucl Med*, 24: 563-567.

- Arteaga-Fernandes E, Pereira-Barreto AC, Ianni BM, 1989. Trombose cardíaca e embolia em pacientes falecidos de cardiopatia chagásica crônica. *Arq Bras Cardiol*, 52: 189-92.
- Barbaro G, 2001. Cardiovascular manifestation of HIV infection. *J R Sor Med*, 94:384-390.
- Barros MVL, 2003. Doppler Tecidual na Avaliação da Função Ventricular na Doença de Chagas. Tese (Doutorado). Belo Horizonte, Minas Gerais. Faculdade de Medicina da UFMG.
- Barros MVL, Machado FS, Ribeiro ALP, Rocha MOC, 2002. Detection of Early Right Ventricular Dysfunction in Chagas' Disease Using Doppler Tissue Imaging. *J Am Soc Echocardiography*, 15: 1197-1201.
- Barros MVL, Machado FS, Ribeiro ALP, Rocha MOC, 2004. Diastolic Function in Chagas' Disease: an Echo and Tissue Doppler Imaging Study. *Eur J Echocardiography*, 5:182-8.
- Barros MVL, Rocha MOC, Ribeiro ALP, Machado FS, 2001. Tissue Doppler Imaging in the Evaluation of the Regional Diastolic Function in Chagas' Disease. *Eur J Echocardiography*, 2: 94-99.
- Barthel P, Schneider R, Bauer A, Ulm K, Schmitt C, Schomig A, Schmidt G, 2003. Risk stratification after acute myocardial infarction by heart rate turbulence. *Circulation*, 108(10):1221-6.
- Bayés de Luna A, Navarro FO & Grima JRS, 1982. Eletrocardiograma de Holter. Enfoque prático. Barcelona. Científico-Médica, 187p.
- Berman DS, Shaw LJ, Germano G, 2001. Nuclear Cardiology. In: Fuster V, Alexander RW, O'Rourke RA. *Hurst's the heart*, McGraw-Hill, 2001, Estados Unidos, 525-565.
- Bestetti RB, Muccillo G, 1997. Clinical course of Chagas' heart disease: a comparison with dilated cardiomyopathy. *Int J Cardiol*, 25:187-93.
- Bowles NE, Ni J, Kearney DL, *et al.*, 2003. Detection of Viruses in Myocardial Tissues by Polymerase Chain Reaction: Evidence of Adenovirus as a Common Cause of Myocarditis in Children and Adults. *J Am Coll Cardiol*, 42:466-472.
- Caeiro T, Amuchastegui LM, Moreyra E, Gibson DG, 1985. Abnormal left ventricular diastolic function in chronic Chagas' disease: an echocardiographic study. *Int J Cardiol*, 9:417-424.
- Câmara EJM, 1993. Alterações segmentares da contratilidade do ventrículo esquerdo na cardiopatia chagásica crônica com e sem dilatação ventricular. *Arq Bras Cardiol*, 60:151-155.
- Carrasco H, Guerrero L, Parada H *et al.*, 1990. Ventricular arrhythmias and left ventricular myocardial function in chronic chagasic patients. *Int. J. Cardiol.*, v.28, p.35-41.
- Casado J, Davila DF, Donis JH *et al.*, 1990. Eletrocardiographic abnormalities and left ventricular function in Chagas' heart disease. *Int. J. Cardiol.*, v.27, p.55-62.
- Castro R, Kuschnir E, Sgammini H, 1988. Evaluación de la performance cardíaca y perfusión miocárdica con radiotrazadores en la cardiopatia chagásica crónica. *Rev Fed Arg Cardiol*, 17: 226-231.
- Chaitman B. Exercise stress testing. In: Braunwald E.; 1992. *Heart Disease. A textbook of cardiovascular medicine*. 4ª ed. W. B. Saunders Company, p. 161-179.
- Cheitlin MD, Alpert JS, Armstrong WF *et al.*, 1997. ACC/AHA guidelines for the clinical application of echocardiography: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on Clinical Application of Echocardiography). *Circulation*, 95:1686-1744.
- Combella I, Puigbó JJ, Acquatella H *et al.*, 1985. Echocardiographic features of impaired left ventricular diastolic function in Chagas heart disease. *Brit Heart J*, 53: 298-309.
- Crawford MH, Bernstein SJ, Deedwania PC, *et al.* ACC/AHA Guidelines for Ambulatory Electrocardiography. *J Am Coll Cardiol*. 1999;34(3):912-48.
- Currie PF, Jacob AJ, Horeman AR, *et al.*, 1994. Heart muscle disease related to HIV infection: prognostic implications. *Brit Med J*, 309:1605-1607.
- Detrano R, Froelicher VF, 1988. Exercise testing: uses and limitations considering recent studies. *Prog. Cardiovasc. Dis.*, 31: 173-204.
- Dias JCP, Kloetzel K, 1968. The prognostic value of eletrocardiographic features of chronic Chagas' disease. *Rev Inst Med Trop São Paulo*. v.10, f.3, p.158-162.
- Dimarco JP & Philbrick JT, 1990. Use of ambulatory electrocardiographic (Holter) monitoring. *Ann Internat Med*, 113: 53-68.
- Duarte GM, 1988. Ergometria. As bases da reabilitação cardiovascular: 1ª ed. Rio de Janeiro, Editora Cultura Médica Ltda., 456p.
- Ellestad MH, 1980. Prova do esforço. 2ª ed. Rio de Janeiro. Editora Cultura Médica Ltda, 326p.

- Emdim M, Marin-Neto JA, Carpeggiani C, 1992. Heart rate variability and cardiac denervation in Chagas' disease. *J Amb Monit*, 5:251-257.
- Espinosa RA, Pericchi LR, Carrasco HA *et al.*, 1991. Prognostic indicators of chronic chagasic cardiopathy. *Int. J. Cardiol.*, v.30, p.195-202.
- Faria CAF, 1985. Ergometria na avaliação clínica da doença de Chagas Crônica. In: Cançado Jr. & Chuster M. *Cardiopatia Chagásica*. Belo Horizonte, Fundação Carlos Chagas.
- Feingembaun H, 1994. *Echocardiography*. 5th Ed. Lea & Febiguer.
- Finaret B, De Rosa MA, Villa JJ, Lipina E, Alvarez M, Monti BC, 1981. La ecocardiografía en modo M en adultos jóvenes com infección chagásica crônica asintomática. XVIII Congresso de la Cardiología Argentina, Buenos Aires, 205.
- Fisher SD, Lipshultz SE, 2001. Cardiovascular abnormalities in HIV-infected individuals. In: Braunwald E, Zipes DP, Libby P. *Heart disease: a textbook of cardiovascular medicine*, 6a. ed, W.B. Saunders Company, 2211-2222.
- Friedman AA, Armelin E, Leme LEG *et al.*, 1981. Desempenho ventricular na doença de Chagas. Relações ecocardiográficas na miocardiopatia com distúrbio dromótopo e na fase pré-clínica. *Arq Bras Cardiol*, 36: 23-27.
- Friedrich MG, Strohm O, Schulz-Menger J *et al.*, 1998. Contrast media-enhanced magnetic resonance imaging visualizes myocardial changes in the course of viral myocarditis. *Circulation*, 97: 1802-1809.
- Froelicher VF, 1987. Exercise and the heart. *Clinical concepts*, 2^a ed. Year Book Medical Publishers, 508p.
- Gallo Jr. L, Marin-Neto JÁ, Manco JC *et al.*, 1975. Abnormal heart rate responses during exercise in patients with Chagas' disease. *Cardiology*, 147: 147-162.
- Gallo L, Jr., Morelo Filho J, Maciel BC, Marin-Neto JA, Martins LE, Lima Filho EC, 1987. Functional evaluation of sympathetic and parasympathetic system in Chagas' disease using dynamic exercise. *Cardiovasc Res*, 21:922-927.
- Gibbons RJ, Balady GJ, Bricker JT *et al.*, 2002. ACC/AHA 2002 Guideline Update for Exercise Testing: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on Exercise Testing). *Am Coll Cardiol Web Site*, 59p.
- Guerrero L, Carrasco H, Parada H *et al.*, 1991. Mecanica ventricular y arritmias cardiacas en pacientes chagasicos y com miocardiopatas dilatadas primarias. Seguimento ecoeletrocardiográfico. *Arq Bras Cardiol*, v.56, f.6, p.465-469.
- Hagar JM, Rahimtoola SH, 1991. Chagas' Heart disease in the United States. *N Engl J Med*, 325: 763-768.
- I Diretriz da Sociedade Brasileira de Cardiologia sobre Cardiologia Nuclear, 2002. *Arq Bras Cardiol*, v.78 (supl.III), p.1-41.
- Iosa DJ, 1994. Chronic Chagasic Cardioneuropathy: pathogenesis and treatment. In: Pan American Health Organization, ed. *Chagas' Disease and the nervous system*. Washington, D.C. Pan American Health Organization, 99-148.
- Junqueira Junior LF, Beraldo PS, Chapadeiro E, Jesus PC, 1992. Cardiac autonomic dysfunction and neuroganglionitis in a rat model of chronic Chagas' disease. *Cardiovasc Res*, 26:324-329.
- Junqueira Junior LF, Gallo Junior L, Manco JC, Marin-Neto JA, Amorim DS, 1985. Subtle cardiac autonomic impairment in Chagas' disease detected by baroreflex sensitivity testing. *Braz J Med Biol Res*, 18:171-178.
- Kleiger RE, Miller JP, Bigger JT, Jr., Moss AJ, 1987. Decreased heart rate variability and its association with increased mortality after acute myocardial infarction. *Am J Cardiol*, 59:256-262.
- Klocke FJ, Baird MG, Bateman TM *et al.*, 2003. ACC/AHA/ASNC guidelines for the clinical use of cardiac radionuclide imaging: a report of the American College of Cardiology/ American Heart Association Task Force on Practice Guidelines (ACC/AHA/ASNC Committee to Revise the 1995 Guidelines for the Clinical Use of Radionuclide Imaging). *Am Coll Cardiol Web Site*.
- Kuschnir E, Sgamini H, Castro R *et al.*, 1985. Perfil hemodinamico de la cardiopatia chagásica crônica: valoración por angiografía radioisotópica. *Rev Feder Arg Cardiol*, 14: 205-213.
- Lauer B, Niederau C, Kuhl U *et al.*, 1997. Cardiac troponin T in patients with clinically suspected myocarditis. *J Am Coll Cardiol*, 30: 1354-1359.
- Lombardi F, 2002. Clinical implications of present physiological understanding of HRV components. *Card Electrophysiol Rev*, 6(3):245-9.

- Maciel BC, Almeida Filho OC, Schimidt A *et al.*, 1994. Função ventricular na doença de Chagas. *Rev Soc Cardiol Est S Paulo*, 4: 144-151.
- Maciel BC, Filho OCA, Schmidt A, Neto JAM, 1998. Mild segmental dissinergy reflects more extensive myocardial involvement as compared to isolated conduction abnormalities in Chronic Chagas' disease. *J Am Coll Cardiol*, 31(5):339C.
- Mady C, Cardoso RH, Barreto AC, da Luz PL *et al.*, 1994. Survival and predictors of survival in patients with congestive heart failure due to Chagas' cardiomyopathy. *Circulation*; 90:3098-102.
- Maguire JH, Hoff R, Sherlock I, *et al.*, 1987. Cardiac morbidity and mortality due to Chagas' disease: prospective electrocardiographic study of a Brazilian community. *Circulation*; 75:1140-1145.
- Mahrholdt H, Goedecke C, Wagner A *et al.*, 2004. Cardiovascular magnetic resonance assessment of human myocarditis. A comparison to histology and molecular pathology. *Circulation*, 109: 1250-1258.
- Mancini DM, Beniaminovitz A, 2001. Myocarditis and specific cardiomyopathies – endocrine disease and alcohol. In: Fuster V, Alexander RW, O'Rourke RA. *Hurst's the heart*, McGraw-Hill, 2001, Estados Unidos, 2001-2032.
- Marin-Neto A, Marzullo P, Marcassa C *et al.*, 1992. Myocardial perfusion abnormalities in chronic Chagas' disease as detected by thallium-201 scintigraphy. *Am J Cardiol*, 69:780-784.
- Marin-Neto JA, Bromberg-Marin G, Pazin-Filho A, Simoes MV, Maciel BC, 1998. Cardiac autonomic impairment and early myocardial damage involving the right ventricle are independent phenomena in Chagas' disease. *Int J Cardiol*, 65:261-269.
- Marin-Neto JA, Gallo L, Jr., Manco JC, Rassi A, Amorim DS, 1980. Mechanisms of tachycardia on standing: studies in normal individuals and in chronic Chagas' heart patients. *Cardiovasc Res*, 14:541-550.
- Marin-Neto JA, Maciel BC, Gallo Junior L, Junqueira Junior LF, Amorim DS, 1986. Effect of parasympathetic impairment on the haemodynamic response to handgrip in Chagas's heart disease. *Br Heart J*, 55:204-210.
- Marin-Neto JA, Marzullo P, Marcassa C, Gallo Junior L, Maciel BC, Bellina CR, L'Abbate A, 1992. Myocardial perfusion abnormalities in chronic Chagas' disease as detected by thallium-201 scintigraphy. *Am J Cardiol*, 69:780-784.
- Marin-Neto JA, Simões MV, Sarabanda AVL, 1999. Chagasic Cardiopathy. *Arq Bras Cardiol*, 72:247-263.
- Marins VN, Flores AP, Seixas TN *et al.*, 1982. Electrocardiografia dinâmica em chagásicos na forma indeterminada ou sem cardiopatia aparente. *Arq Bras Cardiol*, 39: 303-307.
- Martinez Filho OR, Carrasco H., Molina CA, Mendez M, 1986. Estudio de la función diastólica ventricular izquierda en pacientes con enfermedad de Chagas. *Arq Bras Cardiol*, 47:31-36.
- McDonagh TA, Robb SD, Murdoch DR *et al.*, 1998. Biochemical detection of left-ventricular systolic dysfunction. *Lancet*, 351: 9-13.
- Molina A, Carrasco H, Milanés J *et al.*, 1981. La prueba de esfuerzo en la miocardiopatía chagásica crônica. Su valor en el diagnostico precoz. El comportamiento de las arritmias ventriculares y los trastornos de conducción al ejercicio en las fases mas avanzadas de la enfermedad. *Arq Bras Cardiol*, 36: 95-100.
- Monti E, Finaret B, De Rosa MA, 1979. La ecocardiografia en la detección de la miocardiopatía chagásica crônica subclínica. XVII Congresso de la Cardiologia Argentina, Córdoba.
- Narula J, Khaw BA, William G *et al.*, 1996. Diagnostic accuracy of antimyosin scintigraphy in suspected myocarditis. *J Nucl Cardiol*, 3: 371-381.
- Nunes MCP, 2003. Estudo de Marcadores Prognósticos Clínicos e Doppler Ecocardiográficos em Pacientes com Miocardiopatía Dilatada Chagásica. Tese (Doutorado). Belo Horizonte, Minas Gerais. Faculdade de Medicina da UFMG.
- Nunes MCP, Barbosa MM, Brum VA, Rocha MOC, 2004. Morphofunctional characteristics of the right ventricle in Chagas' dilated cardiomyopathy. *Int J Cardiol*, 94(1):79-85.
- Oliveira E, Ribeiro AL, Assis Silva F, Torres RM, Rocha MOC, 2002. The Valsalva maneuver in Chagas disease patients without cardiopathy. *Int J Cardiol*, 82(1):49-54.
- Oliveira JSM, Araújo RRC, Navarro MA, Muccilo G, 1983. Cardiac thrombosis and thromboembolis in chronic Chagas heart disease. *Am J Cardiol*, 52:147-151.
- Ortiz J, Barretto AC, Matsumoto AY, Monaco CA, Ianni B, Marotta RH, Mady,C, Bellotti G, Pileggi F, 1987. Alteração contrátil segmentar na forma indeterminada da Doença de Chagas. Estudo ecocardiográfico. *Arq Bras Cardiol*, 49:217-20.

- Paola AA, Gomes JA, Terzian AB, Miyamoto MH, Martinez Fo EE, 1995. Ventricular tachycardia during exercise testing as a predictor of sudden death in patients with chronic chagasic cardiomyopathy and ventricular arrhythmias. *Br Heart J*, 74(3):293-5.
- Pennell DJ, Prvulovich E, 1995. *Clinician's Guide to Nuclear Medicine: Nuclear Cardiology*. Impact Healthcare. 73p
- Pereira Barreto AC, Ianni BM, 1994. A forma indeterminada da moléstia de Chagas: Conceito e implicações médico-legais. *Rev Soc Cardiol Est São Paulo*, 4: 129-132.
- Pereira Barreto AC, Serro-Azul LG, Mady C *et al.*, 1990. Forma indeterminada da doença de Chagas. Uma doença polimórfica. *Arq Bras Cardiol*, 55: 347-353.
- Podrid PJ, Graboys, JB, Lampert TS *et al.*, 1987. Exercise stress testing exposure of arrhythmias. *Circulation*, 75 (suppl 3): 60-65.
- Rassi A, Lorga AM, Rassi S, 1985. Diagnóstico e tratamento das arritmias na cardiopatia chagásica crônica. In: Cançado Jr, Chuster M. *Cardiopatia Chagásica*. Belo Horizonte. Fundação Carlos Chagas, p. 276-288.
- Rassi Jr A, Rassi AG, Rassi S *et al.*, 1991. Frequência e grau da extra-sístolia ventricular a eletrocardiografia dinâmica (sistema holter de 24 horas) na doença de Chagas. *Arq Bras Cardiol*, 57 (suppl.C): C-134.
- Rassi Jr.A, Rassi AG, Rassi SG *et al.*, 1993. Variabilidade espontânea da arritmia ventricular ao holter e ao teste ergométrico na cardiopatia chagásica crônica. *Arq Bras Cardiol*, 61 (Supl. II): II-28.
- Rerkpattanapipat P, Wongpraparut N, Jacobs LE, Kotler M, 2000. Cardiac manifestations of acquired immunodeficiency syndrome. *Arch Intern Med*, 160:602-608.
- Ribeiro ALP, 1996. Disfunção autonômica e arritmia ventricular em chagásicos sem cardiopatia aparente. Tese (Doutorado). Faculdade de Medicina da UFMG.
- Ribeiro ALP, dos Reis AM, Barros MV, de Sousa MR, Rocha AL, Perez AA, Pereira JB, Machado FS, Rocha MOC, 2002. Brain natriuretic peptide and left ventricular dysfunction in Chagas' disease. *Lancet*, 360(9331):461-2.
- Ribeiro ALP, Ferreira LM, Oliveira E, Cruzeiro PC, Torres RM, Rocha MOC, 2004. Active orthostatic stress and respiratory sinus arrhythmia in patients with Chagas' disease with preserved left ventricular global systolic function. *Arq Bras Cardiol*, 83(1):40-4; 35-9.
- Ribeiro ALP, Lombardi F, Sousa MR, Barros MVL, Porta A, Barros VCV, Gomes ME, Machado FS, Rocha MOC, 2002. Power-law behavior of heart rate variability in Chagas' disease. *Am J Cardiol*, 89(4):414-8. PMID: 11835922
- Ribeiro ALP, Moraes RS, Ribeiro JP, Ferlin EL, Torres RM, Oliveira E, Rocha MOC, 2001. Parasympathetic dysautonomia precedes left ventricular systolic dysfunction in Chagas disease. *Am Heart J*, 141(2):260-5.
- Ribeiro ALP, Rocha MO, Barros MV, Rodrigues AR, Machado FS, 2000. A narrow QRS does not predict a normal left ventricular function in Chagas' disease. *Pacing Clin Electrophysiol*, 23(11 Pt 2):2014-7.
- Ribeiro ALP, Rocha MOC, 1998. Forma indeterminada da doença de Chagas: considerações acerca do diagnóstico e do prognóstico. *Rev Soc Bras Med Trop*, 31(3): 301-314.
- Ribeiro ALP, Schmidt G, Sousa MR *et al.*, 2003. Heart rate turbulence in Chagas disease. *Pacing Clin Electrophysiol*, 26(1):406-10.
- Ribeiro ALP, Tostes VTV, Torres RM, *et al.*, 1995. Teste ergométrico em chagásicos sem cardiopatia aparente. *Arq Bras Cardiol*, 65:96.
- Rocha ALL, Ribeiro AL, Barros MV, *et al.* 2001. Associação da insuficiência cronotrópica e indicadores de morbidade na cardiopatia chagásica crônica. *Arq Bras Cardiol*, 77(Supl.I):13.
- Rocha MOC, 1997. Avaliação médico-trabalhista na doença de Chagas. Revisão das normas técnicas previdenciárias à luz da ergometria. *Rev Soc Med Trop*, 30(supl I): 97-99.
- Rocha MOC, Ribeiro AL, Teixeira MM, 2003. Clinical Management of chronic Chagas cardiomyopathy. *Front Biosc*. 8:E44-54.
- Rodriguez-Salas LA, Klein E, Acquatella H, Cataliotti F, Davalos V V, Gomez-Mancebo JR, Gonzalez H, Bosch F, Puigbo JJ, 1998. Echocardiographic and Clinical Predictors of Mortality in Chronic Chagas' Disease. *Echocardiography*, 15(3):271-278.
- Rosenbaum MB, Alvarez AJ, 1955. The eletrocardiogram in chronic chagasic myocarditis. *Am Heart J*, 50: 492-527.
- Saad EA, Abraão C, 1985. Estudo hemodinâmico e angiográfico. In: Cançado JR, Chuster M. *Cardiopatia chagásica*. Belo Horizonte, Fundação Carlos Chagas.

- Salles G, Xavier S, Sousa A, Hasslocher-Moreno A, Cardoso C, 2003. Prognostic value of QT interval parameters for mortality risk stratification in Chagas' disease: results of a long-term follow-up study. *Circulation*, 108(3):305-12.
- Salles GF, Cardoso CR, Xavier SS, Sousa AS, Hasslocher-Moreno A, 2003. Electrocardiographic ventricular repolarization parameters in chronic Chagas' disease as predictors of asymptomatic left ventricular systolic dysfunction. *Pacing Clin Electrophysiol*, 26(6):1326-35.
- Salles GF, Xavier SS, Sousa AS, Hasslocher-Moreno A, Cardoso CR, 2004. T-wave axis deviation as an independent predictor of mortality in chronic Chagas' disease. *Am J Cardiol*, 93(9):1136-40.
- Sarda L, Colin P, Boccara F *et al.*, 2001. Myocarditis in patients with clinical presentation of myocardial infarction and normal coronary angiograms. *J Am Coll Cardiol*, 37: 786-792.
- Sartori AMC, Shikanai-Yasuda MA, Neto VA, Lopes MH, 1998. Follow-up of 18 patients with Human Immunodeficiency Virus infection and chronic Chagas' disease, with reactivation of Chagas' disease causing cardiac disease in three patients. *Clin Infect Disease*, 26:177-9.
- Simoes MV, Pintya AO, Bromberg-Marin G, Sarabanda AV, Antloga CM, Pazin-Filho A, Maciel BC, Marin-Neto JA, 2000. Relation of regional sympathetic denervation and myocardial perfusion disturbance to wall motion impairment in Chagas' cardiomyopathy. *Am J Cardiol*, 86(9):975-81.
- Smith SC, Ladenson JH, Mason JW *et al.*, 1997. Elevations of cardiac troponin I associated with myocarditis. *Circulation*, 95: 163-168.
- Sousa AC, Marin-Neto JA, Maciel BC, Gallo Junior L, Amorim DS, Barreto Martins LE, 1988. Disfunção sistólica e diastólica nas formas crônica indeterminada, digestiva e cardíaca da doença de Chagas. *Arq Bras Cardiol*, 50:293-299.
- Task Force of the European Society of Cardiology and the North American Society of Cardiac Pacing and Electrophysiology. Heart rate variability. Standards of measurement, physiological interpretation, and clinical use. *Circulation*, 1996; 93:1043-1065.
- Temesgen Z., 1999. Overview of HIV infection. *Ann Allergy Asthma Immunol*, 83:1-5.
- Thom AF, Martins LRF, 1982. *Cardiologia Nuclear. I – Conceitos Fundamentais*. *Arq Bras Cardiol*, 39: 53-58.
- Vaz-Tostes VT, 1993. Correlação entre parâmetros clínicos, hemodinâmicos e eletrocardiográficos medidos pela ergometria e fração de ejeção de repouso avaliada pela ecocardiografia Modo M em pacientes com cardiopatia chagásica crônica. Tese (Mestrado). Belo Horizonte, Minas Gerais. Faculdade de Medicina da UFMG.
- Veloso HH, Paola AA, Figueiredo E, Silva RMFL, Távora MZP, Martinez EE, 1996. Comparação da variabilidade da frequência cardíaca no domínio do tempo entre pacientes chagásicos com taquicardia ventricular sustentada e não sustentada e frações de ejeção semelhantes. *Rev Soc Cardiol Estado de Sao Paulo*, 6:24.
- Wackers FJT, Soufer R, Zaret BL, 2001. *Nuclear Cardiology*. In: Braunwald E, Zipes DP, Libby P, Heart disease: a textbook of cardiovascular medicine, 6a. ed, W.B. Saunders Company, 273-323.
- Wynne J, Braunwald E, 2001. The cardiomyopathies and myocarditides. In: Braunwald E, Zipes DP, Libby P, Heart disease: a textbook of cardiovascular medicine, 6a. ed, W.B. Saunders Company, 1751-1806.
- Xavier-Salles S, 1999. Estudo longitudinal da morbi-mortalidade cardíaca da doença de chagas em uma coorte de um grande centro urbano: análise clínica, eletrocardiográfica, radiológica e ecocardiográfica de 604 casos. Tese (Doutorado). Universidade Federal do Rio de Janeiro.

A forma digestiva da doença de Chagas - resenha histórica (Joffre Marcondes de Rezende)

- Alvarenga, A.M. *Cardiospasmó (mal de engasgo)*. Belo Horizonte. Imprensa Oficial do Estado de Minas Gerais, 1934.
- Amorim, M. & Correa Netto, A. *Histopathologia e Pathogenese do megaesophago e megarecto. Considerações em torno de um caso de "mal de engasgo"*. *Anais da Faculdade de Medicina da Universidade de São Paulo* 7: 101-134, 1932.
- Chagas, C. *Tripanosomíase americana. Forma aguda da molestia*. *Memórias do Instituto Oswaldo Cruz*, 8(2): 37-70, 1916.

- Correa Netto, A. & Etzel, E. Le mega-oesophage et le megacôlon devant la theorie de l'achalasia. Étude clinique et anatomo-pathologique. *Revue Sud-Americaine de Médecine et Chirurgie*, 5(7): 395-420, 1934.
- Etzel, E. - A avitaminose como agente etiológico do megaesôfago e do megacolon. *Anais da Faculdade de Medicina da Universidade de São Paulo*, 11(1): 59-85, 1935.
- Etzel, E. Neuropatologia do megaesôfago e megacolo. Estudo de 5 casos *Anais da Faculdade de Medicina da Universidade de São Paulo*, 10(3): 383-395, 1934.
- Freitas, J.L.P. Contribuição para o estudo do diagnóstico da moléstia de Chagas por processos de laboratório, 1947. Tese de Doutorado, São Paulo: Faculdade de Medicina da Universidade de São Paulo.
- Godoy, R. A. de: Estudo da esofagopatia chagásica crônica por meio do método eletromanométrico e da prova da metacolina em pacientes com e sem dilatação do esôfago. *Revista Goiana de Medicina* 18(1/2): 1-73, 1972.
- Kidder, D.P. & Fletcher, J.C. Brazil and the Brazilians, Philadelphia: Childs & Peterson, 1857, p. 416-418.
- Köberle, F. - Patologia y Anatomia patologica de la enfermedad de Chagas. *Boletin de la Oficina Sanitaria Panamericana*. 51: 404-428, 1961.
- Köberle, F. & Nador, E. Etiologia e patogenia do megaesôfago no Brasil. Nota prévia. *Revista Paulista de Medicina*, 47(6): 643-661, 1955.
- Köberle, F. Chagas' disease and Chagas syndromes: The pathology of American Trypanosomiasis. *Advanced Parasitology*, 6: 63-113, 1968.
- Köberle, F. Chagaskrankheit: Eine Erkrankung der neurovegetativen Peripherie. *Wien Klinisch Wochenschrift* 68: 333-339, 1956.
- v, F. Patogenia do megaesôfago brasileiro e europeu. *Revista Goiana de Medicina* 9: 79-116, 1963.
- Köberle, F.: Moléstia de Chagas - Enfermidade do sistema nervoso. *Anais do Congresso Internacional de Doença de Chagas (1959)*. II; 691-716, 1961.
- Laranja, F.S., Dias, E. & Nobrega, G. - Clínica e terapêutica da doença de Chagas. *Memórias do Instituto Oswaldo Cruz* 46(2): 473-529, 1948.
- Meneghelli, U.G. et al. Um nome que faltava na história do megaesôfago chagásico: Joseph Cooper Reinhardt (1809/10-1873). *Arquivos de Gastroenterologia*, 35(1): 1-8, 1998.
- Neiva, A., Penna, B. Viagem científica pelo norte da Bahia, Sudoeste de Pernambuco, sul do Piauí e de norte a sul de Goiás. *Memórias do Instituto Oswaldo Cruz*, 8(3): 74-224, 1916.
- Paranhos, U. Considérations sur le "mal de engasgo". *Bulletin de la Societé de Pathologie Exotique*, 7: 47-60, 1913.
- Parisi, R. Contribuição ao estudo do mal de engasgo e seu tratamento cirúrgico, 1925. Tese de Doutorado. São Paulo: Faculdade de Medicina e Cirurgia de São Paulo.
- Pinotti, H.W. - Contribuição para o estudo da fisiopatologia do megaesôfago. *Revista Goiana de Medicina*. 14(3/4): 137-168, 1968.
- Porto, C. & Porto, C. - História do megaesôfago nos Congressos Médicos do Brasil Central. *Rev. Goiana Med.* 16: 117-136, 1970.
- Porto, C. Gastropatia chagásica crônica. Nota prévia. *Revista Goiana de Medicina* 1(1): 43-54, 1955.
- Revista Goianan de Medicina*. Editorial. 1:1, 1955.
- Rezende Filho, J. Eletrogastrografia na Forma Digestiva da Doença de Chagas, 2002. Tese de Doutorado. Belo Horizonte: Faculdade de Medicina da Universidade Federal de Minas Gerais.
- Rezende Filho J.M. & Luquetti, A.O. Chagasic megavisceras. *Scientific Publications nº 547. PAHO-WHO, Washington* 1994, p.149-171.
- Rezende, J.M. & Moreira, H. - Forma digestiva da doença de Chagas. In CASTRO, L.P. & COELHO, L.C.V. *Gastroenterologia*, Rio de Janeiro, Editora Médica e Científica Ltda, 2004, p.325-392.
- Rezende, J.M. Clínica: Manifestações digestivas. In BRENER, Z. & ANDRADE, Z. *Trypanosoma cruzi e Doença de Chagas*. Guanabara Koogan, Rio de Janeiro, 1979, p. 312-316.
- Rezende, J.M. de - Manifestações digestivas da doença de Chagas. In DANI, R. & CASTRO, L. de P. *Gastroenterologia Clinica* 3. ed., Rio de Janeiro, Guanabara Koogan, 1993, p. 1729-1755
- Rezende, J.M. Forma digestiva da moléstia de Chagas. *Revista Goiana de Medicina*, 5(3): 193-227, 1959.
- Rezende, J.M. Megaesôfago por doença de Chagas *Revista Goiana de Medicina*. 2(4): 297-314, 1956.
- Rezende, J.M., Lauer, K.L. & Oliveira, A.R. Aspectos clínicos e radiológicos da aperistalsis do esôfago. *Revista Brasileira de Gastroenterologia* 12: 247-262, 1960.

Villela, E. A ocorrência da moléstia de Chagas nos Hospitais de Belo Horizonte e na população de seus arredores. *Boletim da Academia Nacional de Medicina*, 102(12): 122-156, 1930.

PATOGENIA

Cardiopatía chagásica (Joseli Lannes-Vieira)

- Abel LC, Rizzo LV, Ianni B, Albuquerque F, Bacal F, Carrara D, Bocchi EA, Teixeira HC, Mady C, Kalil J, Cunha-Neto E 2001. Chronic Chagas' disease cardiomyopathy patients display an increased IFN-gamma response to *Trypanosoma cruzi* infection. *J Autoimmun* 17(1):99-107.
- Abrahamsohn IA, Coffman RL 1996. *Trypanosoma cruzi*: IL-10, TNF, IFN-gamma, and IL-12 regulate innate and acquired immunity to infection. *Exp Parasitol* 84(2):231-44.
- Aliberti JC, Cardoso MA, Martins GA, Gazzinelli RT, Vieira LQ, Silva JS 1996. Interleukin-12 mediates resistance to *Trypanosoma cruzi* in mice and is produced by murine macrophages in response to live trypomastigotes. *Infect Immun* 64(6):1961-7.
- Aliberti JC, Machado FS, Souto JT, Campanelli AP, Teixeira MM, Gazzinelli RT, Silva JS 1999. beta-Chemokines enhance parasite uptake and promote nitric oxide-dependent microbistatic activity in murine inflammatory macrophages infected with *Trypanosoma cruzi*. *Infect Immun* 67(9):4819-26.
- Aliberti JC, Souto JT, Marino AP, Lannes-Vieira J, Teixeira MM, Farber J, Gazzinelli RT, Silva JS 2001. Modulation of chemokine production and inflammatory responses in interferon-gamma- and tumor necrosis factor-R1-deficient mice during *Trypanosoma cruzi* infection. *Am J Pathol* 158(4):1433-40.
- Almeida IC, Gazzinelli RT. 2001. Proinflammatory activity of glycosylphosphatidylinositol anchors derived from *Trypanosoma cruzi*: structural and functional analyses. *J Leukoc Biol* 70: 467-477.
- Al-Sabbagh A, Garcia CAAC, Diaz-Bardales BM, Zaccarias C, Sakura JK, Santos LMB. Evidence for cross-reactivity between antigen derived from *Trypanosoma cruzi* and myelin basic protein in experimental Chagas disease. *Exp Parasitol*. 1998 Jul;89(3):304-11.
- Andrade SG, Grimaud JA, Stocker-Guerret S. Sequential changes of the connective matrix components of the myocardium (fibronectin and laminin) and evolution of the cardiac fibrosis in mice infected with *Trypanosoma cruzi*. *Am J Trop Med Hyg* 1989; 40: 252-260.
- Andrade SG, Stocker-Guerret S, Pimentel AS, Grimaud JA. Reversibility of cardiac fibrosis in mice chronically infected with *Trypanosoma cruzi*, under specific chemotherapy. *Mem Inst Oswaldo Cruz* 1991; 86: 187-200.
- Añez N, Carrasco H, Parada H, Crisante G, Rojas A, Fuenmayor C, Gonzalez N, Percoco G, Borges R, Guevara P, Ramirez JL 1999. Myocardial parasite persistence in chronic chagasic patients. *Am J Trop Med Hyg* 60: 726-32.
- Araujo-Jorge TC, Waghbi MC, Hasslocher-Moreno AM, Xavier SS, Higuchi Mde L, Keramidas M, Bailly S, Feige JJ. Implication of transforming growth factor-beta1 in Chagas disease cardiomyopathy. *J Infect Dis*. 2002 Dec 15;186(12):1823-8.
- Bahia-Oliveira LM, Gomes JA, Cancado JR, Ferrari TC, Lemos EM, Luz ZM, Moreira MC, Gazzinelli G, Correa-Oliveira R 2000. Immunological and clinical evaluation of chagasic patients subjected to chemotherapy during the acute phase of *Trypanosoma cruzi* infection 14-30 years ago. *J Infect Dis* 182(2):634-8.
- Bahia-Oliveira LM, Gomes JA, Rocha MO, Moreira MC, Lemos EM, Luz ZM, Pereira ME, Coffman RL, Dias JC, Cancado JR, Gazzinelli G, Correa-Oliveira R 1998. IFN-gamma in human Chagas' disease: protection or pathology? *Braz J Med Biol Res* 31(1):127-31.
- Beltz LA, Szein MB, Kierszenbaum F. Novel mechanism for *Trypanosoma cruzi*-induced suppression of human lymphocytes. Inhibition of IL-2 receptor expression. *J Immunol*. 1988 Jul 1;141(1):289-94.
- Benvenuti LA, Higuchi ML, Reis MM 2000. Upregulation of adhesion molecules and class I HLA in the myocardium of chronic chagasic cardiomyopathy and heart allograft rejection, but not in dilated cardiomyopathy. *Cardiovasc Pathol* 9(2):111-7.
- Beraun et al, 1998 Drigo SA, Cunha-Neto E, Ianni B, Mady C, Fae KC, Buck P, Kalil J, Goldberg AC. BAT-1 polymorfismo Lack of association of tumor necrosis factor-alpha polymorphisms with Chagas disease in Brazilian patients. *Immunol Lett*. 2007 Jan 15;108(1):109-11.

- Bonfa, E., Viana, V.S.T, Barreto, A.C.P., Yoshinari, N.H., Cossermelli, W.. 1993. Autoantibodies in Chagas' disease: An antibody cross-reactive with human and *Trypanosoma cruzi* ribosomal proteins. *Journal of Immunology*, 150(9): 3917-3923.
- Buschiazzo A, Goytia M, Schaeffer F, Degraive W, Shepard W, Gregoire C, Chamond N, Cosson A, Berneman A, Coatnoan N, Alzari PM, Minoprio P. *Trypanosoma cruzi* proline racemases are involved in parasite differentiation and infectivity. *Mol Microbiol*. 2005 Oct;58(1):46-60.
- Calzada JE, Lopez-Nevot MA, Beraun Y, Martin J. No evidence for association of the inducible nitric oxide synthase promoter polymorphism with *Trypanosoma cruzi* infection. *Tissue Antigens*. 2002 Apr;59(4):316-9
- Calzada JE, Nieto A, Beraun Y, Martin J. Chemokine receptor CCR5 polymorphisms and Chagas' disease cardiomyopathy. *Tissue Antigens*. 2001 Sep;58(3):154-8.
- Calzada JE, Nieto A, Lopez-Nevot MA, Martin J. Lack of association between NRAMB1 gene polymorphisms and *Trypanosoma cruzi* infection. *Tissue Antigens*. 2001 Apr;57(4):353-7.
- Campos MA, Closesl M, Valente EP, Cardoso JE, Akira S, Alvarez-Leite JI, Ropert C, Gazzinelli RT. 2004. Impaired production of proinflammatory cytokines and host resistance to acute infection with *Trypanosoma cruzi* in mice lacking functional myeloid differentiation factor 88. *J Immunol* 172: 1711-1718.
- Cardillo F, Voltarelli JC, Reed SG, Silva JS: Regulation of *Trypanosoma cruzi* infection in mice by IFN- γ and IL-10: the role of NK cells. *Infect Immun* 1996, 64:128-134
- Chagas C 1909. Nova tripanosomiase humana. Estudos sobre a morfologia e o ciclo evolutivo do *Schizotrypanum cruzi* n.g., n.sp., agente etiológico de nova entidade morbida do homem. *Mem Inst Oswaldo Cruz* 1: 159-218.
- Chagas C 1916. Tripanosomiase americana. Forma aguda. *Mem Inst Oswaldo Cruz* 8: 37-60.
- Chagas C 1911. Nova entidade mórbida do homem. Resumo geral dos achados etiológicos e clínicos. *Mem Inst Oswaldo Cruz* 3: 219.
- Chagas C 1934. Estado Atual da Tripanosomiase Americana. *Rev. Biol. Hyg.*, 5:58-
- Chamond N, Goytia M, Coatnoan N, Barale JC, Cosson A, Degraive WM, Minoprio P. Crystal structure, catalytic mechanism, and mitogenic properties of *Trypanosoma cruzi* proline racemase. *Proc Natl Acad Sci U S A*. 2006 Feb 7;103(6):1705-10.
- Chamond N, Gregoire C, Coatnoan N, Rougeot C, Freitas-Junior LH, da Silveira JF, Degraive WM, Minoprio P. Biochemical characterization of proline racemases from the human protozoan parasite *Trypanosoma cruzi* and definition of putative protein signatures. *J Biol Chem*. 2003 May 2;278(18):15484-94.
- Chamond N, Coatnoan N, Minoprio P. Immunotherapy of *Trypanosoma cruzi* infections. *Curr Drug Targets Immune Endocr Metabol Disord*. 2002 Oct;2(3):247-54.
- Chaves C.A.A., Al-Sabbagh, A., Sakurada, J.K., Santos, L.M.B.. 1993. Autoimmune response to myelin basic protein in experimental Chagas' disease. Resumo 12.055 do XVIII Congresso Brasileiro de Imunologia – Águas de Lindóia – SP (19-22/09/93).
- Clark RK, Kuhn RE 1999. *Trypanosoma cruzi* does not induce apoptosis in murine fibroblasts. *Parasitology* 118 (Pt 2):167-75.
- Coelho PS, Klein A, Talvani A, Coutinho SF, Takeuchi O, Akira S, Silva JS, Canizzaro H, Gazzinelli RT, Teixeira MM. 2002. Glycosylphosphatidylinositol-anchored mucin-like glycoproteins isolated from *Trypanosoma cruzi* trypomastigotes induce in vivo leukocyte recruitment dependent on MCP-1 production by IFN-gamma-primed-macrophages. *J Leukoc Biol*. 71:837-844.
- Cossio P.M., Laguens, R.P., Diez, C., Szarfman, A., Segal, A. & Arana, R.M.. 1974. Chagasic cardiopathy: Antibodies reacting with plasma membrane of striated muscle and endothelial cells. *Circulation*, 50: 1252-1259.
- Coutinho A. 1995. The network theory: 21 years later. *Scand. J. Immunol.*, 42: 3-8.
- Cunha-Neto E, Bilate AM, Hyland KV, Fonseca SG, Kalil J, Engman DM. 2006. Induction of cardiac autoimmunity in Chagas heart disease: a case for molecular mimicry. *Autoimmunity*. 39:41-54.
- Cunha-Neto E, Rizzo LV, Albuquerque F, Abel L, Guilherme L, Bocchi E, Bacal F, Carrara D, Ianni B, Mady C, Kalil J 1998. Cytokine production profile of heart-infiltrating T cells in Chagas' disease cardiomyopathy. *Braz J Med Biol Res* 31(1):133-7.
- Cunha-Neto, E., Coelho, V., Guilherme, L., Fiorelli, A., Stolf, N., Kalil, J.. 1996. Identification of cardiac myosin-B13 *Trypanosoma cruzi* protein crossreactive T cell clones in heart lesions of a chronic Chagas' cardiomyopathy patient. *J. Clin. Invest.*, 98: 1709-1712.
- Cunha-Neto, E., Duranti, M., Gruber, A., Zingales, B., Messias, I., Stolf, N., Bellotti, G., Patarroyo, M.E., Pillegi, F. and Kalil, J. 1995. Autoimmunity in Chagas' disease cardiopathy: biological relevance of cardiac myosin specific epitope crossreactive to an immunodominant *Trypanosoma cruzi* antigen. *Proc. Natl. Sci. USA*, 92: 3541-3545.

- D'ávila Reis D, Jones EM, Tostes Jr S, Lopes ER, Gazzinelli G, Colley DG, Mc Curley TL 1993. Characterization of inflammatory infiltrates in chronic chagasic myocardial lesions: presence of tumor necrosis factor- α cells and dominance of granzyme A+, CD8+ lymphocytes. *Am J Trop Med Hyg* 48: 637-644.
- de Souza EM, Araujo-Jorge TC, Bailly C, Lansiaux A, Batista MM, Oliveira GM, Soeiro MN. 2003. Host and parasite apoptosis following *Trypanosoma cruzi* infection in in vitro and in vivo models. *Cell Tissue Res*. 314: 223-235.
- D'Imperio Lima M.R., Joskowicz, M., Coutinho, A., Kipnis, T., Eisen, H.. 1985. Very large and isotypically atypical polyclonal plague-forming cell responses in mice infected with *Trypanosoma cruzi*. *Eur. J. Immunol.*, 15:201-203.
- dos Santos PVA, Roffê E, Santiago HC, Torres RA, Marino APMP, Paiva CN, Silva AA, Gazzinelli RT, Lannes-Vieira J. 2001. Prevalence of CD8+ T cells in *Trypanosoma cruzi*-elicited myocarditis is associated with acquisition of CD62L^{Low}LFA-1^{High}VLA-4^{High} activation phenotype and expression of IFN- γ -inducible adhesion and chemoattractant molecules. *Microbes Infect* 3: 971-984.
- Drigo SA, Cunha-Neto E, Ianni B, Cardoso MR, Braga PE, Fae KC, Nunes VL, Buck P, Mady C, Kalil J, Goldberg AC. TNF gene polymorphisms are associated with reduced survival in severe Chagas' disease cardiomyopathy patients. *Microbes Infect*. 2006 Mar;8(3):598-603.
- Dutra WO, da Luz ZM, Cancado JR, Pereira ME, Brigido-Nunes RM, Galvao LM, Colley DG, Brener Z, Gazzinelli G, Carvalho-Parra JF 1996b. Influence of parasite presence on the immunologic profile of peripheral blood mononuclear cells from chagasic patients after specific drug therapy. *Parasite Immunol* 18(11):579-85.
- Eksi S, Wassom DL, Powell MR. Host genetics and resistance to acute *Trypanosoma cruzi* infection in mice: profiles and compartmentalization of IL-2-, -4-, -5-, -10-, and IFN- γ -producing cells. *J Parasitol*. 1996 Feb;82(1):59-65.
- Fadden & Kelvin, 1997 Roffe E, Souza AL, Caetano BC, Machado PP, Barcelos LS, Russo RC, Santiago HC, Souza DG, Pinho V, Tanowitz HB, Camargos ER, Bruna-Romero O, Teixeira MM. DNA vaccine encoding CCL4/MIP-1 β enhances myocarditis in experimental *Trypanosoma cruzi* infection in rats. *Microbes Infect*. 2006 (12-13):2745-55.
- Fernandez-Mestre MT, Layrisse Z, Montagnani S, Acquatella H, Cataliotti F, Matos M, Balbas O, Makhatazde N, Dominguez E, Herrera F, Madrigal A. Influence of the HLA class II polymorphism in chronic Chagas' disease. *Parasite Immunol*. 1998 Apr;20(4):197-203.
- Fernandez-Mestre MT, Montagnani S, Layrisse Z. Is the CCR5-59029-G/G genotype a protective factor for cardiomyopathy in Chagas disease? *Hum Immunol*. 2004 Jul;65(7):725-8.
- Ferreira RC, Ianni BM, Abel LC, Buck P, Mady C, Kalil J, Cunha-Neto E 2003. Increased plasma levels of tumor necrosis factor- α in asymptomatic/"indeterminate" and Chagas disease cardiomyopathy patients. *Mem Inst Oswaldo Cruz* 98(3):407-11.
- Freire-de-Lima CG, Nascimento DO, Soares MB, Bozza PT, Castro-Faria-Neto HC, de Mello FG, DosReis GA, Lopes MF. Uptake of apoptotic cells drives the growth of a pathogenic trypanosome in macrophages. *Nature*. 2000 Jan 13;403(6766):199-203.
- Freitas HF, Chizzola PR, Paes AT, Lima AC, Mansur AJ. Risk stratification in a Brazilian hospital-based cohort of 1220 outpatients with heart failure: role of Chagas' heart disease. *Int J Cardiol*. 2005 Jul 10;102(2):239-47.
- Fuenmayor C, Higuchi ML, Carrasco H, Parada H, Gutierrez P, Aiello V, Palomino S 2005. Acute Chagas' disease: immunohistochemical characteristics of T cell infiltrate and its relationship with *T. cruzi* parasitic antigens. *Acta Cardiol* 60(1):33-7.
- Gattass C.R., Lima, M.T., Nóbrega, A.F., Barcinski, M.A., dos Reis, G.A.. 1988. Do self-heart-reactive T cells expand in *Trypanosoma cruzi*-immune hosts? *Infection and Immunity*, 56(5): 1402-1405.
- Gazzinelli RT, Oswald IP, Hieny S, James SL, Sher A 1992. The microbicidal activity of interferon- γ -treated macrophages against *Trypanosoma cruzi* involves an L-arginine-dependent, nitrogen oxide-mediated mechanism inhibitable by interleukin-10 and transforming growth factor- β . *Eur J Immunol* 22(10):2501-6.
- Gazzinelli RT, Pereira, M.E.S., Romanha, A., Gazzinelli, G., Brener, Z.. 1991. Direct lysis of *Trypanosoma cruzi*: a novel effector mechanism of protection mediated by human anti-gal antibodies. *Parasite Immunology*, 13: 345-356.
- Gomes JA, Bahia-Oliveira LM, Rocha MO, Busek SC, Teixeira MM, Silva JS, Correa-Oliveira R. 2005. Type 1 chemokine receptor expression in Chagas disease correlates with morbidity in cardiac patients. *Infect Immun*. 73:7960-7966.

- Gomes JA, Bahia-Oliveira LM, Rocha MO, Martins-Filho OA, Gazzinelli G, Correa-Oliveira R 2003. Evidence that development of severe cardiomyopathy in human Chagas' disease is due to a Th1-specific immune response. *Infect Immun* 71(3):1185-93.
- Hardison JL, Wrightsman RA, Carpenter PM, Kuziel WA, Lane TE, Manning JE. The CC chemokine receptor 5 is important in control of parasite replication and acute cardiac inflammation following infection with *Trypanosoma cruzi*. *Infect Immun*. 2006 Jan;74(1):135-43.
- Higuchi Mde L, Benvenuti LA, Martins Reis M, Metzger M 2003. Pathophysiology of the heart in Chagas' disease: current status and new developments. *Cardiovasc Res* 60(1):96-107.
- Higuchi ML, Brito T, Reis MM, Barbosa AJA, Belloti G, Pereira-Barreto AC, Pileggi F 1993. Correlation between *T. cruzi* parasitism and myocardial inflammation in human chronic chagasic myocarditis. Light microscopy and immunohistochemical findings. *Cardiovasc Pathol* 2: 101-6.
- Higuchi ML, Reis MM, Aiello VD, Benvenuti LA, Gutierrez OS, Vellotti G, Pileggi F 1997. Association of an increase in CD8+ T cells with the presence of *Trypanosoma cruzi* antigens in chronic, human, chagasic myocarditis. *Am J Trop Med Hyg* 56: 485-9.
- Hontebeyrie-Joskowicz M., Said, G., Milon, G., Marchal, G., Eisen, H.. 1987. L3T4+ T cells to mediate parasite-specific delayed-type hypersensitivity play a role in the pathology of experimental Chagas' disease. *Eur. J. Immunol.*, 17: 1027-1033.
- Hudson L. 1985. Autoimmune phenomena in chronic chagasic cardiopathy. *Parasitology Today*, 1(1): 6-9.
- Humphrey JS, McCormick TS, Rowland EC. Parasite antigen-induced IFN-gamma and IL-4 production by cells from pathopermissive and pathoresistant strains of mice infected with *Trypanosoma cruzi*. *J Parasitol*. 1997 Jun;83(3):533-6.
- Hunter CA, Slifer T, Araujo F. Interleukin-12-mediated resistance to *Trypanosoma cruzi* is dependent on tumor necrosis factor alpha and gamma interferon. *Infect Immun*. 1996 Jul;64(7):2381-6.
- Jones EM, Colley DG, Tostes S, Lopes ER, Vnencak-Jones CL, McCurley TL 1993. Amplification of a *Trypanosoma cruzi* DNA sequence from inflammatory lesions in human chagasic cardiomyopathy. *Am J Trop Med Hyg* 48: 348-57.
- Kalil J & Cunha-Neto E.. 1996. Autoimmunity in Chagas' disease cardiomyopathy: fulfilling the criteria at last? *Parasitology Today*, 12(10): 396-398.
- Khoury EL, Ritacco V, Cossio PM, Laguens RP, Szarfman A, Diez C, Arana RM. Circulating antibodies to peripheral nerve in American trypanosomiasis (Chagas' disease). *Clin Exp Immunol*. 1979 Apr;36(1):8-15.
- Kierszenbaum F 2005. Where do we stand on the autoimmunity hypothesis of Chagas disease? *TRENDS in Parasitol* 21(11):513-6.
- Köberle F. Cardiopatía chagásica. *O Hospital* 1958; 53:311-46.
- Köberle F. Chagas' disease and Chagas syndromes: The pathology of American Trypanosomiasis. *Advanced Parasitology*, 6: 63-113, 1968.
- Kozma C., Jaffé, R. & Jaffé, W. 1960. Estudo experimental sobre a patogenia das miocardites. *Arquivos Brasileiros de Cardiologia*, 13: 155-161.
- Kumar S, Tarleton RL. The relative contribution of antibody production and CD8+ T cell function to immune control of *Trypanosoma cruzi*. *Parasite Immunol*. 1998; 20:207-16.
- Laguens RP, Cabeza Meckert P, Chambo J. Origin and significance of anti-heart and anti-skeletal muscle autoantibodies in Chagas' disease. *Research in Immunology* 1991; 142: 160-163.
- Lannes-Vieira J. 2003. *Trypanosoma cruzi*-elicited CD8+ T cell-mediated myocarditis: chemokine receptors and adhesion molecules as potential therapeutic targets to control chronic inflammation? *Mem Inst Oswaldo Cruz* 98: 299-304.
- Laucella SA, Postan M, Martin D, Hubby Fralish B, Albareda MC, Alvarez MG, Lococo B, Barbieri G, Viotti RJ, Tarleton RL 2004. Frequency of interferon- gamma -producing T cells specific for *Trypanosoma cruzi* inversely correlates with disease severity in chronic human Chagas disease. *J Infect Dis* 189(5):909-18.
- Laucella SA, Riarte A, Prado N, Zapata J, Segura EL 2001. alpha 4 Integrins and sialyl Lewis x modulation in chronic Chagas disease: further evidence of persistent immune activation. *Scand J Immunol* 53(5):514-9.
- Laucella SA, Rottenberg ME, de Titto EH 1996. [Role of cytokines in resistance and pathology in *Trypanosoma cruzi* infection] *Rev Argent Microbiol* 28(2):99-109.
- Leavey JK, Tarleton RL. Cutting edge: dysfunctional CD8+ T cells reside in nonlymphoid tissues during chronic *Trypanosoma cruzi* infection. *J Immunol*. 2003 Mar 1;170(5):2264-8.

- Leite-de Moraes M.C., Coutinho, A., Hontobeyrie-Joskowicz, M., Minoprio, P., Eisen, H. and Bandeira, A. 1994. Skewed V β TCR repertoire of CD8+ T cells in murine *Trypanosoma cruzi* infection. *Int. Immunol.*, 6(3): 387-392.
- Leon JS, Engman DM 2003. The significance of autoimmunity in the pathogenesis of Chagas heart disease. *Front Biosci.* 2003 May 1;8:e315-22.
- Levin M.J. 1991. Molecular mimicry and Chagas' heart disease: high anti-R13 autoantibody levels are markers of severe Chagas' heart complaint. *Res. Immunol.*, 142: 157-159.
- Lieberman J. The ABCs of granule-mediated cytotoxicity: new weapons in the arsenal. *Nat Rev Immunol.* 2003;3:361-70.
- Lima MF, Zhang Y, Villalta F 1997. Beta-chemokines that inhibit HIV-1 infection of human macrophages stimulate uptake and promote destruction of *Trypanosoma cruzi* by human macrophages. *Cell Mol Biol (Noisy-le-grand)* 43(7):1067-76.
- Loetscher P, Ugiccioni M, Bodoli L, et al. CCR5 is characteristic of Th1 lymphocytes. *Nature* 1998; 391: 344-345.
- Lopes MF, Nunes MP, Henriques-Pons A, Giese N, Morse HC 3rd, Davidson WF, Araujo-Jorge TC, DosReis GA 1999. Increased susceptibility of Fas ligand-deficient gld mice to *Trypanosoma cruzi* infection due to a Th2-biased host immune response. *Eur J Immunol* 29(1):81-9.
- Lopes MF, Veiga VF, Santos AR, Fonseca ME, DosReis GA 1995. Activation-Induced CD4+ T cell death by apoptosis in experimental Chagas disease. *J Immunol* 154: 744-752.
- Lopez AF, Ribeiro dos Santos R, Sanderson CJ. Antibody-dependent cytotoxicity of *Trypanosoma cruzi* antigen-coated mouse cell lines by eosinophils and neutrophils. *Parasite Immunol.* 1983 Jan;5(1):77-84.
- Luster A.D. 1998. Chemokines – Chemotactic cytokines that mediate inflammation. *The New England Journal of Medicine*, 12:436-445
- Luster AD, Alon R, von Andrian UH. 2005. Immune cell migration in inflammation: present and future therapeutic targets. *Nat Immunol.* 6:1182-1190
- Machado FS, Koyama NS, Carregaro V, Ferreira BR, Milanezi CM, Teixeira MM, Rossi MA, Silva JS. 2005. CCR5 plays a critical role in the development of myocarditis and host protection in mice infected with *Trypanosoma cruzi*. *J Infect Dis.* 191: 627-636.
- Machado FS, Martins GA, Aliberti JC, Mestriner FL, Cunha FQ, Silva JS 2000. *Trypanosoma cruzi*-infected cardiomyocytes produce chemokines and cytokines that trigger potent nitric oxide-dependent trypanocidal activity. *Circulation* 102(24):3003-8.
- Mantovani A. Chemokines. Introduction and overview. *Chem Immunol* 1999; 72: 1-6.
- Margarinos-Torres CBM 1917. Estudo do miocárdio na moléstia de Chagas (forma aguda). Alteração na fibra muscular cardíaca. *Mem Inst Mem Inst Oswaldo Cruz* 9:114
- Margarinos-Torres CBM 1928. Endocarditis perietale dans la maladie de Chagas (*Trypanosmiase* americaine). *CR Soc Biol* 99: 886.
- Marino AP, Azevedo MI, Lannes-Vieira J 2003. Differential expression of adhesion molecules shaping the T-cell subset prevalence during the early phase of autoimmune and *Trypanosoma cruzi*-elicited myocarditis. *Mem Inst Oswaldo Cruz* 98(7):945-52.
- Marino AP, da Silva A, dos Santos P, Pinto LM, Gazzinelli RT, Teixeira MM, Lannes-Vieira J 2004. Regulated on activation, normal T cell expressed and secreted (RANTES) antagonist (Met-RANTES) controls the early phase of *Trypanosoma cruzi*-elicited myocarditis. *Circulation* 110(11):1443-9.
- Marino APMP, Silva AA, Pinho RT, et al. *Trypanosoma cruzi* infection: a continuous invader-host cell cross talk with participation of extracellular matrix, and adhesion and chemoattractant molecules. *Braz J Med Biol Res* 2003; 36: 1121-1133.
- Martin D, Tarleton R. Generation, specificity, and function of CD8+ T cells in *Trypanosoma cruzi* infection. *Immunol Rev.* 2004 Oct;201:304-17.
- Michailowsky V, Luhrs K, Rocha MO, Fouts D, Gazzinelli RT, Manning JE 2003. Humoral and cellular immune responses to *Trypanosoma cruzi*-derived paraflagellar rod proteins in patients with Chagas' disease. *Infect Immun* 71(6):3165-71.
- Michailowsky V, Murta SM, Carvalho-Oliveira L, Pereira ME, Ferreira LR, Brener Z, Romanha AJ, Gazzinelli RT 1998. Interleukin-12 enhances in vivo parasitocidal effect of benznidazole during acute experimental infection with a naturally drug-resistant strain of *Trypanosoma cruzi*. *Antimicrob Agents Chemother* 42(10):2549-56.
- Michailowsky V, Silva NM, Rocha CD, Vieira LQ, Lannes-Vieira J, Gazzinelli RT 2001. Pivotal role of interleukin-12 and interferon-gamma axis in controlling tissue parasitism and inflammation in the heart and central nervous system during *Trypanosoma cruzi* infection. *Am J Pathol* 159(5):1723-33.

- Milei J, Sanchez J, Storino R, Yu ZX, Denduchis B, Ferrans VJ. Antibodies to laminin and immunohistochemical localization of laminin in chronic chagasic cardiomyopathy: a review. *Cell Biochem.* 1993 Dec 22;129(2):161-70.
- Minoprio P, Burlen, O., Pereira, P., Guilbert, B., Andrade, L., Hontobeyrie-Joskowicz, M., Coutinho, A. 1988. Most B cells in acute *Trypanosoma cruzi* infection lack parasite specificity. *Scand. J. Immunol.*, 28:553-561.
- Minoprio P., Eisen, H., Joskowicz, M., Pereira, P. and Coutinho, A. 1987. Suppression of polyclonal antibody production in *Trypanosoma cruzi*-infected mice by treatment with anti-L3T4 antibodies. *J. Immunol.*, 139(2): 545-550.
- Minoprio PM, Eisen H, Forni L, Lima MRDL, Joskowicz M, Coutinho A 1986. Polyclonal lymphocyte responses to murine *Trypanosoma cruzi* infection. I. Quantitation of both T and B cell responses. *Scand J Immunol* 24: 661-8.
- Molina HA, Kierszenbaum F.A study of human myocardial tissue in Chagas' disease: distribution and frequency of inflammatory cell types. *Int J Parasitol.* 1987;17:1297-305
- Moncayo A. 2003. Chagas disease: current epidemiological trends after the interruption of vectorial and transfusional transmission in the Southern Cone countries. *Mem Inst Oswaldo Cruz.* 98: 577-5791.
- Mortatti RC, Maia LC, de Oliveira AV, Munk ME. Immunopathology of experimental Chagas' disease: binding of T cells to *Trypanosoma cruzi*-infected heart tissue. *Infect Immun.* 1990 Nov;58(11):3588-93.
- Mosca W., Briceño, L., Hernandez, M.I.. 1991. Cell mediated immunity in Chagas' disease. *Trypanosoma cruzi* antigens induce suppression of the in vitro proliferative response of mononuclear cells. *Mem. Inst. Oswaldo Cruz*, 86(2): 147-152.
- Pérez-Fuentes R, Guegan JF, Barnabe C, Lopez-Colombo A, Salgado-Rosas H, Torres-Rasgado E, Briones B, Romero-Diaz M, Ramos-Jimenez J, Sanchez-Guillen MC 2003. Severity of chronic Chagas disease is associated with cytokine/antioxidant imbalance in chronically infected individuals. *Int J Parasitol* 33(3):293-9.
- Petry P, Corral R, Meckert P, Laguens R 2002. Role of macrophage inflammatory protein-1alpha (MIP-1alpha) in macrophage homing in the spleen and heart pathology during experimental infection with *Trypanosoma cruzi*. *Acta Trop* 83(3):205-11.
- Petry K. & Eisen H.. 1989. Chagas disease: a model for the study of autoimmune diseases. *Parasitology Today*, 5(4): 111-116.
- Pinho RT, Vannier-Santos MA, Alves CR, Marino AP, Castello Branco LR, Lannes-Vieira J 2002. Effect of *Trypanosoma cruzi* released antigens binding to non-infected cells on anti-parasite antibody recognition and expression of extracellular matrix components. *Acta Trop* 83(2):103-15.
- Powell MR, Morgan J, Guarner J, Cooley DG. 1998. Cytokine mRNA levels in the hearts of inbred mice that develop different degrees of cardiomyopathy during infection with *Trypanosoma cruzi*. *Parasite Immunol* 20: 463-471.
- Proudfoot AE. Chemokine receptors: multifaceted therapeutic targets. 2002. *Nat Review Immunol* 2: 106-115.
- Ramasawmy R, Cunha-Neto E, Fae KC, Muller NG, Cavalcanti VL, Drigo SA, Ianni B, Mady C, Kalil J, Goldberg AC. 2006. BAT1, a putative anti-inflammatory gene, is associated with chronic Chagas cardiomyopathy. *J Infect Dis.* 193: 1394-1399.
- Reed SG 1988. In vivo administration of recombinant IFN-gamma induces macrophage activation, and prevents acute disease, immune suppression, and death in experimental *Trypanosoma cruzi* infections. *J Immunol* 140(12):4342-7.
- Reed SG, Brownell CE, Russo DM, Silva JS, Grabstein KH, Morrissey PJ. IL-10 mediates susceptibility to *Trypanosoma cruzi* infection. *J. Immunol.* 1994, 153:3135-3140.
- Reis DD, Jones EM, Tostes S Jr, Lopes ER, Gazzinelli G, Colley DG, McCurley TL 1993a. Characterization of inflammatory infiltrates in chronic chagasic myocardial lesions: presence of tumor necrosis factor-alpha+ cells and dominance of granzyme A+, CD8+ lymphocytes. *Am J Trop Med Hyg* 48(5):637-44.
- Reis DD, Jones EM, Tostes S, Lopes ER, Chapadeiro E, Gazzinelli G, Colley DG, McCurley TL 1993b. Expression of major histocompatibility complex antigens and adhesion molecules in hearts of patients with chronic Chagas' disease. *Am J Trop Med Hyg* 49: 192-200.
- Reis MM, Higuchi Mde L, Benvenuti LA, Aiello VD, Gutierrez PS, Bellotti G, Pileggi F 1997. An in situ quantitative immunohistochemical study of cytokines and IL-2R+ in chronic human chagasic myocarditis: correlation with the presence of myocardial *Trypanosoma cruzi* antigens. *Clin Immunol Immunopathol* 83(2):165-72.

- Ribeiro dos Santos R. & Hudson, L.. 1980b. Trypanosoma cruzi: immunological consequences of parasite modification of host cell. *Clin. Exp. Immunol.*, 40: 36-41.
- Ribeiro dos Santos R. & Hudson, L. 1980a. Trypanosoma cruzi: binding of parasite antigens to mammalian cell membranes. *Parasite Immunol.*, 2: 1-10.
- Ribeiro dos Santos R., Marquez, J.O., Furtado, C.C.V.G., Oliveira, J.C.R., Martins, A.R., Köberle, F. 1979. Antibodies against neurons in chronic Chagas' disease. *Tropenmed. Parasit.*, 30:19-23.
- Ribeiro dos Santos R., Pirmez, C., Savino, W.. 1991. Role of autoreactive immunological mechanisms in chagasic carditis. *Research in Immunology*, 142: 134-137.
- Ribeiro dos Santos R., Rossi, M.A., Laus, J.L., Silva, J.S., Savino, W., Mengel, J.. 1992. Anti-CD4 abrogates rejection and reestablishes long-term tolerance to syngeneic newborn hearts grafted in mice chronically infected with Trypanosoma cruzi. *J. Exp. Med.*, 175: 29-39.
- Ribeiro-Dos-Santos R, Mengel JO, Postol E, Soares RA, Ferreira-Fernandez E, Soares MB, Pontes-De-Carvalho LC. A heart-specific CD4+ T-cell line obtained from a chronic chagasic mouse induces carditis in heart-immunized mice and rejection of normal heart transplants in the absence of Trypanosoma cruzi. *Parasite Immunol.* 2001 Feb;23(2):93-101
- Rodriguez-Perez JM, Cruz-Robles D, Hernandez-Pacheco G, Perez-Hernandez N, Murguia LE, Granados J, Reyes PA, Vargas-Alarcon G. 2005. Tumor necrosis factor-alpha promoter polymorphism in Mexican patients with Chagas' disease. *Immunol Lett.* 98: 97-102.
- Ropert C, Ferreira LRP, Campos MAS, Procópio DO, Travassos LR, Ferguson MAJ, Reis LFL, Teixeira MT, Almeida IC, Gazzinelli RT. 2002. Macrophage signaling by glycosylphosphatidylinositol-anchored mucin-like glycoproteins derived from Trypanosoma cruzi trypomastigotes. *Microbes and Infection* 4: 115-125.
- Rossi L 1996. Neuropathology of chronic chagasic cardiopathy: A diagnostic reassessment. *Cardiovasc Pathol* 5:233-9.
- Rossi M.A., Bestetti, B. 1995. The challenge of chagasic cardiomyopathy. *Cardiology*, 86: 1-7.
- Rossi M.A. 1990. Microvascular changes as a cause of chronic cardiomyopathy in Chagas' disease. *American Heart Journal*, 120(1): 233-236.
- Rossi M.A. e Mengel, O.J. 1992. Patogênese da miocardite chagásica crônica: o papel de fatores autoimunes e microvasculares. *Rev. Inst. Med. Trop. São Paulo*, 34: 593-599.
- Rossi M.A., Gonçalves, S., Ribeiro dos Santos, R. 1984. Experimental Trypanosoma cruzi cardiomyopathy in BALB/c mice. *Am. J. Pathol.*, 114: 209-216.
- Rossi MA 1990. Microvascular changes as a cause of chronic cardiomyopathy in Chagas' disease. *Am Heart J* 120: 233-6.
- Rossi MA 1991. The pattern of myocardial fibrosis in chronic Chagas' heart disease. *Int J Cardiol* 30(3):335-40.
- Rottenberg ME, Bakhiet M, Olsson T, Kristensson K, Mak T, Wigzell H, Orn A.. Differential susceptibilities of mice genomically deleted of CD4 and CD8 to infections with Trypanosoma cruzi or Trypanosoma brucei. *Infect Immun.*1993; 61:5129-33.
- Rottenberg ME, Riarte A, Sporrang L, Altchek J, Petray P, Ruiz AM, Wigzell H, Orn A.. Outcome of infection with different strains of Trypanosoma cruzi in mice lacking CD4 and/or CD8. *Immunol Lett.* 1992;45:53-60.
- Russo M., Starobinas, N., Marcondes, M.C.G., Minoprio, P., Hontobeyrie-Joskowicz, M. 1996. The influence of T cell subsets on Trypanosoma cruzi multiplication in different organs. *Immunol. Letters*, 49: 163-168.
- Said G., Joskowicz, M., Barreira, A.A., Eisen, H.. 1985 Neuropathy associated with experimental Chagas' disease. *Ann. Neurol.*, 18: 676-683
- Sallusto F, Mackay CR, Lanzavecchia A. The role of chemokine receptors in primary, effector, and memory immune responses. *Annu Rev Immunol* 2000; 18: 593-620.
- Samudio M, Montenegro-James S, Cabral M, Martinez J, Rojas de Arias A, James MA 1998b. Cytokine responses in Trypanosoma cruzi-infected children in Paraguay. *Am J Trop Med Hyg* 58(1):119-21.
- Samudio M, Montenegro-James S, de Cabral M, Martinez J, Rojas de Arias A, Woroniecky O, James MA 1998a. Differential expression of systemic cytokine profiles in Chagas' disease is associated with endemicity of Trypanosoma cruzi infections. *Acta Trop* 69(2):89-97.
- Santos-Buch C.A. & Teixeira, A.R.L. 1974. The Immunology of experimental Chagas' disease. III Rejection of allogeneic heart cells in vitro. *The Journal of Experimental Medicine*, 140: 38-53.
- Savino W., Leite-de-Moraes, M.C., Hontobeyrie-Joskowicz, M., Dardenne, M.. 1989. Studies on the thymus in Chagas' disease. I. Changes in the thymic microenvironment in mice acutely infected with Trypanosoma cruzi.

- Schwartz M, Kipnis J. Protective autoimmunity and neuroprotection in inflammatory and noninflammatory neurodegenerative diseases. *J Neurol Sci.* 2005, 233(1-2):163-6.
- Shoda LKM, Kegerreis KA, Suarez CE, Roditi I, Corral RS, Bertot GM, Norimine J, Brown WC. 2001. DNA from protozoan parasites *Babesia bovis*, *Trypanosoma cruzi*, *T. brucei* is mitogenic for B lymphocytes and stimulates macrophage expression of interleukin-12, tumor necrosis factor alpha, and nitric oxide. *Infect Immun* 69: 2162-2171.
- Silva JS, Machado FS, Martins GA 2003. The role of nitric oxide in the pathogenesis of Chagas disease. *Front Biosci* 8:s314-25.
- Silva JS, Morrissey PJ, Grabstein KH, Mohler KM, Anderson D, Reed SG 1992. Interleukin 10 and interferon gamma regulation of experimental *Trypanosoma cruzi* infection. *J Exp Méd* 175(1):169-74.
- Silva JS, Twardzik D, Reed SG: Regulation of *Trypanosoma cruzi* infection in vitro and in vivo by transforming growth factor-beta. *J Exp Med* 1991, 174:539-545
- Silva JS, Vespa GN, Cardoso MA, Aliberti JC, Cunha FQ 1995. Tumor necrosis factor alpha mediates resistance to *Trypanosoma cruzi* infection in mice by inducing nitric oxide production in infected gamma interferon-activated macrophages. *Infect Immun* 63(12):4862-7.
- Szarfman A, Terranova VP, Rennard SI, Foidart JM, Lima MF, Scheinman JI, Martin GR 1982. Antibodies to laminin in Chagas' disease. *J Exp Med* 155: 1161-71.
- Talvani A, Ribeiro CS, Aliberti JC, Michailowsky V, Santos PV, Murta SM, Romanha AJ, Almeida IC, Farber J, Lannes-Vieira J, Silva JS, Gazzinelli RT 2000. Kinetics of cytokine gene expression in experimental chagasic cardiomyopathy: tissue parasitism and endogenous IFN-gamma as important determinants of chemokine mRNA expression during infection with *Trypanosoma cruzi*. *Microbes Infect* 2(8):851-66.
- Talvani A, Rocha MO, Barcelos LS, Gomes YM, Ribeiro AL, Teixeira MM. 2004. Elevated concentrations of CCL2 and tumor necrosis factor-alpha in chagasic cardiomyopathy. *Clin Infect Dis* 38: 943-950.
- Talvani A, Rocha MO, Ribeiro AL, Correa-Oliveira R, Teixeira MM 2004. Chemokine receptor expression on the surface of peripheral blood mononuclear cells in Chagas disease. *J Infect Dis* 189(2):214-20.
- Tanowitz HB, Gumprecht JP, Spurr D, Calderon TM, Ventura MC, Raventos-Suarez C, Kellie S, Factor SM, Hatcher VB, Wittner M, et al. Cytokine gene expression of endothelial cells infected with *Trypanosoma cruzi*. *J Infect Dis.* 1992 Sep;166(3):598-603.
- Tarleton R.L. 1990. Depletion of CD8+ cells increases susceptibility and reverses vaccine-induced immunity in mice infected with *Trypanosoma cruzi*. *J. Immunol.*, 144(2): 717-724.
- Tarleton RL 2001. Parasite persistence in the aetiology of Chagas disease. *Int J Parasitol* 31: 550-4.
- Tarleton RL 2003. Chagas disease: a role for autoimmunity? *Trends Parasitol.* 2003 Oct;19(10):447-51.
- Tarleton RL, Grusby MJ, Postan M, Glimcher LH 1996. *Trypanosoma cruzi* infection in MHC-deficient mice: further evidence for the role of both class I- and class II-restricted T cells in immune resistance and disease. *Int Immunol* 8(1):13-22.
- Tarleton RL, Sun J, Zhang L, Postan M 1994. Depletion of T-cell subpopulations results in exacerbation of myocarditis and parasitism in experimental Chagas' disease. *Infect Immun* 62(5):1820-9.
- Tarleton RL, Zhang L 1999. Chagas disease etiology: autoimmunity or parasite persistence? *Parasitol Today* 15(3):94-9.
- Tarleton RL, Zhang L, Downs MO 1997. "Autoimmune rejection" of neonatal heart transplants in experimental Chagas disease is a parasite-specific response to infected host tissue. *Proc Natl Acad Sci U S A* 94(8):3932-7.
- Tarleton RL. 2001. Parasite persistence in the aetiology of Chagas disease. *Int J Parasitol* 31: 549-553.
- Tarleton RL. Regulation of immunity in *Trypanosoma cruzi* infection. *Exp Parasitol* 1991; 73: 106-109.
- Tarleton RL. *Trypanosoma cruzi*-induced suppression of IL-2 production. II. Evidence for a role for suppressor cells. *J Immunol.* 1988 Apr 15;140(8):2769-73.
- Tarleton, RL, Koller BH, Latour A, Postan M. 1992. Susceptibility of β_2 -microglobulin-deficient mice to *Trypanosoma cruzi* infection. *Nature* 356: 338-340.
- Tostes Jr S, Lopes ER, Pereira FEL, Chapadeiro E 1994. Miocardite chagásica crônica humana: estudo quantitativo dos linfócitos CD4+ e dos CD8+ no exsudato inflamatório. *Rev Soc Bras Med Trop* 27:127-134.

- Toubi E, Shoenfeld Y. Protective autoimmunity in cancer (review). *Oncol Rep.* 2007 Jan;17(1):245-51.
- Umezawa E.S. & Kanbara, H.. 1993. Trypanosoma cruzi: characterization of epitopes recognized by anti-laminin (Gal α 1-3 Gal) antibodies from acute and chronic chagasic patients. *Mem. Inst. Oswaldo Cruz*, 88 supl.Nov.:191.
- Vago AR, Andrade LO, Leite AA, d'Avila Reis D, Macedo AM, Adad SJ, Tostes S Jr, Moreira MC, Filho GB, Pena SD 2000. Genetic characterization of Trypanosoma cruzi directly from tissues of patients with chronic Chagas disease: differential distribution of genetic types into diverse organs. *Am J Pathol* 156(5):1805-9.
- Van Voorhis W.C. 1992. Coculture of human peripheral blood mononuclear cells with Trypanosoma cruzi leads to proliferation of lymphocytes and cytokine production. *The Journal of Immunology*, 148(1): 239-248.
- Van Voorhis W.C., Schlekewy, L. and Trong, H.L.. 1991. Molecular mimicry by Trypanosoma cruzi: the epitope that mimics mammalian nerve can be mapped to a 12-amino acid peptide. *Proc. Natl. Acad. Sci. USA*, 88: 5993-5997.
- Vianna G 1911. Contribuição para o estudo da anatomia patológica da "Moléstia de Carlos Chagas". Esquizotripanose humana ou tiroidite parasitária. *Mem Inst Oswaldo Cruz* 3:276-293.
- Villalta F, Zhang Y, Bibb KE, Kappes JC, Lima MF 1998. The cysteine-cysteine family of chemokines RANTES, MIP-1alpha, and MIP-1beta induce trypanocidal activity in human macrophages via nitric oxide. *Infect Immun* 66(10):4690-5.
- Wirth JJ, Kierszenbaum F, Zlotnik A. Effects of IL-4 on macrophage functions: increased uptake and killing of a protozoan parasite (Trypanosoma cruzi). *Immunology.* 1989 Feb;66(2):296-301.
- Younès-Chennoufi AB, Hontobeyrie-Joskowicz, M., Tricottet, V., Eisen, H., Reynes, M., Said, G.. 1988a. Persistence of Trypanosoma cruzi antigens in the inflammatory lesions of chronically infected mice. *Transactions of the Royal Society of Tropical Medicine Hygiene*, 82: 77-83.

Fibrose Cardíaca Chagásica (Mariana Waghabi)

- Ammarguella F, Larouche I, Schiffrin EL (2001) Myocardial fibrosis in DOCA-salt hypertensive rats: effect of endothelin ET(A) receptor antagonism. *Circulation.* 16;103(2):319-24
- Andrade SG, Grimaud JA e Stocker-Guerret S (1989) Sequential changes of the connective matrix components of the myocardium (fibronectin and laminin) and evolution of cardiac fibrosis in mice infected with Trypanosoma cruzi. *Am J Trop Med Hyg.* 40:252-60
- Andrade Z (1991) Pathogenesis of Chagas' disease. *Res. Immunol.* 142:126-129.
- Araujo-Jorge TC, Waghabi MC, Hasslocher-Moreno AM, Xavier SS, Higuchi Mde L, Keramidias M, Bailly S, Feige JJ. (2002) Implication of transforming growth factor-beta1 in Chagas disease myocardiopathy. *J Infect Dis.* 186(12):1823-8.
- Assayag P, Carré F, Chevalier B, Delcayre C, Mansier P, Swynghedauw B. (1997) Compensated cardiac hypertrophy: arrhythmogenicity and the new myocardial phenotype Fibrosis. *Cardiovasc Res.* 34(3):439-44.
- Cancado JR. (1980) Acute form of Chagas' disease in Brazil *AMB Rev Assoc Med Bras.* 26(8):285-8.
- Chandross KJ, Chanson M, Spray DC, Kessler JA (1995) Transforming growth factor-beta 1 and forskolin modulate gap junctional communication and cellular phenotype of cultured Schwann cells. *J Neurosci.* 15:262-73
- Chinchilla A, Franco D. (2006) Regulatory mechanisms of cardiac development and repair. *Cardiovasc Hematol Disord Drug Targets* 6(2):101-12.
- Cutroneo, K.R. (2003) How is Type I procollagen synthesis regulated at the gene level during tissue fibrosis. *J Cell Biochem.* 1;90(1):1-5.
- de Carvalho, A. C., Tanowitz, H. B., Wittner, M., Dermietzel, R., Roy, C., Hertzberg, E. L., and Spray, D. C. (1992) Gap junction distribution is altered between cardiac myocytes infected with Trypanosoma cruzi. *Circ Res* 70: 733-742.
- Dhein S, Polontchouk L, Salameh A e Haefliger JA. (2002) Pharmacological modulation and differential regulation of the cardiac gap junction proteins connexin 43 and connexin 40. *Biol Cell.* 94:409-22.
- Ferreira, S.H. (1985) History of the development of inhibitors of angiotensin I conversion. *Drugs.* 30 Suppl 1:1-5
- Flanders KC, Holder MG, e Winokur TS (1995) Autoinduction of mRNA and protein expression for transforming growth factor-beta S in cultured cardiac cells. *J Mol Cell Cardiol.* 27:805-812.

- Gharaee-Kermani M, Phan SH. The role of eosinophils in pulmonary fibrosis (1998). *Int J Mol Med*.1(1):43-53.
- Gharaee-Kermani M e Phan SH (2001) Role of cytokines and cytokine therapy in wound healing and fibrotic diseases. *Curr Pharm Des*. 7:1083-103.
- Guarda E, Katwa LC, Myers PR, Tyagi SC, Weber KT. (1993) Effects of endothelins on collagen turnover in cardiac fibroblasts. *Cardiovasc Res*. 27(12):2130-4.
- Hao J, Ju H, Zhao S, Junaid A, Scammell-La Fleur T, Dixon IM. (1999) Elevation of expression of Smads 2, 3, and 4, decorin and TGF-beta in the chronic phase of myocardial infarct scar healing. *J Mol Cell Cardiol*. 31(3):667-78.
- Higuchi Mde L, Benvenuti LA, Martins Reis M, Metzger M (2003) Pathophysiology of the heart in Chagas' disease: current status and new developments. *Cardiovasc Res*. 15;60(1):96-107.
- Higuchi, M.D. (1995) Endomyocardial biopsy in Chagas' heart disease: pathogenetic contributions. *Sao Paulo Med J*. 113(2):821-5.
- Higuchi, M. L., Fukasawa, S., De Brito, T., Parzianello, L. C., Bellotti, G., and Ramires, J. A. (1999) Different microcirculatory and interstitial matrix patterns in idiopathic dilated cardiomyopathy and Chagas' disease: a three dimensional confocal microscopy study. *Heart* 82: 279-285.
- Hurst, V., IV, Goldberg, P. L., Minnear, F. L., Heimark, R. L., and Vincent, P. A. (1999) Rearrangement of adherens junctions by transforming growth factor-beta1: role of contraction. *Am J Physiol* 276: L582-L595.
- Johnson JA, Waller J (2002) Transforming growth factor beta-1 attenuates endothelin-1-induced functions in neonatal cardiac myocytes. *Life Sci*. 24;71(1):99-113.
- Jongsma, H.J., Wilders, R. (2000) Gap junctions in cardiovascular disease. *Circ Res*. 23;86(12):1193-7.
- Kanno S, Saffitz JE. (2001) The role of myocardial gap junctions in electrical conduction and arrhythmogenesis. *Cardiovasc Pathol*. 10(4):169-77.
- Lawrence, DA. (1995) Transforming growth factor-beta: an overview. *Kidney Int Suppl*. 49:S19-23.
- Lee, CG, Homer RJ, Zhu Z, Lanone S, Wang X, Koteliansky V, Shipley JM, Gotwals P, Noble P, Chen Q, Senior RM, Elias JA. (2001) Interleukin-13 induces tissue fibrosis by selectively stimulating and activating transforming growth factor beta(1). *J Exp Med*. 17;194(6):809-21.
- Li YY, Feng YQ, Kadokami T, McTiernan CF, Draviam R, Watkins SC, Feldman AM. (2000) Myocardial extracellular matrix remodeling in transgenic mice overexpressing tumor necrosis factor alpha can be modulated by anti-tumor necrosis factor alpha therapy. *Proc Natl Acad Sci U S A*. 7;97(23):12746-51.
- Lijnen PJ, Petrov VV e Fagard RH (2000) Induction of cardiac fibrosis by transforming growth factor- β 1. *Molec. Gen. and Met*. 71, 418-435.
- Machado FS, Martins GA, Aliberti JC, Mestriner FL, Cunha FQ e Silva JS. (2000) *Trypanosoma cruzi*-infected cardiomyocytes produce chemokines and cytokines that trigger potent nitric oxide-dependent trypanocidal activity. *Circulation*. 12;102:3003-8.
- Mady C, Cardoso RH, Barretto AC, da Luz PL, Bellotti G, Pileggi F. (1994) Survival and predictors of survival in patients with congestive heart failure due to Chagas' cardiomyopathy. *Circulation*. 90(6):3098-102.
- Magalhaes-Santos IF, Lima ES, Andrade SG (2002) Fibrogenesis and collagen resorption in the heart and skeletal muscle of *Calomys callosus* experimentally infected with *Trypanosoma cruzi*: immunohistochemical identification of extracellular matrix components. *Mem Inst Oswaldo Cruz*. 97(5):703-10.
- Marin Neto JA, Simoes MV, Sarabanda AV. (1999) Chagas' heart disease. *Arq Bras Cardiol*. 72(3):247-80.
- Marino, AP, Silva AA, Pinho RT, Lannes-Vieira J. (2003) *Trypanosoma cruzi* infection: a continuous invader-host cell cross talk with participation of extracellular matrix and adhesion and chemoattractant molecules. *Braz J Med Biol Res*. 36(8):1121-33.
- Marino AP, Silva AA, Santos PV, Pinto LM, Gazinelli RT, Teixeira MM, Lannes-Vieira J. (2005) CC-chemokine receptors: a potential therapeutic target for *Trypanosoma cruzi*-elicited myocarditis. *Mem Inst Oswaldo Cruz*. 100 Suppl 1:93-6.
- Massagué J (1998) TGF-beta signal transduction. *Annu Rev Biochem*. 67:753-91. Review.
- Montoya R, Dias JC, Coura JR. (2003) Chagas disease in a community in southeast Brazil. I. A serologic follow-up study on a vector controlled area. *Rev Inst Med Trop Sao Paulo*. 45(5):269-74.

- Ohnishi H, Oka T, Kusachi S, Nakanishi T, Takeda K, Nakahama M, Doi M, Murakami T, Ninomiya Y, Takigawa M, Tsuji T. (1998) Increased expression of connective tissue growth factor in the infarct zone of experimentally induced myocardial infarction in rats. *J Mol Cell Cardiol.* 30(11):2411-22.
- Peters, N. S., Green, C. R., Poole-Wilson, P. A., and Severs, N. J. (1993) Reduced content of connexin43 gap junctions in ventricular myocardium from hypertrophied and ischemic human hearts. *Circulation* **88**: 864-875.
- Pimentel RC, Yamada KA, Kléber AG, Saffitz JE. (2002) Autocrine regulation of myocyte Cx43 expression by VEGF. *Circ Res.* 5;90(6):671-7.
- Pinho RT, Vannier-Santos MA, Alves CR, Marino AP, Castello Branco LR, Lannes-Vieira J. (2002) Effect of *Trypanosoma cruzi* released antigens binding to non-infected cells on anti-parasite antibody recognition and expression of extracellular matrix components. *Acta Trop.* 83(2):103-15.
- Pinto Dias, JC (1985) Chagas disease and the technology problem. *Bol Oficina Sanit Panam.* 99(3):244-57.
- Prata, A. (1994) Chagas' disease. *Infect Dis Clin North Am.* 8(1):61-76.
- Roberts AB, Sporn MB. The transforming growth factor- β s. In "Peptide growth factors and their receptors". Sporn MB and Roberts AB, Eds, 1991 ; pp 419-472, Springer-Verlag, Berlin.
- Rossi M e Bestetti RB (1995) The challenge of chagasic cardiomyopathy. *Cardiology*, 86:1-7.
- Rossi MA (1998) Fibrosis and inflammatory cells in human chronic chagasic myocarditis: scanning electron microscopy and immunohistochemical observations. *Int J Cardiol.* 30;66:183-94.
- Rossi MA (2001) Connective tissue skeleton in the normal left ventricle and in hypertensive left ventricular hypertrophy and chronic chagasic myocarditis. *Med Sci Monit.* 7:820-32.
- Rossi, M.A. (1991) The pattern of myocardial fibrosis in chronic Chagas' heart disease. *Int J Cardiol.* 30(3):335-40.
- Rossi, M.A. (1997) Aortic endothelial cell changes in the acute septicemic phase of experimental *Trypanosoma cruzi* infection in rats: scanning and transmission electron microscopic study. *Am J Trop Med Hyg.* 57(3):321-7.
- Rudkin GH, Yamaguchi DT, Ishida K, Peterson WJ, Bahadosingh F, Thye D e Miller TA (1996) Transforming growth factor-beta, osteogenin, and bone morphogenetic protein-2 inhibit intercellular communication and alter cell proliferation in MC3T3-E1 cells. *JCellPhysiol*168:433-441.
- Sanderson N, Factor V, Nagy P, Kopp J, Kondaiah P, Wakefield L, Roberts AB, Sporn MB, Thorgeirsson SS (1995) Hepatic expression of mature transforming growth factor beta 1 in transgenic mice results in multiple tissue lesions. *Proc Natl Acad Sci U S A.* 28;92(7):2572-6.
- Silva JS, Twadzik DR e Reed SG (1991) Regulation of *Trypanosoma cruzi* infections in vitro and in vivo by transforming growth factor- β (TGF- β). *J. Exp. Med.* 174: 539-545.
- Soares MB, Santos RR. (1999) Immunopathology of cardiomyopathy in the experimental Chagas disease. *Mem Inst Oswaldo Cruz.*94 Suppl 1:257-62.
- Spach MS, Dolber PC. (1986) Relating extracellular potentials and their derivatives to anisotropic propagation at a microscopic level in human cardiac muscle. Evidence for electrical uncoupling of side-to-side fiber connections with increasing age. *Circ Res.* 58(3):356-71.
- Speir E, Zhou YF, Lee M, Shrivastav S e Casscells W (1989) Fibroblast growth factors are present in adult cardiac myocytes, in vivo. *Biochem Biophys Res Commun.* 31;159:1336-40.
- Sun J, Tarleton RL. (1993) Predominance of CD8+ T lymphocytes in the inflammatory lesions of mice with acute *Trypanosoma cruzi* infection. *Am J Trop Med Hyg.* 48(2):161-9.
- Taipale J, Saharinen J, Hedman K, Keski-Oja J. (1996) Latent transforming growth factor-beta 1 and its binding protein are components of extracellular matrix microfibrils. *J Histochem Cytochem.* 44(8):875-89.
- Tanowitz HB, Kirchhoff LV, Simon D, Morris SA, Weiss LM, Wittner M. (1992) Chagas' disease. *Clin Microbiol Rev.* 1992 Oct;5(4):400-19.
- Tanowitz HB, Huang H, Jelicks LA, Chandra M, Loredó ML, Weiss LM, Factor SM, Shtutin V, Mukherjee S, Kitis RN, Christ GJ, Wittner M, Shirani J, Kisanuki YY, Yanagisawa M. (2005) Role of endothelin 1 in the pathogenesis of chronic chagasic heart disease. *Infect Immun.* 73(4):2496-503.

- Varga J, Olsen A, Herhal J, Constantine G, Rosenbloom J e Jimenez SA. (1990) Interferon-gamma reverses the stimulation of collagen but not fibronectin gene expression by transforming growth factor-beta in normal human fibroblasts. *Eur J Clin Invest.* 20:487-93.
- Waghbi MC, Coutinho CM, Soeiro MN, Pereira MC, Feige JJ, Keramidas M, Cosson A, Minoprio P, Van Leuven F, Araujo-Jorge TC. (2002) Increased *Trypanosoma cruzi* invasion and heart fibrosis associated with high transforming growth factor beta levels in mice deficient in alpha(2)-macroglobulin. *Infect Immun.* 70(9):5115-23.
- Weber KT, Sun Y, Tyagi SC e Cleutjens JP. (1994) Collagen network of the myocardium: function, structural remodeling and regulatory mechanisms. *J Mol Cell Cardiol.* 26:279-92.
- Zhang K, Flanders KC, Phan SH. (1995) Cellular localization of transforming growth factor-beta expression in bleomycin-induced pulmonary fibrosis. *Am J Pathol.* 1995 Aug;147(2):352-61.
- Zhang K, Rekhter MD, Gordon D, Phan SH. (1994) Myofibroblasts and their role in lung collagen gene expression during pulmonary fibrosis. A combined immunohistochemical and in situ hybridization study. *Am J Pathol.* 145(1):114-25.
- Zhang L, e Tarleton RL (1996) Characterization of cytokine production in murine *Trypanosoma cruzi* infection by in situ immunocytochemistry: lack of association between susceptibility and type 2 cytokine production. *Eur J Immunol.* 26:102-109.

Avanços e perspectivas sobre a forma digestiva da doença de Chagas (Rodrigo Correa-Oliveira, Alexandre Barcelos Morais da Silveira, Débora d'Ávila Reis)

- Delgado AV, McManus AT, Chambers JP. 2003. Production of tumor necrosis factor-alpha, interleukin 1-beta, interleukin 2, and interleukin 6 by rat leukocyte subpopulations after exposure to substance P. *Neuropeptides* 37(6):355-61.
- Dias JC, Silveira AC, Schofield CJ. 2002. The impact of Chagas disease control in Latin America: a review. *Mem Inst Oswaldo Cruz* 97(5):603-12.
- Feistritzer C, Clausen J, Sturm DH, Djanani A, Gunsilius E, Wiedermann CJ, Kahler CM. 2003. Natural killer cell functions mediated by the neuropeptide substance P. *Regul Pept* 116(1-3):119-26.
- Jones EM, Colley DG, Tostes S, Lopes ER, Vnencak-Jones CL, McCurley TL. 1993. Amplification of a *Trypanosoma cruzi* DNA sequence from inflammatory lesions in human chagasic cardiomyopathy. *Am J Trop Med Hyg* 48(3):348-57.
- Koberle F. 1961. [Pathology and pathological anatomy of Chagas' disease.]. *Bol Oficina Sanit Panam* 51:404-28.
- Koberle F. 1968. Chagas' disease and Chagas' syndromes: the pathology of American trypanosomiasis. *Adv Parasitol* 6:63-116.
- Lemos EM, Reis D, Adad SJ, Silva GC, Crema E, Correa-Oliveira R. 1998. Decreased CD4(+) circulating T lymphocytes in patients with gastrointestinal chagas disease. *Clin Immunol Immunopathol* 88(2):150-5.
- Vago AR, Macedo AM, Adad SJ, Reis DD, Correa-Oliveira R. 1996. PCR detection of *Trypanosoma cruzi* DNA in oesophageal tissues of patients with chronic digestive Chagas' disease. *Lancet* 348(9031):891-2.
- Vago AR, Silva DM, Adad SJ, Correa-Oliveira R, d'Avila Reis D. 2003. Chronic Chagas disease: presence of parasite DNA in the oesophagus of patients without megaesophagus. *Trans R Soc Trop Med Hyg* 97(3):308-9.
- Wang HY, Jiang X, Gozes I, Fridkin M, Brenneman DE, Ganea D. 1999. Vasoactive intestinal peptide inhibits cytokine production in T lymphocytes through cAMP-dependent and cAMP-independent mechanisms. *Regul Pept* 84(1-3):55-67.
- Wang HY, Jiang XM, Ganea D. 2000. The neuropeptides VIP and PACAP inhibit IL-2 transcription by decreasing c-Jun and increasing JunB expression in T cells. *J Neuroimmunol* 104(1):68-78.

A forma nervosa da doença de Chagas: Histórico, quadro clínico e situação atual (Andréa Alice da Silva)

- Alencar A. Alterações cerebelares em pacientes com cardiopatia crônica chagásica. *Arq. Neuro-psiq.* 1967 25(3): 191-198.
- Alencar A. Encefalopatia crônica chagásica. *J.Bras. Neurol.* 1982 18: 7-12.

- Alencar AA and Elejalde, P. O sistema nervoso central na infestação experimental do camundongo albino pelo schizotrypanum cruzi. J. Bras. Neurol. 1960. XII (1,2,3): 48-57.
- Al-Sabbagh A, Garcia CAAC, Diaz-Bardles BM, Zaccarias C, Sakurada JK, Santos LMB. Evidence for cross-reactivity between antigen derived from *Trypanosoma cruzi* and myelin basic protein in experimental Chagas disease. Exp. Parasitol. 1998 89: 304-311.
- Amaral CFS, Tafuri, WL, Brener Z. Freqüência do parasitismo encefálico em camundongos experimentalmente inoculados com diferentes cepas de *Trypanosoma cruzi*. Rev. Soc. Bras. Med. Trop. 1975 IX(5): 243-246.
- Andrade LO, Machado CR, Chiari E, Pena SD, Macedo AM. Differential tissue distribution of diverse clones of *Trypanosoma cruzi* in infected mice. Mol Biochem Parasitol. 1999 May 25;100(2):163-72.
- Andrade SG, Carneiro Filho A, de Souza AJ, de Lima ES, Andrade ZA. Influence of treatment with immunosuppressive drugs in mice chronically infected with *Trypanosoma cruzi*. Int J Exp Pathol. 1997 Dec;78(6):391-9.
- Antunes AC, Cecchini FM, Bolli FB, Oliveira PP, Reboucas RG, Monte TL, Fricke D. Cerebral trypanosomiasis and AIDS. Arq Neuropsiquiatr. 2002 Sep;60(3-B):730-3.
- Arankowsky-Sandoval G, Mut-Martin M, Solis-Rodriguez F, Gongora-Alfaro JL, Barrera-Perez M. Sleep and memory deficits in the rat produced by experimental infection with *Trypanosoma cruzi*. Neurosci Lett. 2001 Jun 22;306(1-2):65-8.
- Carvalho CM, Andrade MC, Xavier SS, Mangia RH, Britto CC, Jansen AM, Fernandes O, Lannes-Vieira J, Bonecini-Almeida MG. Chronic Chagas' disease in rhesus monkeys (*Macaca mulatta*): evaluation of parasitemia, serology, electrocardiography, echocardiography, and radiology. Am J Trop Med Hyg. 2003 Jun;68(6):683-91.
- Chagas C. Estudo atual da trypanosomiase americana. Rev Biol Hyg. 1934 5:58-64.
- Chagas C. Lês formes d'une nouvelle trypanosomiase. Nouv. Iconogr. Salpêtr. 1913 26:1-81: 159-218.
- Chagas C. Nova tripanosomiase human. Mem Inst Oswaldo Cruz. 1909 1: 159.
- Couto, D. Doença de Chagas: manifestações nervosas. J. Bras. Neurol. 1964 XVI (2): 34-60.
- Culberston JT, Kessler WR. Age resistance of mice to *Trypanosoma cruzi*. J Parasitol 1942; 28: 155-8
- Da Mata JR, Camargos MR, Chiari E, Machado CR. *Trypanosoma cruzi* infection and the rat central nervous system: proliferation of parasites in astrocytes and the brain reaction to parasitism. Brain Res Bull. 2000 Sep 15;53(2):153-62.
- Da-Cruz AM, Igreja RP, Dantas W, Junqueira AC, Pacheco RS, Silva-Goncalves AJ, Pirmez C. Long-term follow-up of co-infected HIV and *Trypanosoma cruzi* Brazilian patients. Trans R Soc Trop Med Hyg. 2004 Dec;98(12):728-33.
- Ferreira MS, Borges AS. Some aspects of protozoan infections in immunocompromised patients- a review. Mem Inst Oswaldo Cruz. 2002 Jun;97(4):443-57.
- Ferreira MS, Nishioka Sde A, Rocha A, Silva AM, Ferreira RG, Olivier W, Tostes Junior S. Acute fatal *Trypanosoma cruzi* meningoencephalitis in a human immunodeficiency virus-positive hemophiliac patient. Am J Trop Med Hyg. 1991 Dec;45(6):723-7.
- Ferreira MS, Nishioka Sde A, Silvestre MT, Borges AS, Nunes-Araujo FR, Rocha A. Reactivation of Chagas' disease in patients with AIDS: report of three new cases and review of the literature. Clin Infect Dis. 1999 Dec;25(6):1397-400.
- Ferreira MS. Infections by protozoa in immunocompromised hosts. Mem Inst Oswaldo Cruz. 2000;95 Suppl 1:159-62.
- Guarner J, Bartlett J, Zaki SR, Colley DG, Grijalva MJ, Powell MR. Mouse model for Chagas disease: immunohistochemical distribution of different stages of *Trypanosoma cruzi* in tissues throughout infection. Am J Trop Med Hyg. 2001 Aug;65(2):152-8.
- Hauschka TS. Sex of host as a factor in Chagas disease. J Parasitol 1947; 33: 399-404
- Hoff R, Teixeira RS, Carvalho JS, Mott KE. *Trypanosoma cruzi* in the cerebrospinal fluid during the acute stage of Chagas' disease. N Engl J Med. 1978 Mar 16;298(11):604-6.
- Jardim E, Takayanagui OM. Chagasic meningoencephalitis with detection of *Trypanosoma cruzi* in the cerebrospinal fluid of an immunodepressed patient. J Trop Med Hyg. 1994 Dec;97(6):367-70.
- Khoury EL, Ritacco V, Cossio PM, Laguens RP, Szarfman A, Diez C, Arana RM. Circulating antibodies to peripheral nerve in American trypanosomiasis (Chagas' disease). Clin Exp Immunol. 1979 Apr;36(1):8-15.
- Kohl S, Pickering LK, Frankel LS, Yaeger RG. Reactivation of Chagas' disease during therapy of acute lymphocytic leukemia. Cancer. 1982 Sep 1;50(5):827-8.

- Kolodny, MH. Studies on age resistance against trypanosome infections. I. The resistance of rats of different ages to infection with *Trypanosoma cruzi*. Amer. J. Hyg., 29: 13-24. 1939.
- Köberle F. Chagas' disease and Chagas' syndrome: the pathology of American trypanosomiasis. Ad. Parasitol. 1968 6, 63-116.
- Mangone CA, Sica REP, Pereyra S, Genovese O, Segura E, Riarte A, Sanz OP, Segura M. Cognitive impairment in human chronic Chagas' disease. Arq. Neuropsiquiatr. 1994 52(2): 200-203.
- Marinho CR, Bucci DZ, Dagli ML, Bastos KR, Grisotto MG, Sardinha LR, Baptista CR, Gonçalves CP, Lima MR, Alvarez JM. Pathology affects different organs in two mouse strains chronically infected by a *Trypanosoma cruzi* clone: a model for genetic studies of Chagas' disease. Infect Immun. 2004 Apr;72(4):2350-7.
- Michailowsky V, Silva NM, Rocha CD, Vieira LQ, Lannes-Vieira J, Gazzinelli RT. Pivotal role of interleukin-12 and interferon-gamma axis in controlling tissue parasitism and inflammation in the heart and central nervous system during *Trypanosoma cruzi* infection. Am J Pathol. 2001 Nov;159(5):1723-33.
- Pacheco RS, Ferreira MS, Machado MI, Brito CM, Pires MQ, Da-Cruz AM, Coutinho SG. Chagas' disease and HIV co-infection: genotypic characterization of the *Trypanosoma cruzi* strain. Mem Inst Oswaldo Cruz. 1998 Mar-Apr;93(2):165-9.
- Pires Pires LL. Avaliação de uma vacina contra *Trypanosoma cruzi* em cães. 1978 [tese de mestrado] – Brasília.
- Pittella JE, Meneguette C, Barbosa AJ, Bambirra EA. Histopathological and immunohistochemical study of the brain in the acute and chronic phases of experimental trypanosomiasis cruzi in dogs. Ann Trop Med Parasitol. 1990 Dec;84(6):615-21.
- Pittella JE. Central nervous system involvement in Chagas' disease. An updating. Rev Inst Med Trop Sao Paulo. 1993 Mar-Apr;35(2):111-6.
- Pittella JE. Central nervous system involvement in experimental Trypanosomiasis cruzi. Mem Inst Oswaldo Cruz. 1991 Apr-Jun;86(2):141-5.
- Prata A. Chagas' disease. Infect Dis Clin North Am. 1994 Mar;8(1):61-76.
- Prata A. Clinical and epidemiological aspects of Chagas disease. Lancet Infect Dis. 2001 Sep;1(2):92-100.
- Prost, JO, Romero VH, MOrikone, AM, Polo G, Bosch AM. P300 event related potentials and qEEG evidenced a cerebral dysfunction in human chronic Chagas disease. Arq. Neuro-Psiquiatr., June 2000, vol.58, no.2A, p.262-271.
- Queiroz AC. Encefalomielite chagásica experimental em cães. Rev Pat Trop. 1975 4(4): 95-101.
- Ramos AN Jr. Inclusion of Chagas' disease reactivation as a condition for AIDS case definition to epidemiological surveillance in Brazil. Rev Soc Bras Med Trop. 2004 Mar-Apr;37(2):192-3.
- Ransohoff RM, Kivisakk P, Kidd G. Three or more routes for leukocyte migration into the central nervous system. Nat Rev Immunol. 2003 Jul;3(7):569-81.
- Regulated on activation, normal T cell expressed and secreted (RANTES) antagonist (Met-RANTES) controls the early phase of *Trypanosoma cruzi*-elicited myocarditis. Circulation. 2004 Sep 14;110(11):1443-9.
- Metze K, Maciel JA Jr. AIDS and Chagas' disease. Neurology. 1993 Feb;43(2):447-8.
- Ribeiro-dos-Santos R, Marquez JO, Von Gal Furtado CC, Ramos de Oliveira JC, Martins AR, Köberle F. Antibodies against neurons in chronic Chagas' Disease. Tropenm Paras. 1979 30:19-23.
- Rocha A, de Meneses AC, da Silva AM, Ferreira MS, Nishioka SA, Burgarelli MK, Almeida E, Turcato Junior G, Metze K, Lopes ER. Pathology of patients with Chagas' disease and acquired immunodeficiency syndrome. Am J Trop Med Hyg. 1994 Mar;50(3):261-8.
- Rocha A, Ferreira MS, Nishioka SA, Silva AM, Burgarelli MK, Silva M, Moura LP, Ugrinovich R, Raffin CN. *Trypanosoma cruzi* meningoencephalitis and myocarditis in a patient with acquired immunodeficiency syndrome. Rev Inst Med Trop Sao Paulo. 1993 Mar-Apr;35(2):205-8.
- Roffe E, Silva AA, Marino AP, dos Santos PV, Lannes-Vieira J. Essential role of VLA-4/VCAM-1 pathway in the establishment of CD8+ T-cell-mediated *Trypanosoma cruzi*-elicited meningoencephalitis. J Neuroimmunol. 2003 Sep;142(1-2):17-30.
- Roffê, E. Expressão de moléculas envolvidas na adesão e migração de células inflamatórias para o sistema nervoso central durante a infecção experimental pelo *Trypanosoma cruzi* e pelo *Toxoplasma gondii*: moléculas de adesão, componentes de matriz extracelular,

- quimiocinas e citocinas. 2000. Mestrado [Curso de Biologia Parasitária] – Instituto Oswaldo Cruz.
- Sartori AM, Caiaffa-Filho HH, Bezerra RC, do S Guilherme C, Lopes MH, Shikanai-Yasuda MA. Exacerbation of HIV viral load simultaneous with asymptomatic reactivation of chronic Chagas' disease. *Am J Trop Med Hyg.* 2002 Nov;67(5):521-3.
- Silva AA, Roffê E, Lannes-Vieira J. Expression of extracellular matrix components and their receptors in the central nervous system during experimental *Toxoplasma gondii* and *Trypanosoma cruzi* infection. *Braz J Med Biol Res.* 1999b May;32(5):593-600.
- Silva AA, Roffê E, Marino AP, dos Santos PV, Quirico-Santos T, Paiva CN, Lannes-Vieira J. Chagas' disease encephalitis: intense CD8+ lymphocytic infiltrate is restricted to the acute phase, but is not related to the presence of *Trypanosoma cruzi* antigens. *Clin Immunol.* 1999a Jul;92(1):56-66.
- Silva AA, Roffê E, Santiago H, Marino AP, Kroll-Palhães K, Teixeira MM, Gazzinelli RT, Lannes-Vieira J. *Trypanosoma cruzi*-triggered meningoencephalitis is a CCR1/CCR5-independent inflammatory process. *J Neuroimmunol.* 2007 Mar;184(1-2):156-63.
- Silva AA. Caracterização das alterações imunopatológicas presentes no sistema nervoso central durante a infecção chagásica experimental. Niterói, Rio de Janeiro, 1996. Mestrado [Curso de Patologia Experimental] – Universidade Federal Fluminense.
- Silva AA. Meningoencefalite na infecção experimental pelo *Trypanosoma cruzi*: mecanismos moleculares envolvidos na entrada das células inflamatórias no sistema nervoso central. Rio de Janeiro, 2006. Doutorado [curso de Biologia celular e molecular] – Fundação Oswaldo Cruz.
- Spinella S, Liegeard P, Hontebeyrie-Joskowicz M. *Trypanosoma cruzi*: predominance of IgG2a in nonspecific humoral response during experimental Chagas' disease. *Exp Parasitol.* 1992 Feb;74(1):46-56.
- Trischmann TM, Bloom BR. Genetics of murine resistance to *Trypanosoma cruzi*. *Infect Immun.* 1982 Feb;35(2):546-51.
- Vaidian AK, Weiss LM, Tanowitz HB. Chagas' disease and AIDS. *Kinetoplastid Biol Dis.* 2004 May 13;3(1):2.
- Vianna G. Contribuição para o estudo da anatomia patológica da "Moléstia de Carlos Chagas". *Mem Inst Oswaldo Cruz.* 1911 3:276-293.
- Villela E. Torres MCB. Estudo histopatológicos do sistema nervoso central em paralisia experimental determinada pelo *Schizotrypanum cruzi*. *Mem Inst Oswaldo Cruz.* 1926 19(2):175-219.
- Villela E. Verificação do poder patogênico do *Trypanosoma cruzi* (raça neurotrópica). *Ciencia Méd.*, 1925 3: 147-148.

Ativação do Sistema Cinina: um papel para a cruzipaina na imunopatogênese da doença de Chagas experimental (Julio Scharfstein)

Em construção

RESPOSTA IMUNE

A resposta imunológica dos pacientes chagásicos (Cristiane A.S. Menezes, Mauro M. Teixeira, Walderez O. Dutra)

- Buscaglia C.A. and Di Noia J.M. (2003) *Trypanosoma cruzi* clonal diversity and the epidemiology of Chagas disease. *Microbes Infect.* 5, 419-27.
- Vago A.R. *et al.* (2000) Genetic characterization of *Trypanosoma cruzi* directly from tissues of patients with chronic Chagas disease: differential distribution of genetic types into diverse organs. *Am J Pathol.* 156, 1805.
- Macedo A.M. *et al.* (2004) *Trypanosoma cruzi*: genetic structure of populations and relevance of genetic variability to the pathogenesis of chagas disease. *Mem Inst Oswaldo Cruz* 99, 1-12.
- Guerreiro C. and Machado A. (1913) Da reação de Bordet e Gendou na moléstia de Carlos Chagas como elemento diagnóstico. *Brasil Med.* 27, 225-6.

- Gazzinelli R.T. *et al.* (1991) Direct lysis of *Trypanosoma cruzi*: a novel effector mechanism of protection mediated by human anti-gal antibodies. *Parasite Immunol.* 13, 345-56.
- Krettli A. and Brener Z. (1982) Resistance against *Trypanosoma cruzi* associated to anti-living trypomastigote antibodies. *J Immunol.* 128, 2009-12.
- Cordeiro F. *et al.* (2001) Anti-*Trypanosoma cruzi* immunoglobulin G1 can be a useful tool for diagnosis and prognosis of human Chagas disease. *Clin Diagn Lab Immunol.* 8, 112-8.
- Kierszenbaum F. (2005) Where do we stand on the autoimmunity hypothesis of Chagas disease? *Trends Parasitol.* 21, 513-6.
- Gazzinelli, R.T. *et al.* (1990) Two models of idiotypic stimulation of T lymphocytes from patients with Chagas' disease: correlations with clinical forms of infection. *Res. Immunol.* 140, 757-761.
- Reis D.D. *et al.* (1993) Antibodies to *Trypanosoma cruzi* express idiotypic patterns that can differentiate between patients with asymptomatic or severe Chagas disease. *J Immunol.* 150, 1611-8.
- Dutra W.O. *et al.* (2000) Self and nonself stimulatory molecules induce preferential expansion of CD5+ B cells or activated T cells of chagasic patients, respectively. *Scand J Immunol.* 51, 91-7.
- Mosca W. *et al.* (1979) Immune response in human Chagas' disease I. lymphocyte blastogenesis in chagasic patients without evidence of cardiomyopathy. *Acta Cient Venez.* 30, 401-4.
- Morato, MJ. *et al.* (1986) Cellular immune responses of chagasic patients to antigens derived from different *Trypanosoma cruzi* strains and clones. *Am. J. Trop. Med. Hyg.* 35, 505-511
- Cunha-Neto E *et al.* (1995) Autoimmunity in Chagas disease cardiopathy: biological relevance of a cardiac myosin-specific epitope crossreactive to an immunodominant *Trypanosoma cruzi* antigen. *Proc Natl Acad Sci U S A.* 92, 3541-5.
- Teixeira MM, Gazzinelli RT, Silva JS. (2002) Chemokines, inflammation and *Trypanosoma cruzi* infection. *Trends Parasitol.* 18, 262-5.
- Argibay PF. *et al.* (2002) *T. cruzi* surface mucin TcMuc-e2 expressed on higher eukaryotic cells induces human T cell anergy, which is reversible. *Glycobiology.* 12, 25-32.
- Sathler-Avelar R. *et al.* (2003) Phenotypic features of peripheral blood leucocytes during early stages of human infection with *Trypanosoma cruzi*. *Scand J Immunol.* 58, 655-63.
- Beltz LA, Szein MB, Kierszenbaum F. (1988) Novel mechanism for *Trypanosoma cruzi*-induced suppression of human lymphocytes. Inhibition of IL-2 receptor expression. *J Immunol.* 141, 289-94.
- Dutra W.O. *et al.* (1994) Activated T and B lymphocytes in peripheral blood of patients with Chagas disease. *Int Immunol* 6, 499-506.
- Dutra W.O. *et al.* (1996) Chagasic patients lack CD28 expression on many of their circulating T lymphocytes. *Scand J Immunol.* 43, 88-93.
- Lemos EM . *et al.* (1998) Decreased CD4(+) circulating T lymphocytes in patients with gastrointestinal chagas disease. *Clin Immunol Immunopathol.* 88, 150-5.
- Menezes C.A. *et al.* (2004) Phenotypic and functional characteristics of CD28+ and CD28- cells from chagasic patients: distinct repertoire and cytokine expression. *Clin. Exp. Immunol.* 137, 129-38.
- Reis, D. D. *et al.* (1993) Characterization of inflammatory infiltrates in chronic chagasic myocardial lesions: presence of TNF-A-alfa+ cells and dominance of granzyme A+, CD8+ lymphocytes. *Am. J. Trop. Med. Hyg.* 43, 637-642.
- Fonseca SG *et al.* (2007) Locally produced survival cytokines IL-15 and IL-7 may be associated to the predominance of CD8+ T cells at heart lesions of human chronic Chagas disease cardiomyopathy. *Scand J Immunol.* 66, 362-71.
- Vitelli-Avelar DM. *et al.* (2005) Chagasic patients with indeterminate clinical form of the disease have high frequencies of circulating CD3+CD16-CD56+ natural killer T cells and CD4+CD25High regulatory T lymphocytes. *Scand J Immunol.* 62, 297-308.
- Dutra WO, *et al.* (1997) Cytokine mRNA profile of peripheral blood mononuclear cells isolated from individuals with *Trypanosoma cruzi* chronic infection. *Scand J Immunol* 45, 74-80.
- Gomes J.A. *et al.* (2003) Evidence that development of severe cardiomyopathy in human Chagas disease is due to a Th1-specific immune response. *Infect Immun.* 71, 1185-93.
- Cunha-Neto E. *et al.* (2005) Cardiac gene expression profiling provides evidence for cytokinopathy as a molecular mechanism in Chagas' disease cardiomyopathy. *Am J Pathol.* 167, 305-13.

- Bahia-Oliveira LM. *et al.* (2000) Immunological and clinical evaluation of chagasic patients subjected to chemotherapy during the acute phase of *Trypanosoma cruzi* infection 14-30 years ago. *J Infect Dis.* 182, 634-8.
- Sathler-Avelar R *et al.* (2006) Benznidazole treatment during early-indeterminate Chagas' disease shifted the cytokine expression by innate and adaptive immunity cells toward a type 1-modulated immune profile. *Scand J Immunol.* 64, 554-63.
- Laucella S.A. *et al.* (2004) Frequency of interferon- gamma -producing T cells specific for *Trypanosoma cruzi* inversely correlates with disease severity in chronic human Chagas disease. *J Infect Dis.* 189, 909-18.
- Abel L.C. *et al.* (2001) Chronic Chagas disease cardiomyopathy patients display an increased IFN- γ -response to *Trypanosoma cruzi* infection. *J Autoimmun.* 17, 99-107.
- Talvani A. *et al.* (2004) Chemokine receptor expression on the surface of peripheral blood mononuclear cells in Chagas disease. *J. Infect Dis.* 189, 214-20.
- Ferreira R.C. *et al.* (2003) Increased plasma levels of tumor necrosis factor- α in asymptomatic/"indeterminate" and Chagas disease cardiomyopathy patients. *Mem Inst Oswaldo Cruz.* 98, 407-11.
- Talvani A. *et al.* (2004) Elevated concentrations of CCL2 and tumor necrosis factor- α in chagasic cardiomyopathy. *Clin Infect Dis.* 38, 943-50.
- Souza P.E. *et al.* (2004) Monocytes from patients with indeterminate and cardiac forms of Chagas disease display distinct phenotypic and functional characteristics associated with morbidity. *Infect Immun.* 72, 5283-91.
- de Barros-Mazon S. *et al.* (2004) Differential regulation of lymphoproliferative responses to *Trypanosoma cruzi* antigen in patients with the cardiac or indeterminate form of Chagas disease. *Clin Immunol.* 111, 137-45.
- Florez O. *et al.* (2006) Interleukin-1 gene cluster polymorphism in chagas disease in a Colombian case-control study. *Hum Immunol.* 67, 741-8.
- Ramasawmy R. *et al.* (2006) The monocyte chemoattractant protein-1 gene polymorphism is associated with cardiomyopathy in human chagas disease. *Clin Infect Dis* 43, 305-11.
- Drigo SA *et al.* (2006) TNF-A gene polymorphisms are associated with reduced survival in severe Chagas' disease cardiomyopathy patients. *Microbes Infect.* 8, 598-603.
- Rodriguez-Perez JM. *et al.* (2005) Tumor necrosis factor- α promoter polymorphism in Mexican patients with Chagas' disease. *Immunol Lett.* 15, 97-102.
- Ramasawmy R. *et al.* (2006) BAT1, a putative anti-inflammatory gene, is associated with chronic Chagas cardiomyopathy. *J Infect Dis.* 193, 1394-9.
- Golgher D, Gazzinelli RT. (2004) Innate and acquired immunity in the pathogenesis of Chagas disease. *Autoimmunity.* 37, 399-409.
- Atwood JA 3rd *et al.* (2005) The *Trypanosoma cruzi* proteome. *Science.* 309, 473-6.
- Martin DL *et al.* (2006) CD8+ T-Cell responses to *Trypanosoma cruzi* are highly focused on strain-variant trans-sialidase epitopes. *PLoS Pathog.* 2, 77.
- Cunha-Neto E. *et al.* (1994) Restricted heterogeneity of T cell receptor variable alpha chain transcripts in hearts of Chagas disease cardiomyopathy patients. *Parasite Immunol.* 16, 171-9.

Apoptose e Doença de Chagas – um papel na imuno-regulação? (George A. dos Reis, Marcela F. Lopes)

Em construção

Regulação da resposta imune na doença de Chagas (Luzia Maria de Oliveira Pinto, Vinícius Cotta-de-Almeida)

- Abel LC, Rizzo LV, Ianni B *et al.* Chronic Chagas' disease cardiomyopathy patients display an increased IFN- γ response to *Trypanosoma cruzi* infection. *J Autoimmun* 2001;17:99–107.
- Akira S. TLR signaling. *Curr Top Microbiol Immunol.* 2006;311:1-16. Review.
- Albareda MC, Laucella SA, Alvarez MG, Armenti AH, Bertochi G, Tarleton RL, Postan M. *Trypanosoma cruzi* modulates the profile of memory CD8+ T cells in chronic Chagas' disease patients. *Int Immunol.* 2006;18(3):465-71.
- Andrade SG, Campos RF, Sobral, KSC, Magalhães, JB, Guedes, RSO, Guerreiro, ML. Reinfections with strains of *Trypanosoma cruzi*, of different biomes as a factor of

- aggravation of myocarditis and myositis in mice *Revista da Sociedade Brasileira de medicina tropical* 2006; 39 (1).
- Araujo FF, Gomes JA, Rocha MO, Williams-Blangero S, Pinheiro VM, Morato MJ, Correa-Oliveira R. Potential role of CD4+CD25HIGH regulatory T cells in morbidity in Chagas disease. *Front Biosci.* 2007;12:2797-806.
- Araujo FG. Development of resistance to *Trypanosoma cruzi* in mice depends on a viable population of L3T4+ (CD4+) T lymphocytes. *Infect Immun.* 1989;57(7):2246-8.
- Bafica A, Santiago HC, Goldszmid R, Ropert C, Gazzinelli RT, Sher A. Cutting edge: TLR9 and TLR2 signaling together account for MyD88-dependent control of parasitemia in *Trypanosoma cruzi* infection. *J Immunol.* 2006;177(6):3515-9.
- Bevan MJ. Helping the CD8(+) T-cell response. *Nat Rev Immunol.* 2004;4(8):595-602.
- Brown, W. C. & Corral, R. S. Stimulation of B lymphocytes, macrophages, and dendritic cells by protozoan DNA. *Microbes Infect.* 2002; 4: 969–974.
- Campos MA, Almeida IC, Takeuchi O, Akira S, Valente EP, Procopio DO, Travassos LR, Smith JA, Golenbock DT, Gazzinelli RT. Activation of Toll-like receptor-2 by glycosylphosphatidylinositol anchors from a protozoan parasite. *J Immunol.* 2001;167(1):416-23.
- Cardillo F, Postol E, Nihei J, Aroeira LS, Nomizo A, Mengel J. B cells modulate T cells so as to favour T helper type 1 and CD8(+) T-cell responses in the acute phase of *Trypanosoma cruzi* infection. *Immunology.* 2007 Jul 16; [Epub ahead of print]
- Cardillo F, Voltarelli JC, Reed SG, Silva JS. Regulation of *Trypanosoma cruzi* infection in mice by gamma interferon and interleukin 10: role of NK cells. *Infect Immun.* 1996;64(1):128-34.
- Chaussabel D, Pajak B, Vercruysse V, Bisseye C, Garze V, Habib M, Goldman M, Moser M, Vray B. Alteration of migration and maturation of dendritic cells and T-cell depletion in the course of experimental *Trypanosoma cruzi* infection. *Lab Invest.* 2003;83(9):1373-82.
- Corsini AC, Braz R, Ciampi DB, Zucato MR. Resistance to *Trypanosoma cruzi* infection in relation to the timing of IgG humoral response. *Z Parasitenkd.* 1982;68(1):15-25.
- Cunha-Neto E, Dzau VJ, Allen PD *et al.* Cardiac gene expression profiling provides evidence for cytokinopathy as a molecular mechanism in Chagas' disease cardiomyopathy. *Am J Pathol* 2005;167:305–13.
- dos Santos PV, Roffe E, Santiago HC, Torres RA, Marino AP, Paiva CN, Silva AA, Gazzinelli RT, Lannes-Vieira J. Prevalence of CD8(+)alpha beta T cells in *Trypanosoma cruzi*-elicited myocarditis is associated with acquisition of CD62L(Low)LFA-1(High)VLA-4(High) activation phenotype and expression of IFN-gamma-inducible adhesion and chemoattractant molecules. *Microbes Infect.* 2001;3(12):971-84.
- Drennan MB, Stijlemans B, Van den Abbeele J, Quesniaux VJ, Barkhuizen M, Brombacher F, De Baetselier P, Ryffel B, Magez S. The induction of a type 1 immune response following a *Trypanosoma brucei* infection is MyD88 dependent. *J Immunol.* 2005;175(4):2501-9.
- Duthie MS, Kahn M, White M, Kapur RP, Kahn SJ. Both CD1d antigen presentation and interleukin-12 are required to activate natural killer T cells during *Trypanosoma cruzi* infection. *Infect Immun.* 2005;73(3):1890-4.
- Duthie MS, Kahn SJ. NK cell activation and protection occur independently of natural killer T cells during *Trypanosoma cruzi* infection. *Int Immunol.* 2005;17(5):607-13.
- Fernandez-Gomez R, Esteban S, Gomez-Corvera R, Zoulika K, Ouaiissi A. *Trypanosoma cruzi*: Tc2 released protein-induced increased expression of nitric oxide synthase and nitric oxide production by macrophages. *J Immunol.* 1998;160(7):3471-9.
- Fonseca SG, Reis MM, Coelho V, Nogueira LG, Monteiro SM, Mairena EC, Bacal F, Bocchi E, Guilherme L, Zheng XX, Liew FY, Higuchi ML, Kalil J, Cunha-Neto E. Locally produced survival cytokines IL-15 and IL-7 may be associated to the predominance of CD8+ T cells at heart lesions of human chronic Chagas disease cardiomyopathy. *Scand J Immunol.* 2007;66(2-3):362-71.
- Freire-de-Lima C, Pecanha LM, Dos Reis GA. Chronic experimental Chagas' disease: functional syngeneic T-B-cell cooperation in vitro in the absence of an exogenous stimulus. *Infect Immun.* 1996;64(7):2861-6.
- Gazzinelli RT, Denkers EY. Protozoan encounters with Toll-like receptor signalling pathways: implications for host parasitism. *Nat Rev Immunol.* 2006;6(12):895-906.
- Gazzinelli RT, Oswald IP, Hieny S, James SL, Sher A. The microbicidal activity of interferon-gamma-treated macrophages against *Trypanosoma cruzi* involves an L-arginine-dependent, nitrogen oxide-mediated mechanism inhibitable by interleukin-10 and transforming growth factor-beta. *Eur J Immunol.* 1992;22(10):2501-6.

- Gazzinelli RT, Oswald IP, Hieny S, James SL, Sher A. The microbicidal activity of interferon-gamma-treated macrophages against *Trypanosoma cruzi* involves an L-arginine-dependent, nitrogen oxide-mediated mechanism inhibitable by interleukin-10 and transforming growth factor-beta. *Eur J Immunol*. 1992; 22:2501-6.
- Gomes JA, Bahia-Oliveira LM, Rocha MO, Martins-Filho OA, Gazzinelli G, Correa-Oliveira R. Evidence that development of severe cardiomyopathy in human Chagas' disease is due to a Th1-specific immune response. *Infect Immun*. 2003;71(3):1185-93.
- Graefe SE, Streichert T, Budde BS, Nurnberg P, Steeg C, Muller-Myhsok B, Fleischer B. Genes from Chagas susceptibility loci that are differentially expressed in *T. cruzi*-resistant mice are candidates accounting for impaired immunity. *PLoS ONE*. 2006 Dec 20;1:e57.
- Harris, T. H., Cooney, N. M., Mansfield, J. M. & Paulnock, D. M. Signal transduction, gene transcription, and cytokine production triggered in macrophages by exposure to trypanosome DNA. *Infect. Immun*. 2006; 74: 4530–4537.
- Hawkins ED, Hommel M, Turner ML, Batty FL, Markham JF, Hodgkin PD. Measuring lymphocyte proliferation, survival and differentiation using CFSE time-series data. *Nat Protoc*. 2007;2(9):2057-67.
- Higuchi ML, De Brito T, Reis MM *et al*. Correlation between *Trypanosoma cruzi* parasitism and myocardial inflammatory infiltrate in human chronic chagasic myocarditis: light microscopy and immunohistochemical finding. *Cardiovasc Pathol* 1993;2:101–6. A
- Higuchi ML, Gutierrez PS, Aiello VD, Palomino S. Immunohistochemical characterisation of infiltrating cells in human chronic myocarditis: comparison with myocardial rejection process. *Virchows Arch Pathol Anat* 1993;4233:157–60. B
- Hunter CA, Ellis-Neyes LA, Slifer T, Kanaly S, Grunig G, Fort M, Rennick D, Araujo FG. IL-10 is required to prevent immune hyperactivity during infection with *Trypanosoma cruzi*. *J Immunol*. 1997;158(7):3311-6.
- Hunter CA, Villarino A, Artis D, Scott P. The role of IL-27 in the development of T-cell responses during parasitic infections. *Immunol Rev*. 2004;202:106-14. Review.
- Huster KM, Stemberger C, Busch DH. Protective immunity towards intracellular pathogens. *Curr Opin Immunol*. 2006 Aug;18(4):458-64. Epub 2006 Jun 12. Review.
- Janeway CA Jr. How the immune system protects the host from infection. *Microbes Infect*. 2001;3(13):1167-71. Review.
- Kierszenbaum F, Howard JG. Mechanisms of resistance against experimental *Trypanosoma cruzi* infection: the importance of antibodies and antibody-forming capacity in the Biozzi high and low responder mice. *J Immunol*. 1976;116(5):1208-11.
- Kotner J, Tarleton R. Endogenous CD4(+) CD25(+) regulatory T cells have a limited role in the control of *Trypanosoma cruzi* infection in mice. *Infect Immun*. 2007;75(2):861-9. Epub 2006 Nov 13.
- Laucella SA, Postan M, Martin D, Hubby Fralish B, Albareda MC, Alvarez MG, Lococo B, Barbieri G, Viotti RJ, Tarleton RL. Frequency of interferon-gamma-producing T cells specific for *Trypanosoma cruzi* inversely correlates with disease severity in chronic human Chagas disease. *J Infect Dis*. 2004;189(5):909-18.
- Leavey JK, Tarleton RL. Cutting edge: dysfunctional CD8+ T cells reside in nonlymphoid tissues during chronic *Trypanosoma cruzi* infection. *J Immunol*. 2003;170(5):2264-8.
- Marinho CR, Bastos KR, Sardinha LR, Grisotto MG, Lima MR, Alvarez JM. Challenge of *Trypanosoma cruzi* chronically infected mice with trypomastigotes activates the immune system and reduces subpatent parasitemia levels. *J Parasitol*. 2004;90(3):516-23.
- Marinho CR, Nunez-Apaza LN, Martins-Santos R, Bastos KR, Bombeiro AL, Bucci DZ, Sardinha LR, Lima MR, Alvarez JM. IFN-gamma, but not nitric oxide or specific IgG, is essential for the in vivo control of low-virulence Sylvio X10/4 *Trypanosoma cruzi* parasites. *Scand J Immunol*. 2007;66(2-3):297-308.
- Martin D, Tarleton R. Generation, specificity, and function of CD8+ T cells in *Trypanosoma cruzi* infection. *Immunol Rev*. 2004;201:304-17. Review.
- Martin DL, Tarleton RL. Antigen-specific T cells maintain an effector memory phenotype during persistent *Trypanosoma cruzi* infection. *J Immunol*. 2005;174(3):1594-601.
- Martin DL, Weatherly DB, Laucella SA, Cabinian MA, Crim MT, Sullivan S, Heiges M, Craven SH, Rosenberg CS, Collins MH, Sette A, Postan M, Tarleton RL. CD8+ T-Cell responses to *Trypanosoma cruzi* are highly focused on strain-variant trans-sialidase epitopes. *PLoS Pathog*. 2006 Aug;2(8):e77.
- Medzhitov R, Janeway CA Jr. Decoding the patterns of self and nonself by the innate immune system. *Science*. 2002;296(5566):298-300.

- Michailowsky V, Silva NM, Rocha CD, Vieira LQ, Lannes-Vieira J, Gazzinelli RT. Pivotal role of interleukin-12 and interferon-gamma axis in controlling tissue parasitism and inflammation in the heart and central nervous system during *Trypanosoma cruzi* infection. *Am J Pathol*. 2001;159(5):1723-33.
- Minoprio P, Coutinho A, Spinella S, Hontebeyrie-Joskowicz M. Xid immunodeficiency imparts increased parasite clearance and resistance to pathology in experimental Chagas' disease. *Int Immunol*. 1991;3(5):427-33.
- Miyahira Y, Murata K, Rodriguez D, Rodriguez JR, Esteban M, Rodrigues MM, Zavala F. Quantification of antigen specific CD8+ T cells using an ELISPOT assay. *J Immunol Methods*. 1995;181(1):45-54.
- Munoz-Fernandez MA, Fernandez MA, Fresno M. Synergism between tumor necrosis factor-alpha and interferon-gamma on macrophage activation for the killing of intracellular *Trypanosoma cruzi* through a nitric oxide-dependent mechanism. *Eur J Immunol* 1992; 22:301-7.
- Munoz-Fernandez MA, Fernandez MA, Fresno M. Synergism between tumor necrosis factor-alpha and interferon-gamma on macrophage activation for the killing of intracellular *Trypanosoma cruzi* through a nitric oxide-dependent mechanism. *Eur J Immunol*. 1992;22(2):301-7.
- Murali-Krishna K, Altman JD, Suresh M, Sourdive D, Zajac A, Ahmed R. In vivo dynamics of anti-viral CD8 T cell responses to different epitopes. An evaluation of bystander activation in primary and secondary responses to viral infection. *Adv Exp Med Biol*. 1998;452:123-42.
- Nomizo A, Cardillo F, Postol E, de Carvalho LP, Mengel J. V gamma 1 gammadelta T cells regulate type-1/type-2 immune responses and participate in the resistance to infection and development of heart inflammation in *Trypanosoma cruzi*-infected BALB/c mice. *Microbes Infect*. 2006;8(3):880-8.
- Ogg GS, McMichael AJ. HLA-peptide tetrameric complexes. *Curr Opin Immunol*. 1998;10(4):393-6. Review
- Oliveira AC, Peixoto JR, de Arruda LB, Campos MA, Gazzinelli RT, Golenbock DT, Akira S, Previato JO, Mendonca-Previato L, Nobrega A, Bellio M. Expression of functional TLR4 confers proinflammatory responsiveness to *Trypanosoma cruzi* glycoinositolphospholipids and higher resistance to infection with *T. cruzi*. *J Immunol*. 2004;173(9):5688-96.
- Ouaissi A, Guilvard E, Delneste Y, Caron G, Magistrelli G, Herbault N, Thieblemont N, Jeannin P. The *Trypanosoma cruzi* Tc52-released protein induces human dendritic cell maturation, signals via Toll-like receptor 2, and confers protection against lethal infection. *J Immunol*. 2002;168(12):6366-74.
- Padilla A, Xu D, Martin D, Tarleton R. Limited role for CD4+ T-cell help in the initial priming of *Trypanosoma cruzi*-specific CD8+ T cells. *Infect Immun*. 2007;75(1):231-5.
- Procopio DO, Almeida IC, Torrecilhas AC, Cardoso JE, Teyton L, Travassos LR, Bendelac A, Gazzinelli RT. Glycosylphosphatidylinositol-anchored mucin-like glycoproteins from *Trypanosoma cruzi* bind to CD1d but do not elicit dominant innate or adaptive immune responses via the CD1d/NKT cell pathway. *J Immunol*. 2002;169(7):3926-33.
- Reis DD, Jones EM, Tostes S *et al*. Expression of major histocompatibility complex antigens and adhesion molecules in hearts of patients with chronic Chagas' disease. *Am J Trop Med Hyg* 1993;49:192-200.
- Reis DD, Jones EM, Tostes S Jr *et al*. Characterization of inflammatory infiltrates in chronic chagasic myocardial lesions: presence of tumor necrosis factor-alpha+ cells and dominance of granzyme A+, CD8+ lymphocytes. *Am J Trop Med Hyg* 1993;48:637-44.
- Reis MM, Higuchi ML, Benvenuti LA *et al*. An in situ quantitative immunohistochemical study of cytokines and IL-2R+ in chronic human chagasic myocarditis: correlation with the presence of myocardial *Trypanosoma cruzi* antigens. *Clin Immunol Immunopathol* 1997;83:165-72.
- Reis MM, Higuchi ML, Benvenuti LA *et al*. An in situ quantitative immunohistochemical study of cytokines and IL-2R+ in chronic human chagasic myocarditis: correlation with the presence of myocardial *Trypanosoma cruzi* antigens. *Clin Immunol Immunopathol* 1997;83:165-72.
- Rodriguez AM, Santoro F, Afchain D, Bazin H, Capron A. *Trypanosoma cruzi* infection in B-cell-deficient rats. *Infect Immun*. 1981;31(2):524-9.
- Roport C, Closel M, Chaves AC, Gazzinelli RT. Inhibition of a p38/stress-activated protein kinase-2-dependent phosphatase restores function of IL-1 receptor-associate kinase-1 and reverses Toll-like receptor 2- and 4-dependent tolerance of macrophages. *J Immunol*. 2003;171(3):1456-65.

- Roport C, Gazzinelli RT. Regulatory role of Toll-like receptor 2 during infection with *Trypanosoma cruzi*. *J Endotoxin Res.* 2004;10(6):425-30.
- Rottenberg M, Cardoni RL, Andersson R, Segura EL, Orn A. Role of T helper/inducer cells as well as natural killer cells in resistance to *Trypanosoma cruzi* infection. *Scand J Immunol.* 1988;28(5):573-82.
- Rottenberg M, Cardoni RL, Andersson R, Segura EL, Orn A. Role of T helper/inducer cells as well as natural killer cells in resistance to *Trypanosoma cruzi* infection. *Scand J Immunol.* 1988, 28:573-82.
- Rottenberg ME, Bakhiet M, Olsson T, Kristensson K, Mak T, Wigzell H, Orn A. Differential susceptibilities of mice genomically deleted of CD4 and CD8 to infections with *Trypanosoma cruzi* or *Trypanosoma brucei*. *Infect Immun.* 1993;61(12):5129-33.
- Rottenberg ME, Riarte A, Sporrang L, Altcheh J, Petray P, Ruiz AM, Wigzell H, Orn A. Outcome of infection with different strains of *Trypanosoma cruzi* in mice lacking CD4 and/or CD8. *Immunol Lett.* 1995;45(1-2):53-60.
- Russo M, Minoprio P, Coutinho A, Hontebeyrie-Joskowicz M. Depletion of L3T4+ T lymphocytes during acute *Trypanosoma cruzi* infection abolish macrophage and B lymphocyte activation but not tissue inflammatory reaction. *Mem Inst Oswaldo Cruz.* 1988;83 Suppl 1:527-38.
- Sardinha LR, Elias RM, Mosca T, Bastos KR, Marinho CR, D'Imperio Lima MR, Alvarez JM. Contribution of NK, NK T, gamma delta T, and alpha beta T cells to the gamma interferon response required for liver protection against *Trypanosoma cruzi*. *Infect Immun.* 2006;74(4):2031-42.
- Schroder K, Lichtinger M, Irvine KM, Brion K, Trieu A, Ross IL, Ravasi T, Stacey KJ, Rehli M, Hume DA, Sweet MJ. PU.1 and ICSBP control constitutive and IFN-gamma-regulated Tlr9 gene expression in mouse macrophages. *J Leukoc Biol.* 2007;81(6):1577-90.
- Shoda LK, Kegerreis KA, Suarez CE, Roditi I, Corral RS, Bertot GM, Norimine J, Brown WC. DNA from protozoan parasites *Babesia bovis*, *Trypanosoma cruzi*, and *T. brucei* is mitogenic for B lymphocytes and stimulates macrophage expression of interleukin-12, tumor necrosis factor alpha, and nitric oxide. *Infect Immun.* 2001;69(4):2162-71.
- Silva JS, Morrissey PJ, Grabstein KH, Mohler KM, Anderson D, Reed SG. Interleukin 10 and interferon gamma regulation of experimental *Trypanosoma cruzi* infection. *J Exp Med.* 1992;175(1):169-74.
- Silva JS, Twardzik DR, Reed SG. Regulation of *Trypanosoma cruzi* infections in vitro and in vivo by transforming growth factor beta (TGF-beta). *J Exp Med.* 1991;174(3):539-45.
- Silva JS, Vespa GN, Cardoso MA, Aliberti JC, Cunha FQ 1995. Tumor necrosis factor alpha mediates resistance to *Trypanosoma cruzi* infection in mice by inducing nitric oxide production in infected gamma interferon-activated macrophages. *Infect Immun* 1995; 63:4862- 4867.
- Sun JC, Bevan MJ. Defective CD8 T cell memory following acute infection without CD4 T cell help. *Science.* 2003;300(5617):339-42.
- Tarleton RL, Grusby MJ, Postan M, Glimcher LH. *Trypanosoma cruzi* infection in MHC-deficient mice: further evidence for the role of both class I- and class II-restricted T cells in immune resistance and disease. *Int Immunol.* 1996;8(1):13-22.
- Tarleton RL, Koller BH, Latour A, Postan M. Susceptibility of beta 2-microglobulin-deficient mice to *Trypanosoma cruzi* infection. *Nature.* 1992;356(6367):338-40.
- Tarleton RL. Chagas disease: a role for autoimmunity? *Trends Parasitol.* 2003;19(10):447-51.
- Tarleton RL. Depletion of CD8+ T cells increases susceptibility and reverses vaccine-induced immunity in mice infected with *Trypanosoma cruzi*. *J Immunol.* 1990;144(2):717-24.
- Tarleton RL. Immune system recognition of *Trypanosoma cruzi*. *Curr Opin Immunol.* 2007;19(4):430-4.
- Tarleton, R.L., J. Sun, L. Zhang, and M. Postan (1994) Depletion of T-cell subpopulations results in exacerbation of myocarditis and parasitism in experimental Chagas' disease. *Infect. Immun.* 62: 1820-1829.
- Tarleton, R.L., M.J. Grusby, M. Postan, and L. Glimcher (1996) *Trypanosoma cruzi* infection in MHC-deficient mice: further evidence for the role of both class I- and class II-restricted T cells in immune resistance and disease. *Int. Immunol.* 8: 13-22.
- Tzelepis F, Persechini PM, Rodrigues MM. Modulation of CD4+ T cell-dependent specific cytotoxic CD8+ T cells differentiation and proliferation by the timing of increase in the pathogen load. *PLoS ONE.* 2007;2(4):e393.
- Van Overtvelt L, Andrieu M, Verhasselt V, Connan F, Choppin J, Vercruysse V, Goldman M, Hosmalin A, Vray B. *Trypanosoma cruzi* down-regulates lipopolysaccharide-induced MHC

- class I on human dendritic cells and impairs antigen presentation to specific CD8(+) T lymphocytes. *Int Immunol*. 2002;14(10):1135-44.
- Vespa GNR, Cunha FQ, Silva JS. Nitric oxide is involved in control of *Trypanosoma cruzi*-induced parasitemia and directly kills the parasite in vitro. *Infect Immun*. 1994; 62:5177-5182.
- Vitelli-Avelar DM, Sathler-Avelar R, Dias JC, Pascoal VP, Teixeira-Carvalho A, Lage PS, Eloi-Santos SM, Correa-Oliveira R, Martins-Filho OA. Chagasic patients with indeterminate clinical form of the disease have high frequencies of circulating CD3+CD16-CD56+ natural killer T cells and CD4+CD25High regulatory T lymphocytes. *Scand J Immunol*. 2005;62(3):297-308.
- Vitelli-Avelar DM, Sathler-Avelar R, Massara RL, Borges JD, Lage PS, Lana M, Teixeira-Carvalho A, Dias JC, Eloi-Santos SM, Martins-Filho OA. Are increased frequency of macrophage-like and natural killer (NK) cells, together with high levels of NKT and CD4+CD25high T cells balancing activated CD8+ T cells, the key to control Chagas' disease morbidity? *Clin Exp Immunol*. 2006;145(1):81-92.
- Zinkernagel RM, Planz O, Ehl S, Battegay M, Odermatt B, Klenerman P, Hengartner H. General and specific immunosuppression caused by antiviral T-cell responses. *Immunol Rev*. 1999;168:305-15. Review.

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- Andersen MH, Schrama D, Thor Straten P, Becker JC. Cytotoxic T cells. *J Invest Dermatol*. 2006, 126(1):32-41. Review.
- Bisaggio Rda C, de Castro SL, Barbosa HS, Brandao Cde A, Persechini PM. *Trypanosoma cruzi*: resistance to the pore forming protein of cytotoxic lymphocytes--perforin. *Exp Parasitol*. 1997, 86(2):144.
- Bolitho P, Voskoboinik I, Trapani JA, Smyth MJ. Apoptosis induced by the lymphocyte effector molecule perforin. *Curr Opin Immunol*. 2007, 19(3):339-47. Review
- Cabral HR, Novak IT, Glocker TM, Castro Viera GA. Chagas cardiopathy: identification and quantification of infiltrating cells in the hearts of cardiac death patients of different ages *Rev Fac Cien Med Univ Nac Cordoba* 2002, 59: 83-9.
- Costa RS, Monteiro RC, Lehuen A, Joskowicz M, Noel LH, Droz D. Immune complex-mediated glomerulopathy in experimental Chagas' disease. *Clin Immunol Immunopathol*. 1991, 58(1):102-14.
- de Meis J, Mendes-da-Cruz DA, Farias-de-Oliveira DA, Correa-de-Santana E, Pinto-Mariz F, Cotta-de-Almeida V, Bonomo A, Savino W. Atrophy of mesenteric lymph nodes in experimental Chagas' disease: differential role of Fas/Fas-L and TNFRI/TNF pathways. *Microbes Infect*. 2006, 8(1):221-31.
- de Oliveira GM, Diniz RL, Batista W, Batista MM, Bani Correa C, de Araujo-Jorge TC, Henriques-Pons A. Fas ligand-dependent inflammatory regulation in acute myocarditis induced by *Trypanosoma cruzi* infection. *Am J Pathol*. 2007, 171(1):79-86.
- dos Santos PV, Roffe E, Santiago HC, Torres RA, Marino AP, Paiva CN, Silva AA, Gazzinelli RT, Lannes-Vieira J. Prevalence of CD8(+)alpha beta T cells in *Trypanosoma cruzi*-elicited myocarditis is associated with acquisition of CD62L(Low)LFA-1(High)VLA-4(High) activation phenotype and expression of IFN-gamma-inducible adhesion and chemoattractant molecules. *Microbes Infect*. 2001, 3(12):971-84.
- Factor SM, Cho S, Wittner M, Tanowitz H. Abnormalities of the coronary microcirculation in acute murine Chagas' disease. *Am J Trop Med Hyg*. 1985, 34(2):246-53.
- Garcia SB, Paula JS, Giovannetti GS, Zenha F, Ramalho EM, Zucoloto S, Silva JS, Cunha FQ. Nitric oxide is involved in the lesions of the peripheral autonomic neurons observed in the acute phase of experimental *Trypanosoma cruzi* infection. *Exp Parasitol*. 1999, 93(4):191-7.
- Goin JC, Leiros CP, Borda E, Sterin-Borda L. Interaction of human chagasic IgG with the second extracellular loop of the human heart muscarinic acetylcholine receptor: functional and pathological implications. *FASEB J*. 1997, 11(1):77-83.
- Guillermo LV, Silva EM, Ribeiro-Gomes FL, De Meis J, Pereira WF, Yagita H, DosReis GA, Lopes MF. The Fas death pathway controls coordinated expansions of type 1 CD8 and type 2 CD4 T cells in *Trypanosoma cruzi* infection. *J Leukoc Biol*. 2007, 81(4):942-51.
- Henriques-Pons A, Oliveira GM, Paiva MM, Correa AF, Batista MM, Bisaggio RC, Liu CC, Cotta-De-Almeida V, Coutinho CM, Persechini PM, Araujo-Jorge TC. Evidence for a

- perforin-mediated mechanism controlling cardiac inflammation in *Trypanosoma cruzi* infection. *Int J Exp Pathol*. 2002, 83(2):67-79.
- Higuchi Mde L, Benvenuti LA, Martins Reis M, Metzger M. Pathophysiology of the heart in Chagas' disease: current status and new developments. *Cardiovasc Res*. 2003, 15;60(1):96-107.
- Kipnis TL, James SL, Sher A, David JR. Cell-mediated cytotoxicity to *Trypanosoma cruzi*. II. Antibody-dependent killing of bloodstream forms by mouse eosinophils and neutrophils. *Am J Trop Med Hyg*. 1981, 30(1):47-53.
- Kleen TO, Asaad R, Landry SJ, Boehm BO, Tary-Lehmann M. Tc1 effector diversity shows dissociated expression of granzyme B and interferon-gamma in HIV infection. *AIDS*. 2004, 18(3):383-92.
- Kumar S, Tarleton RL. The relative contribution of antibody production and CD8+ T cell function to immune control of *Trypanosoma cruzi*. *Parasite Immunol*. 1998, 20(5):207-16.
- Laguens RP, Meckert PC, Chambã JG. Antiheart antibody-dependent cytotoxicity in the sera of mice chronically infected with *Trypanosoma cruzi*. *Infect Immun*. 1988, 56(4):993-7.
- Lannes-Vieira J. *Trypanosoma cruzi*-elicited CD8+ T cell-mediated myocarditis: chemokine receptors and adhesion molecules as potential therapeutic targets to control chronic inflammation? *Mem Inst Oswaldo Cruz*. 2003 98(3):299-304. Review.
- Leavey JK, Tarleton RL. Cutting edge: dysfunctional CD8+ T cells reside in nonlymphoid tissues during chronic *Trypanosoma cruzi* infection. *J Immunol*. 2003, 170(5):2264-8.
- Leite-de-Moraes MC, Hontebeyrie-Joskowicz M, Dardenne M, Savino W. Modulation of thymocyte subsets during acute and chronic phases of experimental *Trypanosoma cruzi* infection. *Immunology*. 1992, 77(1):95-8.
- Lieke T, Graefe SE, Klauenberg U, Fleischer B, Jacobs T. NK cells contribute to the control of *Trypanosoma cruzi* infection by killing free parasites by perforin-independent mechanisms. *Infect Immun*. 2004, 72(12):6817-25.
- Lopes MF, Guillermo LV, Silva EM. Decoding caspase signaling in host immunity to the protozoan *Trypanosoma cruzi*. *Trends Immunol*. 2007, 28(8):366-72.
- Lopes MF, Nunes MP, Henriques-Pons A, Giese N, Morse HC 3rd, Davidson WF, Araujo-Jorge TC, DosReis GA. Increased susceptibility of Fas ligand-deficient gld mice to *Trypanosoma cruzi* infection due to a Th2-biased host immune response. *Eur J Immunol*. 1999, 29(1):81-9.
- Low HP, Santos MA, Wizel B, Tarleton RL. Amastigote surface proteins of *Trypanosoma cruzi* are targets for CD8+ CTL. *J Immunol*. 1998, 160(4):1817-23.
- Marino AP, da Silva A, dos Santos P, Pinto LM, Gazzinelli RT, Teixeira MM, Lannes-Vieira J. Regulated on activation, normal T cell expressed and secreted (RANTES) antagonist (Met-RANTES) controls the early phase of *Trypanosoma cruzi*-elicited myocarditis. *Circulation*. 2004, 110(11):1443-9.
- Martin D, Tarleton R. Generation, specificity, and function of CD8+ T cells in *Trypanosoma cruzi* infection. *Immunol Rev*. 2004, 201:304-17. Review
- Martin DL, Tarleton RL. Antigen-specific T cells maintain an effector memory phenotype during persistent *Trypanosoma cruzi* infection. *J Immunol*. 2005, 174(3):1594-601.
- Martins GA, Cardoso MA, Aliberti JC, Silva JS. Nitric oxide-induced apoptotic cell death in the acute phase of *Trypanosoma cruzi* infection in mice. *Immunol Lett*. 1998, 63(2): 113-20.
- Martins GA, Petkova SB, MacHado FS, Kitsis RN, Weiss LM, Wittner M, Tanowitz HB, Silva JS. Fas-FasL interaction modulates nitric oxide production in *Trypanosoma cruzi*-infected mice. *Immunology*. 2001, 103(1):122-9.
- Martins GA, Vieira LQ, Cunha FQ, Silva JS. Gamma interferon modulates CD95 (Fas) and CD95 ligand (Fas-L) expression and nitric oxide-induced apoptosis during the acute phase of *Trypanosoma cruzi* infection: a possible role in immune response control. *Infect Immun*. 1999, 67(8):3864-71.
- Molina HA, Kierszenbaum F. Interaction of human eosinophils or neutrophils with *Trypanosoma cruzi* in vitro causes bystander cardiac cell damage. *Immunology*. 1989, 66(2):289-95.
- Muller U, Sobek V, Balkow S, Holscher C, Mullbacher A, Museteanu C, Mossmann H, Simon MM. Concerted action of perforin and granzymes is critical for the elimination of *Trypanosoma cruzi* from mouse tissues, but prevention of early host death is in addition dependent on the FasL/Fas pathway. *Eur J Immunol*. 2003, 33(1):70-8.
- Nickell SP, Sharma D. *Trypanosoma cruzi*: roles for perforin-dependent and perforin-independent immune mechanisms in acute resistance. *Exp Parasitol*. 2000, 94(4):207-16.

- Nunes MP, Andrade RM, Lopes MF, DosReis GA. Activation-induced T cell death exacerbates *Trypanosoma cruzi* replication in macrophages cocultured with CD4+ T lymphocytes from infected hosts. *J Immunol.* 1998, 160(3):1313-9.
- Padilla A, Xu D, Martin D, Tarleton R. Limited role for CD4+ T-cell help in the initial priming of *Trypanosoma cruzi*-specific CD8+ T cells. *Infect Immun.* 2007, 75(1):231-5.
- Palhares PE, Fontana Junior P, Schaffer GM, Marcondes NS, Vergara M. Tissue damage markers in experimental Chagas' disease. *Braz J Med Biol Res.* 1988, 21(5): 957-9.
- Palomino SA, Aiello VD, Higuchi ML. Systematic mapping of hearts from chronic chagasic patients: the association between the occurrence of histopathological lesions and *Trypanosoma cruzi* antigens. *Ann Trop Med Parasitol.* 2000, 94(6):571-9.
- Pinheiro MC, Beraldo PS, Junqueira Junior LF, Lopes ER, Chapadeiro E. A quantitative analysis of the mastocytes and eosinophilic granulocytes in the myocardium of Wistar rats chronically infected by *Trypanosoma cruzi*. A contribution to the knowledge of myocardial fibrosis *Rev Soc Bras Med Trop* 1992, 25: 45-50.
- Pipkin ME, Lieberman J. Delivering the kiss of death: progress on understanding how perforin works. *Curr Opin Immunol.* 2007, 19(3):301-8. Review.
- Regner, M., M. Lobigs, R. V. Blanden, A. Mullbacher. Effector cytotoxic function but not IFN- γ production in cytotoxic T cells triggered by virus-infected target cells in vitro. *Scand. J. Immunol.* 2001, 54: 366-374.
- Reis DD, Jones EM, Tostes S Jr, Lopes ER, Gazzinelli G, Colley DG, McCurley TL. Characterization of inflammatory infiltrates in chronic chagasic myocardial lesions: presence of tumor necrosis factor-alpha+ cells and dominance of granzyme A+, CD8+ lymphocytes. *Am J Trop Med Hyg.* 1993, 48(5):637-44.
- Rodrigues E, Liberti EA, Maifrino LB, de Souza RR. Cardiac denervation in mice infected with *Trypanosoma cruzi*. *Ann Trop Med Parasitol.* 2002, 96(2):125-30.
- Rossi MA, Gonçalves S, Ribeiro-dos-Santos R. Experimental *Trypanosoma cruzi* cardiomyopathy in BALB/c mice. The potential role of intravascular platelet aggregation in its genesis. *Am J Pathol.* 1984, 114(2):209-16.
- Rossi MA. Pathogenesis of chronic Chagas' myocarditis. *Sao Paulo Med J.* 1995, 113(2):750-6.
- Siegel RM. Caspases at the crossroads of immune-cell life and death. *Nat Rev Immunol.* 2006, 6(4):308-17. Review.
- Silva EM, Guillermo LV, Ribeiro-Gomes FL, De Meis J, Nunes MP, Senra JF, Soares MB, DosReis GA, Lopes MF. Caspase inhibition reduces lymphocyte apoptosis and improves host immune responses to *Trypanosoma cruzi* infection. *Eur J Immunol.* 2007, 37(3):738-46.
- Silva EM, Guillermo LV, Ribeiro-Gomes FL, De Meis J, Pereira RM, Wu Z, Calegari-Silva TC, Seabra SH, Lopes UG, Siegel RM, Dosreis GA, Lopes MF. Caspase-8 activity prevents type 2 cytokine responses and is required for protective T cell-mediated immunity against *Trypanosoma cruzi* infection. *J Immunol.* 2005, 174(10):6314-21.
- Silva JS, Machado FS, Martins GA. The role of nitric oxide in the pathogenesis of Chagas disease. *Front Biosci.* 2003, 1;8:s314-25.
- Tanowitz HB, Burns ER, Sinha AK, Kahn NN, Morris SA, Factor SM, Hatcher VB, Bilezikian JP, Baum SG, Wittner M. Enhanced platelet adherence and aggregation in Chagas' disease: a potential pathogenic mechanism for cardiomyopathy. *Am J Trop Med Hyg.* 1990, 43(3):274-81.
- Tarleton RL, Koller BH, Latour A, Postan M. Susceptibility of beta 2-microglobulin-deficient mice to *Trypanosoma cruzi* infection. *Nature.* 1992, 26;356(6367):338-40.
- Tzelepis F, de Alencar BC, Penido ML, Gazzinelli RT, Persechini PM, Rodrigues MM. Distinct kinetics of effector CD8+ cytotoxic T cells after infection with *Trypanosoma cruzi* in naive or vaccinated mice. *Infect Immun.* 2006, 74(4):2477-81.
- Tzelepis F, Persechini PM, Rodrigues MM. Modulation of CD4+ T cell-dependent specific cytotoxic CD8+ T cells differentiation and proliferation by the timing of increase in the pathogen load. *PLoS ONE.* 2007, 2:e393.
- Wizel B, Garg N, Tarleton RL. Vaccination with trypomastigote surface antigen 1-encoding plasmid DNA confers protection against lethal *Trypanosoma cruzi* infection. *Infect Immun.* 1998A, 11:5073-81.
- Wizel B, Nunes M, Tarleton RL. Identification of *Trypanosoma cruzi* trans-sialidase family members as targets of protective CD8+ TC1 responses. *J Immunol.* 1997, 159(12):6120-30.

- Wizel B, Palmieri M, Mendoza C, Arana B, Sidney J, Sette A, Tarleton R. Human infection with *Trypanosoma cruzi* induces parasite antigen-specific cytotoxic T lymphocyte responses. *J Clin Invest.* 1998B, 102(5):1062-71.
- Zuniga E, Motran CC, Montes CL, Yagita H, Gruppi A. *Trypanosoma cruzi* infection selectively renders parasite-specific IgG+ B lymphocytes susceptible to Fas/Fas ligand-mediated fratricide. *J Immunol.* 2002, 168(8):3965-73.

VACINAS

Vacinas: uma experiência atual (Maurício Rodrigues)

- Carvalho CM, Andrade MC, Xavier SS, Mangia RH, Britto CC, Jansen AM, Fernandes O, Lannes-Vieira J, Bonecini-Almeida MG. Chronic Chagas' disease in rhesus monkeys (*Macaca mulatta*): evaluation of parasitemia, serology, electrocardiography, echocardiography, and radiology. *Am J Trop Med Hyg* 2003, 68(6):683-91.
- Costa F, Franchin G, Pereira-Chiocola VL, Ribeiro M, Schenkman S, Rodrigues MM. Immunization with a plasmid DNA containing the gene of trans-sialidase reduces *Trypanosoma cruzi* infection in mice. *Vaccine.* 1998 May;16(8):768-74.
- Rocha CD, Caetano BC, Machado AV, Bruna-Romero O. Recombinant viruses as tools to induce protective cellular immunity against infectious diseases. *Int Microbiol.* 2004 Jun;7(2):83-94.
- Rodrigues MM, Ribeiro M, Pereira-Chiocola V, Renia L, Costa F. Predominance of CD4 Th1 and CD8 Tc1 cells revealed by characterization of the cellular immune response generated by immunization with a DNA vaccine containing a *Trypanosoma cruzi* gene. *Infect Immun.* 1999 Aug;67(8):3855-63
- Tzelepis F, de Alencar BC, Penido ML, Gazzinelli RT, Persechini PM, Rodrigues MM. Distinct kinetics of effector CD8+ cytotoxic T cells after infection with *Trypanosoma cruzi* in naive or vaccinated mice. *Infect Immun.* 2006 Apr;74(4):2477-81.
- Vasconcelos JR, Hiyane MI, Marinho CR, Claser C, Machado AM, Gazzinelli RT, Bruna-Romero O, Alvarez JM, Boscardin SB, Rodrigues MM. Protective immunity against *trypanosoma cruzi* infection in a highly susceptible mouse strain after vaccination with genes encoding the amastigote surface protein-2 and trans-sialidase. *Hum Gene Ther.* 2004 Sep;15(9):878-86.

Histórico: requisitos críticos para uma vacina contra a doença de Chagas (Erney Plessmann Camargo)

- Andrade SG, Carvalho ML, Figueira RM and Andrade ZA. Recuperação e caracterização de tripanossomas inoculados em animais imunes (Reinoculação com diferentes cepas do *Trypanosoma cruzi*). *Rev Inst Med Trop São Paulo* 12: 395-402, 1970.
- Araguth MF, Rodrigues MM and Yoshida N. *Trypanosoma cruzi* metacyclic trypomastigotes: neutralization by the stage-specific monoclonal antibody 1G7 and immunogenicity of 90kD surface antigen. *Parasite Immunol* 10: 707-712, 1988.
- Boscardin SB, Kinoshita SS, Fujimura AE and Rodrigues MM. Immunization with DNA expressed by amastigotes of *Trypanosoma cruzi* elicits protective immune response against experimental infection. *Infect Immun* 71: 2744-2757, 2003.
- Brasombrio MA, Bellouard A, Besuschio S, Laguens RP and Meckert PC. Efectos de la inmunización con *Trypanosoma cruzi* de cultivo sobre la infección crónica por trypomastigotes en el ratón. *Medicina* 40: 853-854, 1980.
- Brener Z and Camargo EP. Perspectives of vaccination on Chagas' disease. *Pontificiae Academiae Scientiarum Scripta Varia* 47: 145-168, 1982.
- Brener Z. Alguns aspectos de imunidade adquirida em camundongos experimentalmente inoculados com *Trypanosoma cruzi*. *Rev Inst Med Trop São Paulo* 9: 233-238, 1967.
- Brumpt E. Immunité partielle dans les infections à *Trypanosoma cruzi*, transmission de ce trypanosome par *Cimex rotundus*. Rôle régulateur des hôtes et intermédiaires. *Bull Soc Pathol Exot* 6: 172-176, 1913.

- Camargo M, Almeida I, Pereira M, Ferguson M, Travassos L and R. Gazinelli. GPI-anchored mucin-like glycoproteins isolated from *Trypanosoma cruzi* trypomastigotes initiate the synthesis of pro-inflammatory cytokines by macrophages. *J Immunol* 158: 5890-5901, 1997.
- Chaves LB, Briones MRS and Schenkman S. Trans-sialidase from *Trypanosoma-cruzi* epimastigotes is expressed at the stationary phase and is different from the enzyme expressed in trypomastigotes. *Molecular Biochemical Parasitology* 61: 97-106, 1993.
- Chiari E, Mansur-Neto E and Brener Z. Some effects of gamma radiation on *Trypanosoma cruzi*, culture and blood forms. *Rev. Inst Med trop São Paulo* 10: 131-137, 1968.
- Colli W. Trans-sialidase a unique enzyme activity discovered in the protozoan *Trypanosoma cruzi*. *FASEB J* 7: 1257-1264, 1993.
- Collier WA. Über Immunität bei der Chagas Krankheit der weissen Maus. *Z. Hyg. Infektionskr* 112: 88-92, 1931.
- Costa F., Franchini G, Chioccola VLP, Ribeirão M, Schenkman S and Rodrigues MM. Immunization with a plasmid DNA containing the gene of trans-sialidase reduces *Trypanosoma cruzi* infection in mice. *Vaccine* 16: 768-774, 1998.
- Cross GAM and Takle GB. The Surface Trans-sialidase family of *Trypanosoma-cruzi*. *Ann Rev Microbiol* 47:385-411: -411, 1993.
- Deane MP and Kloetzel J. Lack of protection against *T. cruzi* by multiple doses of *Trypanosoma lewisi* culture forms. A discussion of some strains of "lewisi". *Exp Parasitol* 24: 83-90, 1974.
- Dumonteil E, Escobedo-Ortegon J, Reyes-Rodriguez N, Arjona-Torres A and Ramirez-Sierra MJ. Immunotherapy of *Trypanosoma cruzi* infection with DNA vaccines in mice. *Infect Immun* 72:46-53, 2004.
- Ferguson M. The structure, biosynthesis and functions of glycosylphosphatidylinositol anchors, and the contributions of trypanosome research. *J Cell Sci* 112: 2799-2809, 1999.
- Ferguson, M. The surface glycoconjugates of trypanosomatid parasites. *Phil Trans R Soc Lond B* 352: 1295-1302, 1997.
- Fernandes JF, Halsman M and Castellani O. Effect of Actinomycin D on the infectivity of *Trypanosoma cruzi*. *Nature* 207: 1004-1005, 1965.
- Fralish BH and Tarleton RL. Genetic immunization with LYt1 or a pool of trans-sialidase genes protects mice from lethal *Trypanosoma cruzi* infection. *Vaccine* 21:3070-3080, 2003.
- Frank FM, Petray PB, Cazorla, SI, Muñoz MC and Malchiodi EL. Use of a purified *Trypanosoma cruzi* antigen and CpG oligodeoxynucleotides for immunoprotection against a lethal challenge with trypomastigotes. *Vaccine* 22:77-86, 2003.
- Garcia W and Mühlpfordt H. Infección de *Trypanosoma cruzi* en ratones después de su tratamiento con *Trypanosoma lewisi*. *Rev Inst Med trop São Paulo* 11: 13-18, 1969.
- Garg N and Bathia V. Current status and future prospects for a vaccine against American trypanosomiasis. *Expert Rev Vaccines* 24:5787-5899, 2006.
- Garg N and Tarleton RL. Genetic immunization elicits antigen-specific protective immune responses and decreases disease severity in *Trypanosoma cruzi* infection. *Infect Immun* 70:5547-5555, 2002.
- Goble FC, Boyde JL, Grimm-Wehner M and Konrath M. Vaccination against experimental Chagas' Disease with homogenates of culture forms of *Trypanosoma cruzi*. *J. Parasitol.* 50: 19, 1964.
- González J, Araguth MF and Yoshida N. Resistance to acute *Trypanosoma cruzi* infection resulting from immunization of mice with a 90-kilodanton antigen from metacyclic trypomastigotes. *Infect Immun* 59: 863-867, 1991.
- Gonzalez-Cappa SM, Schmunis GA, Traversa OC, Yanovski JF and Parodi AS. Complement-fixation tests, skin tests, and experimental immunization with antigens of *Trypanosoma cruzi* prepared under pressure. *Am J Trop Med Hyg* 17: 709-715, 1968.
- Hanson WL, Chapman-Jr WL and Walts VB. Immunization of mice with irradiated *Trypanosoma cruzi* grown in cell culture: relation of numbers of parasites, immunizing infections and route of immunization to infection. *Int J Parasitol* 6: 341-347, 1976.
- Hanson WL, Chien JJ and Chapman WL. Partial resistance produced in mice by inoculation with irradiated *Trypanosoma cruzi* from cell culture. *J Protozool* 20: 511, 1973.
- Hoft DF and Eickhoff CS. Type 1 immunity provides both optimal mucosal and systemic protection against a mucosally invasive intracellular pathogen. *Infect Immun* 73:4934-4940, 2005.
- Hort DF, Farrar PL, Kratz-Owens K and Shaffer D. Gastric invasion by *Trypanosoma cruzi* and induction of protective mucosal immune responses. *Infect Immun* 64:3800-3810, 1996.
- Hungerer, KD, Enders B and Zwister O. On the immunology of infection with *T. cruzi*. 2. The preparation of an apathogenic living vaccine. *Behring Inst Mitteil* 60: 84-97, 1976.

- Johnson P, Neal RA and Gall D. Protective effect of killed trypanosome vaccines with incorporated adjuvants. *Nature* 200: 83, 1963.
- Kagan IG and Norman L. Immunological studies of *Trypanosoma cruzi*. III. Duration of acquired immunity in mice initially infected with a North American strain of *Trypanosoma cruzi*. *J. Infect. Dis.* 108: 213-217, 1961.
- Kahn S, van Voorhis W and H. Eisen. The major 85-kD surface antigen of the mammalian form of *Trypanosoma cruzi* is encoded by a large heterogeneous family of simultaneously expressed genes. *J. Exp Med* 172: 859-863, 1990.
- Kahn S., Colbert T, Wallace J, Hoagland N and Eisen H. The major 85-kDa surface antigen of mammalian-stage forms of *Trypanosoma cruzi* is a family of sialidases. *Proc. Natl. Acad. Sci. USA* 88: 4481-4485, 1991.
- Kaneda Y. Protective effects of disintegrated culture forms of *Trypanosoma cruzi* on the mortality of mice after challenge. *Japanese J. Parasitol.* 22: 146-153, 1973.
- Kierszenbaum F and Budzko DB. Immunization against experimental Chagas' disease by using culture forms of *Trypanosoma cruzi* killed with sodium perchlorate. *Infection and Immunity* 12: 461-465, 1975.
- Kierszenbaum F and Ferraresi RW. Enhancement of host resistance against *Trypanosoma cruzi* infection by the immunoregulatory agent muramyl dipeptide. *Infection and Immunity* 25: 273-278, 1979.
- Kloetzel J and Deane MP. Protective cross-immunity between *Trypanosoma cruzi* and *T. lewisi*. *Rev Inst Med trop São Paulo* 13: 31-36, 1971.
- Laguens RP, Meckert PC, Esteva M, Campanini AR, Gelpi R, Subias E., Del Prado CE and Segura EL. Acción de las fracciones subcelulares de *Trypanosoma cruzi* sobre la enfermedad de Chagas crónica. II. Efecto sobre la evolución de la infección. *Medicina* 40: 807-808, 1980.
- Lauria L, Tanus R, Prata A, Macedo V, Lopes ER, Camargo ME and Teixeira MGLC. Evaluation of a vaccine against *Trypanosoma cruzi* in dogs. *Proc Intern Congress Chagas' Disease* : 220, 1979.
- Leon LL, Leon W, Chaves L, Costa SCG, Cruz MQ, Brascher HM and Lima AO. Immunization of mice with *Trypanosoma cruzi* polyribosomes. *Infection and Immunity* 27: 38-43, 1980.
- Machado AV, Cardoso JE, Claser C, Rodrigues MM Gazzinelli RT and Bruna-Romero O. 2006. Long-term protective immunity induced against *Trypanosoma cruzi* infection after vaccination with recombinant adenoviruses encoding amastigote surface protein-2 and trans-sialidase. *Hum Gene Ther* 17:898-908, 2006.
- Marr JS and Prike EH. The protection of mice by < Corpus Christi > strain when challenged with Brazil strain. *J Parasitol* 53: 657-659, 1967.
- Martin D and Tarleton RL. Generation, specificity, and function of CD8+ T cells in *Trypanosoma cruzi* infection. *Immunol. Rev.* 201:304-317, 2004.
- McHardy N and Elphick JP. Immunization of mice against infection with *Trypanosoma cruzi*. Cross-immunization between five strains of the parasite using freeze-thawed vaccines containing epimastigotes of up to five strains. *Inter. J Parasitol* 8: 25-31, 1978.
- McHardy N and Elphick SP. Persistence of parasitaemia in vaccinated mice challenged with very low numbers of *Trypanosoma cruzi*. *Trans R Soc Trop Med Hyg* 74: 670-671, 1980.
- McHardy N. Immunization of mice against *Trypanosoma cruzi*. The effect of size of dose, and route of infection of immunizing and challenge inocula. *Tropenmed Parasit* 28: 11-16, 1977.
- McHardy, N. Immunization of mice against *Trypanosoma cruzi*. The effect of chemical treatment or immune serum on epimastigote vaccine. *Tropenmed Parasit* 29: 215-222, 1978.
- Menezes H. Active immunization of dogs with a non virulent strain of *Trypanosoma cruzi*. *Rev Inst Med trop São Paulo* 11: 258-263, 1969b.
- Menezes H. Active immunization of mice with the avirulent Y strain of *Trypanosoma cruzi* against the heterologous virulent strains of the same parasite. *Rev. Inst. Med. trop. São Paulo* 11: 335-342, 1969.
- Menezes H. Aplicação de vacina viva avirulenta de *Trypanosoma cruzi* em seres humanos. *Rev. Inst. Med. trop. São Paulo* 13: 144-154, 1971.
- Menezes H. Protective effect of an avirulent cultivated strain of *Trypanosoma cruzi* against experimental infection in mice. *Rev. Inst Med trop São Paulo* 10: 1-4, 1968.
- Menezes, H. The use of adjuvants in the vaccination of mice with lyophilized *Trypanosoma cruzi*. *O Hospital* 68: 1341, 1965.
- Miyahira Y, Katae M, Kobayashi S, Takeuchi T, Fukuchi Y, Abe R, Okumura K, Yagita H and Aoki T. Critical contribution of CD28-CD80/CD86 costimulatory pathway to protection from *Trypanosoma cruzi* infection. *Infect. Immun.* 71:3131-3137, 2003.

- Muniz J and Pena Azevedo A. Novo conceito da patogenia de doença de Chagas <trypanosomiasis americana> inflamação alérgica granulomatosa (a) e miocardite hiperérgica (b), produzida em <rhesus> (macaca mullata) inoculados com formas mortas de cultivo de *Schizotrypanum cruzi*. Hospital (Rio de Janeiro) 32: 165-183, 1947.
- Muniz J, Nobrega G and Cunha M. Ensaio de vacinação preventiva e curativa nas infecções pelo *Schizotrypanum cruzi*. Mem Inst Oswaldo Cruz 44: 529, 1946.
- Neal RA and Johnson P. Immunization against *Trypanosoma cruzi* using killed antigens and with saponin as adjuvant. Acta Tropica 34: 87-96, 1977.
- Neal RA and McHardy N. Immunization against *Trypanosoma cruzi*: comparison of metacyclic trypomastigote challenge with bloodstream trypomastigote challenge from mice. Trans R Soc Trop Med Hyg 73: 101, 1979.
- Norman L and Kagan IG. Immunologic studies on *Trypanosoma cruzi*. II. Acquired immunity in mice infected with avirulent american strains of *T. cruzi*. J Infect Dis 107: 168-174, 1960.
- Norris K, Harth G and So M. Purification of a *Trypanosoma cruzi* membrane glycoprotein which elicits lytic antibodies. Infect Immun 57: 2372-2377, 1989.
- Nussenzweig V, Kloetzel J and Deane LM. Acquired immunity in mice infected with strains of immunological types A and B of *Trypanosoma cruzi*. Exp Parasitol 14: 233-239, 1963.
- Ouaisi M., Taibi A, Cornette J, Velge P, Marty B, Loyens M, Esteva M, Rizvio F and Capron A. Characterization of major surface and excretory-secretory immunogens of *Trypanosoma cruzi* trypomastigotes and identification of potential protective antigen. Parasitology 100: 115-124, 1990.
- Pereira VR, Lorena VM, Da Silva AP, Coutinho EM, Silvas ED, Ferreira AG, Miranda P, Krieger MA, Goldenberg S, Soares MB, Correa-Oliveira R and Gomes YM. Immunization with cytoplasmic repetitive antigen and flagellar repetitive antigen of *Trypanosoma cruzi* stimulates a cellular immune response in mice. Parasitology, 129:563-570, 2004.
- Pollewick G, Affranchino J, Frasch A and D. Sanchez. The complete sequence of a shed acute-phase antigen of *Trypanosoma cruzi*. Mol Biochem Parasitol 47: 247-251, 1991.
- Quanquin NM, Galaviz C, Fouts DL, Wrightsman RA and Manning JE. Immunization of mice with a ToLA-like surface protein of *Trypanosoma cruzi* generates CD4+ T-cell-dependent parasitocidal activity. Infect. Immun 67:4603-4612, 1999.
- Ramirez M, Santori F, Yoshida N, Franco da Silveira J and Yndash J.. DNA vaccination with a gene that encodes the glycoprotein of 82 kDa (gp82) of metacyclic trypomastigotes of *Trypanosoma cruzi*. Mem Inst Oswaldo Cruz 94: 182, 1999.
- Ruef B, Dawson B, Tewari D, Fouts D and Manning J. Expression and evolution of members of the trypomastigote surface antigen multigene family. Mol. Biochem. Parasitol. 63: 109-112, 1994.
- Ruiz AM, Esteva M, Riarte A, Subias E, and Segura EL. Immunoprotection of mice against *Trypanosoma cruzi* with a lyophilized flagellar fraction of the parasite plus adjuvant. Immunology Letters 12: 1-4, 1986.
- Santori FR, Paranhos-Bacalla GS, Franco da Silveira J., Yamauchi L. M., Araya JE and Yoshida N. A recombinant protein based on the *Trypanosoma cruzi* trypomastigote 82-kilodalton antigen that induces an effective immune response to acute infection. Infect. Immun. 64: 1093-1099, 1996.
- Schenkman S, Eichinger D, Pereira M and Nussenzweig V. Structural and functional properties of *Trypanosoma trans-sialidase*. Ann. Rev Microbiol 48: 499-523, 1994.
- Schenkman S., Jiang MS, Hart GW and Nussenzweig V. A novel cell surface trans-sialidase of *Trypanosoma cruzi* generates a stage-specific epitope required for invasion of mammalian cells. Cell 65: 1117-1125, 1991.
- Schnapp AR, Eickhoff CS, Sizemore D, Curtiss R and Hoft DF. Cruzipain induces both mucosal and systemic protection against *Trypanosoma cruzi* in mice. Infect Immun 70:3065-3074, 2002.
- Scott MT and Snary D. Protective immunization of mice using cell surface glycoproteins from *Trypanosoma cruzi*. Nature 282: 73-74, 1979.
- Seah SKK and Marsden PD. The protection of mice against a virulent strain of *Trypanosoma cruzi* by previous inoculation with an avirulent strain. Ann. Trop. Med. Parasitol. 63: 211-214, 1969.
- Segura EL, Meckert PC, Esteva M, Gelpi R, Campanini AR, Subias E and Laguens RP. Acción de las fracciones subcelulares de *Trypanosoma cruzi* sobre la enfermedad de Chagas crónica en el ratón: I. Inducción de cardiopatía en ausencia de infección. Medicina 40: 807-808, 1980.
- Segura EL, Vasquez C, Bronzina A, Campos JM, Cerisola JA and Gonzalez-Cappa SM. Antigens of subcellular fractions of *Trypanosoma cruzi*. II. Flagellar and membrane fraction. J. Protozool. 24: 540-544, 1977.

- Seneca H, Peer P and B. Hampar. Active immunization of mice with chagastoxin. *Nature* 209: 309-310, 1966.
- Sepulveda P, Hontebeyrie M, Liegeard P, Mascilli A and Norris KA. DNA-based immunization with *Trypanosoma cruzi* complement regulatory protein elicits complement lytic antibodies and confers protection against *Trypanosoma cruzi* infection. *Infect Immun* 68:4986-4991, 2000.
- Souza MCM, and Roitman I. Protective effect of *Leptomonas pessoai* against the infection of mice by *Trypanosoma cruzi*. *Rev Microbiol* 2: 187-189, 1971.
- Souza MCM, Reis AP, Da Silva WD and Brener Z. Mechanism of acquired immunity induced by *Leptomonas pessoai* against *Trypanosoma cruzi* in mice. *J Protozool* 21:579-584, 1974.
- Souza, MCM. Estudo dos mecanismos imunológicos em camundongos inoculados com *Leptomonas pessoai* e da suscetibilidade desses animais à infecção por *Trypanosoma cruzi*. *Rev Pat Trop* 3: 291-332, 1974.
- Tarleton RL. New approaches in vaccine development for parasitic infections. *Cellular Microbiol.* 7: 1379-1386, 2005.
- Tarleton, RL. Immunity to *Trypanosoma cruzi*. In: *Host Response to Intracellular pathogens*, edited by S. Kaufman. Austin: R.G.Landes Co., 1996, p. 227-247.
- Tarleton, RL. The role of T cells in *Trypanosoma cruzi* infections. *Parasitol. Today* 11: 7-12, 1995.
- Teixeira MMG and N. Yoshida. Stage-specific surface antigens of metacyclic trypomastigotes of *Trypanosoma cruzi* identified by monoclonal antibodies. *Mol Biochem Parasitol* 18: 271-282, 1986.
- Teixeira S, Russell D, Kirchoff I and Donelson J. A differentially expressed gene encoding "amastin", a surface protein of *Trypanosoma cruzi* amastigotes family. *J Biol Chem* 269: 20509-20513, 1994.
- Tomlinson MJ, Chapman WL and Goven AJ. The effect of irradiated *Trypanosoma cruzi* on the pathogenesis of Chagas' Disease in dogs. *Rev. Inst. Med. trop. São Paulo* 22: 219-230, 1980.
- Wizel B, Garg N and Tarleton RL. Vaccination with trypomastigote surface antigen 1-encoding plasmid DNA confers protection against lethal *Trypanosoma cruzi* infection. *Infection and Immunity* 66: 5073-5081, 1998.
- Wizel B, Nunes M and Tarleton RL. Identification of *Trypanosoma cruzi* Trans-Sialidase Family Members as Targets of Protective CD8+ TC1 Responses. *J Immunol* 159: 6120-6130, 1997.
- Wrightsmann R, Dawson B, Fouts D and Manning J. identification of immunodominant epitopes in *Trypanosoma cruzi* trypomastigote surface antigen-1 protein that mask protective epitopes. *J Immunol* 153, 1994.
- Yoshida N, Teixeira MMG, Christo, CL. and Sbravate C. Resistance of mice immunized with killed culture trypomastigotes against infection by insect-derived trypomastigotes of *Trypanosoma cruzi*. *Rev Inst Med trop Sao Paulo* 26: 329-333, 1984.
- Yoshida N. *Trypanosoma cruzi*: recognition of trypomastigote surface antigens by lytic antisera from mice resistant to acute infection. *Exp Parasitol* 61: 184-191, 1986.

MODELOS EXPERIMENTAIS

Patologia experimental da doença de Chagas: modelos em camundongos (Sonia Gumes Andrade)

- Andrade SG 1974. Caracterização de cepas do *Trypanosoma cruzi* isoladas no Recôncavo Bahiano. *Rev Patol Trop* 3: 65-121.
- Andrade SG 1990. Influence of *Trypanosoma cruzi* strain on the pathogenesis of chronic myocardiopathy in mice. *Mem Inst Oswaldo Cruz* 85: 17-27.
- Andrade SG 1999. *Trypanosoma cruzi*: Clonal structure of parasite strains and the importance of principal clones. *Mem Inst Oswaldo Cruz* 94 (Suppl.1): 185-187.
- Andrade SG, Magalhães JB 1997. Biodemes and zymodemes of *Trypanosoma cruzi* strains: correlations with clinical data and experimental pathology. *Rev Soc Bras Med Trop* 30: 27-35.
- Andrade V, Barral Neto M, Andrade SG 1985. Patterns of resistance of inbred mice to *Trypanosoma Cruzi* are determined by parasite strain. *Braz J Med Res* 18: 499-506.

- Camandaroba ELP, Campos RF, Magalhães JB, Andrade SG 2001. Clonal structure of *Trypanosoma cruzi* Colombian strain (biodeme Type III): biological, isoenzymic and histopathological analysis of seven isolated clones. *Rev Soc Bras Med Trop* 34: 151 - 157
- Campos RF, Andrade SG 1996 Characterization of subpopulations (clones and subclones of the 21SF strain of *Trypanosoma cruzi* after long lasting maintenance in the laboratory. *Mem Inst Oswaldo Cruz* 91: 795-800.
- Cardillo F, Voltarelli JC, Reed SG, Silva JS 1996. Regulation of *Trypanosoma cruzi* infection in mice by gamma interferon and interlenkin 10: role of NK cells. *Infect Immun* 64: 128-134.
- Chagas C 1909. Nova espécie mórbida do homem produzida por um trypanozoma (*Trypanozoma cruzi*) (Nota previa) Brazil-Medico 23 (16) In: *Carlos Chagas. Coletânea de Trabalhos Científicos*. Brasília. Editora Universidade de Brasília, 1981.
- Chagas C 1909. Nova tripanosomiase humana. *Mem. Inst. Oswaldo Cruz* 1: 159-218.
- Federici EE, Abelman WE, Neva FA 1964. Chronic and progressive myocarditis and myositis in C3H mice infected with *Trypanosoma cruzi*. *Am J Trop Med Hyg* 13: 272-280.
- Kumar R, Kline IK, Abelman WH 1969. Experimental *Trypanosoma cruzi* myocarditis. Relative effects upon the right and left ventricles. *Am J Pathol* 57: 31-48.
- Lima ES, Andrade ZA, Andrade SG 2001. TNF α is expressed at sites of parasite and tissue destruction in the spleen of mice acutely infected with *Trypanosoma cruzi*. *Int J Exp Pathol* 82: 327-336
- Miles MA, Lanham SM, Souza AA, Pova M 1980. Further enzymic characters of *Trypanosoma Cruzi* and their evaluation for strain identification. *Trans Roy Soc Trop Med Hyg* 74: 221-237
- Morel C, Chiari E, Plessmann Camargo E, Mattei Dm, Romanha AJ, Simpson L 1980. Strains and clones of *Trypanosoma cruzi* can be characterized by pattern of restriction endonuclease products of Kinetoplast DNA minicircles. *Proc Natl Acad Sei USA* 77: 6810-6814.
- Satellite Meeting 1999. International Symposium to commemorate the 90th anniversary of discovery of Chagas disease. *Mem Inst Oswaldo Cruz* 94 (Suppl 1): 429-432.
- Souto RP, Fernandes O, Macedo AM, Campbel DA, Zingales B 1996. DNA markers define two major phylogenetic lineages of *Trypanosoma cruzi*. *Mol Biochem Parasitol* 83: 141-152.

Modelos em cães (Sonia Gumes Andrade)

- Andrade ZA 1974. Patologia do sistema excito-condutor do coração na miocardiopatia chagásica. *Rev. Patol Trop* 3: 367- 428.
- Andrade ZA 1984. The canine model of Chagas'disease. *Mem Inst Oswaldo Cruz* 79 (Suppl): 77- 83.
- Andrade ZA, Andrade SG 1980. A patologia da doença de Chagas experimental no cão. *Mem Inst Oswaldo Cruz* 75: 77- 95.
- Andrade ZA, Andrade SG, Sadigursky M 1984. Damage and healing in the conduction tissue of the heart (An experimental study in dogs infected with *Trypanosoma cruzi* *J Pathol* 143: 93-101.
- Andrade ZA, Andrade SG, Sadigursky M 1987. Enhancement of chronic *Trypanosoma cruzi* myocarditis in dogs treated with low doses of Cyclophosphamide. *Am J Pathol* 127: 467-473.
- Andrade ZA, Andrade SG, Sadigursky M, Lima JAC 1980. Doença de Chagas experimental no cão. Relação morfológica e eletrocardiográfica na fase aguda da infecção. *Arq Bras Cardiol* 35: 485- 490.
- Andrade ZA, Andrade SG, Sadigursky M, Wenthold JR, Hilbert SL, Ferrans VJ 1997. The indeterminate phase of Chagas'disease: ultrastructural characterization of cardiac changes in the canine model. *Am J Trop Med Hyg* 57: 328-336.
- Andrade ZA, ANDRADE SG, Sadigursky M, Wenthold JR, Hilbert SL, Ferrans VJ 1997. The indeterminate phase of Chagas'disease: ultrastructural characterization of cardiac changes in the canine model. *Am J Trop Med Hyg* 57: 328-336.
- Anselmi A, Pífano F, Suarez JÁ, Guerdiel O 1966. Myocardiopathy in Chagas'disease. I Comparative study of pathologic findings in chronic human and experimental Chagas'myocarditis. *Am Heart J* 72: 469- 481.
- Lana M, Chiari E, Tafuri WL 1992. Experimental Chagas'disease in dogs. *Mem Inst Oswaldo Cruz* 87: 59-71.

- Laranja FS & Andrade ZA 1980. Forma crônica cardíaca da doença de Chagas no cão. *Arq Bras Cardiol* 35: 377- 380.
- Laranja FS, Pelegrino J, Dias E 1949. Experimental Chagas'disease. *Am Heart J* 4: 646.
- Pifano FC, Anselmi A, Aleman C, Suarez JA, Vasquez AD 1962. Miocardiopatia chagásica experimental. Valoración del método de investigación experimental para el estudio de las propiedades fundamentales de corazón de perro con infección chagásica aguda y crônica. *Arq Venezol Med Trop Parasitol Med* 4: 37- 62.

Modelos em primatas não humanos (Cristiano Marcelo Espinola Carvalho, Maria da Glória Bonecini-Almeida, Joseli Lannes-Vieira)

- Almeida EA, Navarro MR, Guariento ME, Carvalhal SS 1992. Infecção experimental de macacos *Cebus apella* sp pelo *Trypanosoma cruzi*. Avaliação clínica, eletrocardiográfica e anatomopatológica. *Rev Soc Bras Med Trop* 25: 7-12.
- Alvarenga, A.M. Cardiospasma (mal de engasgo). Belo Horizonte. Imprensa Oficial do Estado de Minas Gerais, 1934.
- Amaral VF, Ransatto VAO, Conceição-Silva F, Molinaro E, Ferreira F, Coutinho SG, McMahon-Pratt D, Grimaldi G 1996. Leishmania amazonensis: The Asian rhesus Macaques (*Macaca mulatta*) as an experimental model for study of cutaneous leishmaniasis. *Exp Parasitol* 82: 34-44.
- Amorim, M. & Correa Netto, A. Histopathologia e Pathogenese do megaesophago e megarecto. Considerações em torno de um caso de "mal de engasgo". *Anais da Faculdade de Medicina da Universidade de São Paulo* 7: 101-134, 1932.
- Andrade ZA 1983. Aspectos patológicos da doença de Chagas. *Interciência* 8: 367-73.
- Andringa G, van Oosten RV, Unger W, Hafmans TG, Veening J, Stoof JC, Cools AR 2000. Systemic administration of the propargylamine CGP 3466B prevents behavioural and morphological deficits in rats with 6-hydroxydopamine-induced lesions in the substantia nigra. *Eur J Neurosci* 12: 3033-43.
- Arganaraz ER, Hubbard GB, Ramos LA, Ford AL, Nitz N, Leland MM, Vandeberg JL, Teixeira AR. Blood-sucking lice may disseminate *Trypanosoma cruzi* infection in baboons. *Rev Inst Med Trop Sao Paulo*. 2001 Sep-Oct;43(5):271-6.
- Bonecini-Almeida MG 1991. Doença de Chagas em macacos rhesus (*Macaca mulatta*): avaliação de um modelo experimental. MSc Tese, Instituto Oswaldo Cruz, Fiocruz, Rio de Janeiro, 155 pp.
- Bonecini-Almeida MG 2000. Modelos animais para o estudo in vivo da doença de Chagas. In: Araujo-Jorge TC, Castro SL. Doença de Chagas: manual para experimentação animal. Editora Fiocruz / Instituto Oswaldo Cruz, Rio de Janeiro, 366 pp.
- Bonecini-Almeida MG, Galvão-Castro B, Pessoa MHR, Pirmez C, Laranja FS 1990. Experimental Chagas' disease in rhesus monkeys. I Clinical, parasitological, hematological and anatomic-pathological studies in the acute and indeterminate phase of the disease. *Mem Inst Oswaldo Cruz* 85: 163-71.
- Bonecini-Almeida MG, Lannes-Vieira J, Torres RA, Mangia RHR, Fernandes O, Jansen AM, Andrade MCR, Silva VF, Morgado M 1998. Immune response of *Trypanosoma cruzi*-infected rhesus monkeys. *Mem Inst Oswaldo Cruz* 93(Suppl. 2): 250-1.
- Carter DL, Shieh TM, Blosser RL, Chadwick KR, Margolick JB, Hildreth JEK, Clements JE, Zink MC 1999. CD56 identifies monocytes and not natural killer cells in rhesus macaques. *Cytometry* 37: 41-50.
- Carvalho CM, Andrade MC, Xavier SS, Mangia RH, Britto CC, Jansen AM, Fernandes O, Lannes-Vieira J, Bonecini-Almeida MG 2003. Chronic Chagas' disease in rhesus monkeys (*Macaca mulatta*): evaluation of parasitemia, serology, electrocardiography, echocardiography, and radiology. *Am J Trop Med Hyg* 68(6):683-91.
- Carvalho CM. infecção crônica experimental de macacos rhesus (*Macaca mulatta*) pelo *Trypanosoma cruzi*: caracterização do modelo e imunopatogênese da cardiomiopatia. Teses de doutorado. Curso de Pós-graduação em Biologia Parasitária. Instituto Oswaldo Cruz, Fiocruz, Rio de Janeiro, 2006.
- Carvalho CME 2001. Caracterização clínica, parasitológica e sorológica da infecção experimental de longa duração pelo *Trypanosoma cruzi* em macacos rhesus (*Macaca mulatta*). Rio de Janeiro; Mestrado [Dissertação em Biologia Celular e Molecular] – Instituto Oswaldo Cruz.

- Chagas C 1909. Nova tripanosomiase humana. Estudos sobre a morfologia e o ciclo evolutivo do *Schizotrypanum cruzi* n.g., n.sp., agente etiológico de nova entidade morbida do homem. Mem Inst Oswaldo Cruz 1: 159-218.
- Chagas C 1916. Tripanosomiase americana. Forma aguda. Mem Inst Oswaldo Cruz 8: 37-60.
- Chagas, C. Tripanosomiase americana. Forma aguda da molestia. *Memórias do Instituto Oswaldo Cruz*, 8(2): 37-70, 1916.
- Cicmanec JL, Neva FA, McClure HM, Loeb WF 1974. Accidental infection of laboratory-reared *Macaca mulatta* with *Trypanosoma cruzi*. Lab Anim Sci 24: 783-7.
- Correa Netto, A. & Etzel, E. Le mega-oesophage et le megacôlon devant la theorie de l'achalasie. Étude clinique et anatomo-pathologique. *Revue Sud-Americaine de Médecine et Chirurgie*, 5(7): 395-420, 1934.
- Cosini AB, Burton RC, Kung PC, Colvin R, Goldstein G, Lifter J, Rhodes W, Russel PS 1981. Evaluation in primate renal allograft recipients of monoclonal antibody to human T-cell subclasses. Transplantation Proc 13: 499-503.
- Davis DJ 1943. Infection in monkeys with strains of *Trypanosoma cruzi* isolated in the United States. Public Health Rep 58: 1006-10.
- Dias E 1912. Moléstia de Carlos Chagas. Estudos hematológicos. Mem Inst Oswaldo Cruz 4: 34-61.
- Dorland JD 1943. Infection in monkeys with strains of *Trypanosoma cruzi* isolated in the United States. US Publ Hlth Rep 58: 1006-10.
- Dunn CS, Beyer C, Aubertin AM 1996. High viral load and CD4 lymphopenia in rhesus and cynomolgus macaques infected by a chimeric primate lentivirus constructed using the env, rev, tat, and vpu genes from HIV-1 Lai. Virology 223: 351-61.
- Dykhuitzen M, Ceman J, Mitchen J, Zayas M, MacDougall A, Helgeland J, Rakasz E, Pauza CD 2000. Cytometry 40: 69-70.
- Etzel, E. - A avitaminose como agente etiológico do megaesôfago e do megacolon. *Anais da Faculdade de Medicina da Universidade de São Paulo*, 11(1): 59-85, 1935.
- Etzel, E. Neuropatologia do megaesôfago e megacolo. Estudo de 5 casos *Anais da Faculdade de Medicina da Universidade de São Paulo*, 10(3): 383-395, 1934.
- Falasca A, Grana D, Buccolo J, Gili M, Merlo A, Zoppi J, Mareso E 1986. Susceptibility of *Cebus apella* monkey to different strains of *Trypanosoma cruzi* after single or repeated inoculations. PAHO Bulletin 20: 117-237.
- Fernandes et al., 1999;
- Fernandes O, Mangia RH, Lisboa CV, Pinho AP, Morel CM, Zingales B, Campbell DA, Jansen AM 1999. The complexity of the sylvatic cycle of *Trypanosoma cruzi* in Rio de Janeiro state (Brazil) revealed by the non-transcribed spacer of the mini-exon gene. Parasitology 118: 161-6.
- Fernandes O, Souto RP, Castro JA, Pereira JB, Fernandes NC, Junqueira AC, Naiff RD, Barrett TV, Degraive W, Zingales B, Campbell DA, Coura JR 1998. Brazilian isolates of *Trypanosoma cruzi* from humans and triatomines classified into two lineages using mini-exon and ribosomal RNA sequences. Am J Trop Med Hyg 58(6):807-11.
- Finkelman FD, Scher I 1979. Rhesus monkeys B lymphocyte surface immunoglobulin: analysis with a fluorescence-activated cell sorter. J Immunol 122: 1757-62.
- Freitas, J.L.P. *Contribuição para o estudo do diagnóstico da moléstia de Chagas por processos de laboratório*, 1947. Tese de Doutorado, São Paulo: Faculdade de Medicina da Universidade de São Paulo.
- Fulton JD, Harrison CV 1946. Na outbreak of *Trypanoma cruzi* infection in indian monkeys. Trans R Soc Trop Med Hyg 29: 513-20.
- Gleiser CA, Yaeger RG, Ghidoni JJ 1986. *Trypanosoma cruzi* infection in a colony-born baboon. J Am Vet Med Assoc 189: 1225-6.
- Goday, R. A. de: Estudo da esofagopatia chagásica crônica por meio do método eletromanométrico e da prova da metacolina em pacientes com e sem dilatação do esôfago. *Revista Goiana de Medicina* 18(1/2): 1-73, 1972.
- Gomes JA, Bahia-Oliveira LM, Rocha MO, Martins-Filho OA, Gazzinelli G, Correa-Oliveira R 2003. Evidence that development of severe cardiomyopathy in human Chagas' disease is due to a Th1-specific immune response. Infect Immun 71(3):1185-93.
- Higuchi Mde L, Benvenuti LA, Martins Reis M, Metzger M 2003. Pathophysiology of the heart in Chagas' disease: current status and new developments. Cardiovasc Res 60(1):96-107.
- Higuchi ML, Brito T, Reis MM, Barbosa AJA, Belloti G, Pereira-Barreto AC, Pileggi F 1993. Correlation between T. cruzi parasitism and myocardial inflammation in human chronic

- chagasic myocarditis. Light microscopy and immunohistochemical findings. *Cardiovasc Pathol* 2: 101-6.
- Hill WCO 1960. *Primates. Comparative anatomy and taxonomy*, v.4, Edinburgh University Press, Edinburgh.
- Hoare CA 1972. *The trypanosomes of mammals*. Oxford: Blackwell.
- Jones EM, Colley DG, Tostes S, Lopes ER, Vnencak-Jones CL, McCurley TL 1993. Amplification of a *Trypanosoma cruzi* DNA sequence from inflammatory lesions in human chagasic cardiomyopathy. *Am J Trop Med Hyg* 48: 348-57.
- Kidder, D.P. & Fletcher, J.C. *Brazil and the Brazilians*, Philadelphia: Childs & Peterson, 1857, p. 416-418.
- Kierszenbaum F 2005. Where do we stand on the autoimmunity hypothesis of Chagas disease? *Trends in Parasitol* 21(11):513-6.
- Köberle F 1958. Cardiopatía chagásica. *O Hospital* 53: 311-46.
- Köberle E, F. Chagas' disease and Chagas syndromes: The pathology of American Trypanosomiasis. *Advanced Parasitology*, 6: 63-113, 1968.
- Köberle, F. - Patología y Anatomía patológica de la enfermedad de Chagas. *Boletín de la Oficina Sanitaria Panamericana*. 51: 404-428, 1961.
- Köberle, F. & Nador, E. Etiología e patogenia do megaesôfago no Brasil. Nota prévia. *Revista Paulista de Medicina*, 47(6): 643-661, 1955.
- Köberle, F. Chagaskrankheit: Eine Erkrankung der neurovegetativen Peripherie. *Wien Klinisch Wochenschrift* 68: 333-339, 1956.
- Köberle, F. Patogenia do megaesôfago brasileiro e europeu. *Revista Goiana de Medicina* 9: 79-116, 1963.
- Köberle, F.: Moléstia de Chagas - Enfermidade do sistema nervoso. *Anais do Congresso Internacional de Doença de Chagas* (1959). II; 691-716, 1961.
- Krettli AU, Brener Z 1982. Resistance against *Trypanosoma cruzi* associated to anti-living trypomastigote antibodies. *J Immunol* 128: 2009-12.
- Krettli e Brener, 1982;
- Laranja FS 1949. Evolução dos conhecimentos sobre a cardiopatía da doença de Chagas. Revisão crítica da literatura. *Mem Inst Oswaldo Cruz* 47: 605-69.
- Laranja FS 1984. Draft Recommendations for standardisation of the electrocardiographic diagnosis of chronic Chagas heart disease. Report of a Consultantship to the UNDP/WORLD BANK/WHO Special Programme for Research and Training in Tropical Diseases. Geneva.
- Laranja FS, Dias E, Duarte E, Pellegrino J 1951. [Clinical and epidemiological observations on Chagas' disease in western Minas Gerais.] *Hospital (Rio J)* 40(6):945-88.
- Laranja FS, Dias E, Nobrega GC, Miranda A 1956. Chagas' disease. A clinical, epidemiologic, and pathologic study. *Circulation* 14: 1035-60.
- Laranja, F.S., Dias, E. & Nobrega, G. - Clínica e terapêutica da doença de Chagas. *Memórias do Instituto Oswaldo Cruz* 46(2): 473-529, 1948.
- Levtin NL, King NW, Reinherz EL, Hunt RD, Lane H, Schlossman SF 1983. T lymphocyte surface antigens in primates. *Eur J Immunol* 13: 345-7.
- Li K, Nagalla SR, Spindel ER 1994. A rhesus monkey model to characterize the role of gastrin-releasing peptide (GRP) in lung development. Evidence for stimulation of airway growth. *J Clin Invest* 94: 1605-15.
- Lima JA, Szarfman A, Lima SD, Adams RJ, Russell RJ, Cheever A, Trischmann T, Weiss JL 1986. Absence of left ventricular dysfunction during acute chagasic myocarditis in the rhesus monkey. *Circulation* 73(1):172-9.
- Lisboa CV, Mangia RH, De Lima NR, Martins A, Dietz J, Baker AJ, Ramon-Miranda CR, Ferreira LF, Fernandes O, Jansen AM. Distinct patterns of *Trypanosoma cruzi* infection in *Leontopithecus rosalia* in distinct Atlantic coastal rainforest fragments in Rio de Janeiro--Brazil. *Parasitology*. 2004 Dec;129(Pt 6):703-11.
- Lisboa CV, Mangia RH, Rubiao E, de Lima NR, das Chagas Xavier SC, Picinatti A, Ferreira LF, Fernandes O, Jansen AM. *Trypanosoma cruzi* transmission in a captive primate unit, Rio de Janeiro, Brazil. *Acta Trop*. 2004 Mar;90(1):97-106.
- Lisboa CV, Pinho AP, Monteiro RV, Jansen AM. *Trypanosoma cruzi* (kinetoplastida Trypanosomatidae): Biological heterogeneity in the isolates derived from wild hosts. *Exp Parasitol*. 2006 Dec 30.
- Marsden PD, Voller A, Seah SKK, Hawkey C, Green D 1970. Behavior of a Peru strain of *Trypanosoma cruzi* in rhesus monkeys. *Rev Soc Bras Med Trop* 4: 178-82.

- Martin LN, Leslie GA 1977. Lymphocyte surface IgD and IgM in Macaca monkeys: ontogeny, tissue distribution and occurrence on individual lymphocytes. *Immunology* 33: 865-72.
- McMurray DN 2000. A nonhuman primate model for preclinical testing of new tuberculosis vaccines. *Clin Infect Dis* 30 (Suppl 3): 210-2.
- Meirelles MNL, Bonecini-Almeida MG, Pessoa MHR, Galvão-Castro B 1990. *Trypanosoma cruzi*: Experimental Chagas' disease in rhesus monkeys. II Ultrastructural and Cytochemical studies of peroxidase and acid phosphatase activities. *Mem Inst Oswaldo Cruz* 85: 173-81.
- Meneghelli, U.G. et al. Um nome que faltava na história do megaesôfago chagásico: Joseph Cooper Reinhardt (1809/10-1873). *Arquivos de Gastroenterologia*, 35(1): 1-8, 1998.
- Menezes H 1981. Vaccination of Callitrix jacchus (Linne, 1758) marmosets with the PF strain of *Trypanosoma cruzi*. *Mem Inst Oswaldo Cruz* 76: 131-7.
- Miles et al., 1979;
- Monteiro RV, Baldez J, Dietz J, Baker A, Lisboa CV, Jansen AM. Clinical, biochemical, and electrocardiographic aspects of *Trypanosoma cruzi* infection in free-ranging golden lion tamarins (*Leontopithecus rosalia*). *J Med Primatol*. 2006 Feb;35(1):48-55.
- Muniz J, Nobrega G, Cunha M 1946. Ensaios de vacinação preventiva e curativa nas infecções pelo *Schizotrypanum cruzi*. *Mem Inst Oswaldo Cruz* 44: 529-41.
- Muniz J, Soares RRL, Alves-Souza M, Quintao LG 1970. South american trypanosomiasis (Chagas disease) within the concepts of immunopathology. *Rev Bras Malariol Trop* 22: 221-454.
- Neiva, A., Penna, B. Viagem científica pelo norte da Bahia, Sudoeste de Pernambuco, sul do Piauí e de norte a sul de Goiás. *Memórias do Instituto Oswaldo Cruz*, 8(3): 74-224, 1916.
- Neubauer RH, Marxhalonis JJ, Strand BC, Rabin H 1982. Surface markers of B and T lymphoid celllines identified by antibodies to human and simian lymphocyte antigen. *J Immunogenetics* 9: 209-11.
- Olson LC, Skinner SF, Palotay JL, McGhee GE 1986. Encephalitis associated with *Trypanosoma cruzi* in a Celebes black macaque. *Lab Anim Sci* 36: 667-70.
- OPAS 1982. Enfermedad de Chagas. *Bol Epidemiol* 3: 1-6.
- Ostrow RS, McGlennen RC, Shaver MK, Faras AJ 1990. A rhesus monkey model for sexual transmission of a papillomavirus isolated from a squamous cell carcinoma. *Proc Natl Acad Sci USA* 87: 8170-4.
- Packchianian A, 1939. Natural infection of *Triatoma gerstakeri* with *Trypanosoma cruzi* in Texas. *Pub Health Rep* 54: 1547-54.
- Paranhos, U. Considérations sur le "mal de engasgo". *Bulletin de la Société de Pathologie Exotique*, 7: 47-60, 1913.
- Parisi, R. *Contribuição ao estudo do mal de engasgo e seu tratamento cirúrgico*,
- Pinotti, H.W. - Contribuição para o estudo da fisiopatologia do megaesôfago. *Revista Goiana de Medicina*. 14(3/4): 137-168, 1968.
- Porto, C & Porto, C. - História do megaesôfago nos Congressos Médicos do Brasil Central. *Rev. Goiana Med.* 16: 117-136, 1970.
- Porto, C. Gastropatia chagásica crônica. Nota prévia. *Revista Goiana de Medicina* 1(1): 43-54, 1955.
- R Rezende Filho, J. *Eletrogastrografia na Forma Digestiva da Doença de Chagas*, 2002. Tese de Doutorado. Belo Horizonte: Faculdade de Medicina da Universidade Federal de Minas Gerais.
- R Rezende J.M. & Luquetti, A.O. Chagasic megavisceras. Scientific Publications nº 547. PAHO-WHO, Washington 1994, p.149-171.
- Rassi MRN, Kloetzel J, Nogaroto SL, Carvalhal SS, Almeida EA, Chaia G 1983. Infecção experimental de macacos *Cebus apella* sp pelo *Trypanosoma cruzi*, II-Reisolamento de cepas e estudo de suas características em camundongos albinos. *Rev Inst Med Trop São Paulo* 25: 275-82.
- Reimann KA, Li JT, Voss G, Letvin NL 1996. An env gene derived from a primary human immunodeficiency virus tupe 1 isolates confers high in vivo replicative capacity to a chimeric simian/human immunodeficiency virus in rhesus monkeys. *J Virol* 70: 3198-206.
- Reimann KA, Waite BCD, Lee-Parriz DE, Lin W, Uchanska-Ziegler B, O'Connell MJ, Letvin NL 1994. Use of human leukocyte-specific monoclonal antibodies for clinically immunophenotyping lymphocytes of rhesus monkeys. *Cytometry* 17: 102-8.
- Rezende J. *Revista Goiana de Medicina*. Editorial. 1:1,1955

- Rezende, J.M. & Moreira, H. Forma digestiva da doença de Chagas. In CASTRO, L.P. & COELHO, L.C.V. *Gastroenterologia*, Rio de Janeiro, Editora Médica e Científica Ltda, 2004, p.325-392.
- Rezende, J.M. Clínica: Manifestações digestivas. In Brener, Z. & Andrade, Z. *Trypanosoma cruzi e Doença de Chagas*. Guanabara Koogan, Rio de Janeiro, 1979, p. 312-316.
- Rezende, J.M. de - Manifestações digestivas da doença de Chagas. In Dani, R. & Castro, L. de P. *Gastroenterologia Clínica* 3. ed., Rio de Janeiro, Guanabara Koogan, 1993, p. 1729-1755
- Rezende, J.M. Forma digestiva da moléstia de Chagas. *Revista Goiana de Medicina*, 5(3): 193-227, 1959.
- Rezende, J.M. Megaesôfago por doença de Chagas *Revista Goiana de Medicina*. 2(4): 297-314, 1956.
- Rezende, J.M., LAUAR, K.L. & OLIVEIRA, A.R. Aspectos clínicos e radiológicos da aperistalsis do esôfago. *Revista Brasileira de Gastroenterologia* 12: 247-262, 1960.
- Riarte R, Sinagra A, Lauricella M, Bolomo N, Moreno M, Cossio P, Arana R. Segura EL 1995. Chronic experimental infection by *Trypanosoma cruzi* in *Cebus apella* monkeys. *Mem Inst Oswaldo Cruz* 90: 733-40.
- Rosner IM, Bellasai J, Schinini A, Rovira T, de Arias AR, Ferro EA, Ferreira E, Velazquez G, Monzón MI, Maldonado M, Galeano R, Fresco MA 1989. Cardiomyopathy in *Cebus apella* monkeys experimentally infected with *Trypanosoma cruzi*. *Trop Med Parasit* 40: 24-31.
- Rosner IM, Schinini A, Rovira T, de Arias A, Velásquez G, Monzón MI, Maldonado M, Ferro EA, Galeano R 1988. Acute Chaga's disease in non-human primates. I. Chronmology of clinical events, clinical chemistry, ECG, radiology, parasitemia and immunological parameters in *Cebus apella* monkey. *Trop Med Parasitol* 39: 51-55.
- Samudio M, Montenegro-James S, de Cabral M, Martinez J, Rojas de Arias A, Woroniecky O, James MA 1998a. Differential expression of systemic cytokine profiles in Chagas' disease is associated with endemicity of *Trypanosoma cruzi* infections. *Acta Trop* 69(2):89-97.
- Samudio M, Montenegro-James S, Kasamatsu E, Cabral M, Schinini A, Arias AR, James MA 1999. Local and systemic cytokine expression during experimental chronic *Trypanosoma cruzi* infection in a *Cebus* monkey model. *Parasite Immunol* 21: 451-460.
- Samudio M, spones in *Trypanosoma cruzi*-infected children in Paraguay. *Am J Trop Med Hyg* 58(1):119-21.
- Scott MT, Neal RA, Woods NC 1985. Immunization of marmosets with *Trypanosoma cruzi* cell surface glycoprotein (GP90). *Trans R Soc Trop Med Hyg* 79: 451-4.
- Seah SKK, Marsden PD, Voller A, Pettitt LE 1974. Experimental *Trypanosoma cruzi* infection in Rhesus monkeys - The acute phase. *Trans Roy Soc Trop Med Hyg* 68: 63-9.
- Seneca H, Wolf A 1955. *Trypanosoma cruzi* infection in the indian monkey. *Am J Trop Med Hyg* 4: 1009-14.
- Shoshani J, Groves CP, Simons EL, Gunnell GF 1996. Primate phylogeny: morphological vs molecular results. *Mol Phylog Evol* 5: 102-54.
- Sopper S, Stahl-Henning C, Demuth M, Jonhston ICD, Dörries R, Meulen V 1997. Lymphocyte subsets and expression of differentiation markers in blood and lymphoid organs of rhesus monkeys. *Cytometry* 29: 351-62.
- Szarfman A, Gerech D, Draper CC, Marsden PD 1981. Tissue-reacting immunoglobulins in rhesus monkeys infected with *Trypanosoma cruzi*: a follow-up study. *Trans R Soc Trop Med Hyg* 75: 114-6.
- Szarfman A, Laranja FS, De Souza W, Galvão-Quintão L, Gerech D, Shmunis GA 1978. Tissue reacting antibodies in a rhesus monkey with long-term *Trypanosoma cruzi* infection. *Am J Trop Med Hyg* 27: 832-4.
- Szarfman A, Terranova VP, Rennard SI, Foidart JM, Lima MF, Scheinman JI, Martin GR 1982. Antibodies to laminin in Chagas' disease. *J Exp Med* 155: 1161-71.
- t Hart BA, van Meurs M, Brok HP, Massacesi L, Bauer J, Boon L, Bontrop RE, Laman JD 2000. A new primate model for multiple sclerosis in the common marmoset. *Immunol Today* 21: 290-7.
- Talvani A, Rocha MO, Ribeiro AL, Correa-Oliveira R, Teixeira MM 2004. Chemokine receptor expression on the surface of peripheral blood mononuclear cells in Chagas disease. *J Infect Dis* 189(2):214-20.
- Tarleton RL, Zhang L, Downs MO 1997. "Autoimmune rejection" of neonatal heart transplants in experimental Chagas disease is a parasite-specific response to infected host tissue. *Proc Natl Acad Sci U S A* 94(8):3932-7.

- Torres CM, Tavares BM 1958. Miocardite no macaco *Cebus* após inoculações repetidas com *Schizotrypanum cruzi*. Mem Inst Oswaldo Cruz 56:85-119.
- Vago AR, Macedo AM, Adad SJ, Reis DD, Correa-Oliveira R 1996. PCR detection of *Trypanosoma cruzi* DNA in oesophageal tissues of patients with chronic digestive Chagas disease. Lancet 348: 891-2.
- Villela, E. A ocorrência da moléstia de Chagas nos Hospitais de Belo Horizonte e na população de seus arredores. *Boletim da Academia Nacional de Medicina*, 102(12): 122-156, 1930.
- Wood FD 1934. Natural and experimental infection of *Triatoma protracta* (Uhler) and mammals in California with american human trypanosomiasis. Am J Trop Med 14: 497-517.
- Zabalgoitia M, Ventura J, Anderson L, Williams JT, Carey KD, Vandeberg JL. Electrocardiographic findings in naturally acquired chagasic heart disease in nonhuman primates. J Electrocardiol. 2003 Apr;36(2):155-60.
- Zabalgoitia M, Ventura J, Lozano JL, Anderson L, Carey KD, Hubbard GB, Williams JT, Vandeberg JL. Myocardial contrast echocardiography in assessing microcirculation in baboons with chagas disease. Microcirculation. 2004 Apr-May;11(3):271-8.
- Zhang L, Tarleton RL 1999. Parasite persistence correlates with disease severity and localization in chronic Chagas disease. J Infect Dis 180: 480-6.
- Ziccardi M, Lourenço-de-Oliveira R, Lainson R, Brígido MCO, Muniz JAPC 2000. Trypanosomes of non-human primates from the National Centre of Primates, Ananindeua, state of Pará, Brazil. Mem Inst Oswaldo Cruz 95: 157-9.

O modelo murino: cardiopatia – como acessar e explorar (Gabriel Mello, Jaline C Silvério)

- Araújo-Jorge, T (ORG). Doença de Chagas: Manual para experimentação animal. Rio de Janeiro : Editora Fiocruz / Instituto Oswaldo Cruz, 2000. 368p.
- Fox G.J., Cohen, J.B., Loew, M.F. Laboratory animal medicine. Academic Press, Inc. – Harcourt Brace Jovanovich, Publishers. 1984
- Andrade SG, Andrade V, Brodskyn C, Magalhaes JB, Netto MB. Immunological response of Swiss mice to infection with three different strains of *Trypanosoma cruzi*. Ann Trop Med Parasitol. 1985 Aug;79(4):397-407
- Andrade ZA. Immunopathology of Chagas Disease. Mem. Inst. Oswaldo Cruz vol.94 s.1. 1999.
- Andrade SG. Influence of *Trypanosoma cruzi* strain on the pathogenesis of chronic myocardial pathology in mice. Mem Inst Oswaldo Cruz. 1990; 85(1):17-27.
- Rossi MA, Goncalves S, Ribeiro-dos-Santos R. Experimental *Trypanosoma cruzi* cardiomyopathy in BALB/c mice. The potential role of intravascular platelet aggregation in its genesis. Am J Pathol. 1984 Feb;114(2):209-16.
- Andrade SG, Andrade V, Brodskyn C, Magalhaes JB, Netto B. Immunological response of Swiss mice to infection with three different strains of *Trypanosoma cruzi*. Ann Trop Med Parasitol. 1985 Aug;79(4):397-407
- de Souza AP, de Oliveira GM, Vanderpas J, de Castro SL, Rivera MT, Araujo-Jorge TC. Selenium supplementation at low doses contributes to the decrease in heart damage in experimental *Trypanosoma cruzi* infection. Parasitol Res. 2003 Sep;91(1):51-4.
- Sadigursky M, Andrade SG. Electrocardiographic changes in experimental chronic murine Chagas' disease. Braz J Med Biol Res. 1986;19(3):379-88.
- Rocha NN, Garcia S, Gimenez LE, Hernandez CC, Senra JF, Lima RS, Cyrino F, Bouskela E, Soares MB, Ribeiro dos Santos R, Campos de Carvalho AC. Characterization of cardiopulmonary function and cardiac muscarinic and adrenergic receptor density adaptation in C57BL/6 mice with chronic *Trypanosoma cruzi* infection. Parasitology. 2006 Dec;133(Pt 6):729-37.
- Jelicks LA, Chandra M, Shtutin V, Petkova SB, Tang B, Christ GJ, Factor SM, Wittner M, Huang H, Douglas SA, Weiss LM, Orleans-Juste PD, Shirani J, Tanowitz HB. Phosphoramidon treatment improves the consequences of chagasic heart disease in mice. Clin Sci (Lond). 2002 Aug;103 Suppl 48:267S-271S
- Henriques-Pons A, Oliveira GM, Paiva MM, Correa AF, Batista MM, Bisaggio RC, Liu CC, Cotta-de-Almeida V, Coutinho CM, Persechini PM, Araújo-Jorge TC. Evidence for a perforin-mediated mechanism controlling cardiac inflammation in *Trypanosoma cruzi* infection. Int J Exp Pathol. 2002; 83(2):67-79.

- Oliveira, GM ; Masuda, OM; Rocha, NN ; Batista, WS ; Diniz, RL ; Hooper CS ; Ramos, S ; Araújo-Jorge, TC. and Henriques-Pons, A. Fas-L regulates Renal/Cardiac failure in acute *Trypanosoma cruzi* infection. *In submitted*
- Fitzgerald SM, Kemp-Harper BK, Parkington HC, Head GA, Evans RG. Endothelial dysfunction and arterial pressure regulation during early diabetes in mice: roles for nitric oxide and endothelium-derived hyperpolarizing factor. *Am J Physiol Regul Integr Comp Physiol*. 2007
- de Souza EM, Oliveira GM, Boykin DW, Kumar A, Hu Q, De Nazare C Soeiro M. Trypanocidal activity of the phenyl-substituted analogue of furamide DB569 against *Trypanosoma cruzi* infection in vivo. *J Antimicrob Chemother*. 2006 Sep;58(3):610-4.
- Silva CF, Meuser MB, De Souza EM, Meirelles MN, Stephens CE, Som P, Boykin DW, Soeiro MN. Cellular Effects of Reversed Amidines on *Trypanosoma cruzi*. *Antimicrob Agents Chemother*. 2007 Aug 13;
- Soares MB, Lima RS, Rocha LL, Takyia CM, Pontes-de-Carvalho L, de Carvalho AC, Ribeiro-dos-Santos R. Transplanted bone marrow cells repair heart tissue and reduce myocarditis in chronic chagasic mice. *Am J Pathol*. 2004 Feb;164(2):441-7.
- Garcia S, Ramos CO, Senra JF, Vilas-Boas F, Rodrigues MM, Campos-de-Carvalho AC, Ribeiro-Dos-Santos R, Soares MB. Treatment with benznidazole during the chronic phase of experimental Chagas' disease decreases cardiac alterations. *Antimicrob Agents Chemother*. 2005 Apr;49(4):1521-8.
- Lima S.C. E. and Minoprio P. Chagas' Disease Is Attenuated in Mice Lacking gd T Cells. *Infection and Immunity*, Jan. 1996, p. 215–221 Vol. 64, No. 1
- Padilla A, Xu D, Martin D, Tarleton R. Limited role for CD4+ T-cell help in the initial priming of *Trypanosoma cruzi*-specific CD8+ T cells. *Infect Immun*. 2007 Jan;75(1):231-5.
- Tzelepis F, de Alencar BC, Penido ML, Gazzinelli RT, Persechini PM, Rodrigues MM. Distinct kinetics of effector CD8+ cytotoxic T cells after infection with *Trypanosoma cruzi* in naive or vaccinated mice. *Infect Immun*. 2006 Apr;74(4):2477-81.
- Sardinha LR, Elias RM, Mosca T, Bastos KR, Marinho CR, D'Imperio Lima MR, Alvarez JM. Contribution of NK, NK T, gamma delta T, and alpha beta T cells to the gamma interferon response required for liver protection against *Trypanosoma cruzi*. *Infect Immun*. 2006 Apr;74(4):2031-42.
- Tarleton RL, Grusby MJ, Postan M, Glimcher LH. *Trypanosoma cruzi* infection in MHC-deficient mice: further evidence for the role of both class I- and class II-restricted T cells in immune resistance and disease. *Int Immunol*. 1996 Jan;8(1):13-22.
- Rottenberg ME, Riarte A, Sporrang L, Altchek J, Petray P, Ruiz AM, Wigzell H, Orn A. Outcome of infection with different strains of *Trypanosoma cruzi* in mice lacking CD4 and/or CD8. *Immunol Lett*. 1995 Feb;45(1-2):53-60.
- Michailowsky V, Celes MR, Marino AP, Silva AA, Vieira LQ, Rossi MA, Gazzinelli RT, Lannes-Vieira J, Silva JS. Intercellular adhesion molecule 1 deficiency leads to impaired recruitment of T lymphocytes and enhanced host susceptibility to infection with *Trypanosoma cruzi*. *J Immunol*. 2004 Jul 1;173(1):463-70.
- Laucella S, Salcedo R, Castanos-Velez E, Riarte A, De Titto EH, Patarroyo M, Orn A, Rottenberg ME. Increased expression and secretion of ICAM-1 during experimental infection with *Trypanosoma cruzi*. *Parasite Immunol*. 1996 May;18(5):227-39.
- Koga R, Hamano S, Kuwata H, Atarashi K, Ogawa M, Hisaeda H, Yamamoto M, Akira S, Himeno K, Matsumoto M, Takeda K. TLR-dependent induction of IFN-beta mediates host defense against *Trypanosoma cruzi*. *J Immunol*. 2006 Nov 15;177(10):7059-66.
- Hardison JL, Kuziel WA, Manning JE, Lane TE. Chemokine CC receptor 2 is important for acute control of cardiac parasitism but does not contribute to cardiac inflammation after infection with *Trypanosoma cruzi*. *J Infect Dis*. 2006 Jun 1;193(11):1584-8.
- Hardison JL, Kuziel WA, Manning JE, Lane TE. Chemokine CC receptor 2 is important for acute control of cardiac parasitism but does not contribute to cardiac inflammation after infection with *Trypanosoma cruzi*. *J Infect Dis*. 2006 Jun 1;193(11):1584-8.
- Galvao Da Silva AP, Jacysyn JF, De Almeida Abrahamsohn I. Resistant mice lacking interleukin-12 become susceptible to *Trypanosoma cruzi* infection but fail to mount a T helper type 2 response. *Immunology*. 2003 Feb;108(2):230-7.
- Hardison JL, Kuziel WA, Manning JE, Lane TE. Chemokine CC receptor 2 is important for acute control of cardiac parasitism but does not contribute to cardiac inflammation after infection with *Trypanosoma cruzi*. *J Infect Dis*. 2006 Jun 1;193(11):1584-8.

- Costa VM, Torres KC, Mendonca RZ, Gresser I, Gollob KJ, Abrahamsohn IA. Type I IFNs stimulate nitric oxide production and resistance to *Trypanosoma cruzi* infection. *J Immunol*. 2006 Sep 1;177(5):3193-200.
- Cummings KL, Tarleton RL. Inducible nitric oxide synthase is not essential for control of *Trypanosoma cruzi* infection in mice. *Infect Immun*. 2004 Jul;72(7):4081-9.
- Malvezi AD, Cecchini R, de Souza F, Tadokoro CE, Rizzo LV, Pinge-Filho P. Involvement of nitric oxide (NO) and TNF-alpha in the oxidative stress associated with anemia in experimental *Trypanosoma cruzi* infection. *Immunol Med Microbiol*. 2004 May 1;41(1):69-77.
- Martins GA, Petkova SB, MacHado FS, Kitsis RN, Weiss LM, Wittner M, Tanowitz HB, Silva JS. Fas-FasL interaction modulates nitric oxide production in *Trypanosoma cruzi*-infected mice. *Immunology*. 2001 May;103(1):122-9.
- de Oliveira GM, Diniz RL, Batista W, Batista MM, Bani Correa C, de Araújo Jorge TC, Henriques-Pons A. Fas Ligand-Dependent Inflammatory Regulation in Acute Myocarditis Induced by *Trypanosoma cruzi* Infection. *Am J Pathol*. 2007; 171(1):79-86.
- Marino AP, da Silva A, dos Santos P, Pinto LM, Teixeira MM, Lannes-Vieira J. Regulated on activation, normal T cell expressed and secreted (Rantes) antagonist (Met Rantes) controls the early phase of *Trypanosoma cruzi*-elicited myocarditis. *Circulation*. 2004 Sep 14;110(11):1443-9.