diagnosis of disease through PCR collaborating complementarity of classical diagnostic methods of ACL.

1.3-122
Infection by calodium hepaticum in a rural area of the Amazon: rare event or misdiagnosis?
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INTRODUCTION Calodium hepaticum (syn. Capillaria hepatica) is a nematode of ubiquitous distribution present in the liver parenchyma of various mammals. Human infection is considered rare and occurs after the ingestion of non embryonated eggs present in the liver of animals (spurious infection) or embryonated eggs dispersed in the environment (true infection), the latter mechanism causing liver disease.

METHODS AND MATERIALS In a survey in August 2009 in a rural community with low levels of sanitation (Presidente Figueiredo, Amazonas, Brazil), stool samples of 194 individuals were analyzed by spontaneous sedimentation. Investigation of the transmission of C. hepaticum and feeding habits was also done. Differences between groups were evaluated using Fisher exact tests.

RESULTS Ten cases [5.1% (1.8–8.5) CI 95%] of spurious infection were identified. In one household the source of infection was determined by the finding of C. hepaticum eggs in the liver of a wild pig (Tayassu spp.) consumed as food. 37.5% of this population consume liver of hunted animals and the risk of spurious infection is 10-times higher in people eating this organ (10.9% vs. 0% (P = 0.03)).

CONCLUSIONS The prevalence of spurious infection by C. hepaticum in populations consuming game meat could be higher than previously known. Furthermore, the absence of specific signs and symptoms that facilitate disease diagnosis and the unawareness of the nematode by many laboratory technicians, indicates that this diagnosis may be underestimated. These results suggest that it is necessary to evaluate the effect of C. hepaticum as an agent of disease in tropical rural communities.

1.3-123
The epidemiology of canine leishmaniasis in the dog population of Amudat district in Uganda
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Visceral Leishmaniasis is an important public health disease amongst the Pokot pastoralists in Amudat district in Uganda. A cross sectional study was performed in all the villages of Amudat district using the dip stick method and microscopic examination of lymph node biopsies. A total of 1243 dogs from 124 ‘Manyatas’ were tested sequentially for Leishmania antibodies using the direct agglutination test or rK39 anti-gen-based dip sticks and microscopic examination of lymph node smears. Prevalence of 14.1% was recorded in female dogs whilsts 28.1% were recorded in the male dog’s population; while prevalence of 12.6% for females and 25.7% for male using the microscopic smear examinations were recorded. Leishmania prevalence was seen to vary according to area and grazing strategy. Age, sex, geographical location and history of migrations were found to have independent effects on the seroprevalence. This study establishes that canine leishmaniasis is endemic in dog populations owned by pastoralist communities in Uganda. The implications of these findings with respect to the epidemiology and control of canine leishmaniasis in Karamoja are discussed.

1.3-124
The spatial distribution characteristics of visceral leishmaniasis cases in Kashi, Xinjiang, China
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Visceral leishmaniasis (VL) has remained a public health problem in western China. In recent years, hundreds of cases were reported every year and there was mortality from VL in some areas. Meanwhile the endemic areas of VL have gradually enlarged. VL used to be limited to several areas in western China. The cases reported from Xinjiang, Gansu and Sichuan provinces accounted for 97.8% of all VL cases in China. The aim of the research is to describe the spatial distribution characteristics of VL in China in order to provide evidences for developing a VL control strategy.

METHODS We selected three administrative villages in highly endemic areas, Kashi, Xinjiang according to the reported data based on Infectious Diseases Report System, and did a household survey. Every family member who was more than 10 years old was interviewed with a questionnaire. The geographic position of each household was located by GPS. Data was analyzed using multivariate statistical methods and geographic statistical methods.

RESULTS AND CONCLUSIONS The test of goodness of fit binomial distribution proved that distribution of VL cases, were not the binomial distribution X2 = 53.23; P < 0.0. It showed that the distribution of cases was not random. Runs test (a kind of statistics method) results showed that if the number of families with VL patients in a group ismore than 5, then the distribution of patients along the canals is not random. There were 113 such households accounting for 63.84% (113/177). Scanning statistics analysis was used to find out spatial aggregation. Three clustering areas were identified. Furthermore, specific location, scope and relative risk (RR) were described and identified.

CONCLUSION The distribution of VL shows family aggregation and spatial aggregation. These characteristics are very helpful to develop appropriate control strategies and measures for VL in Xinjiang.

1.3-125
Failure to associate serum Th1/Th2 cytokine profiles with symptomatic and asymptomatic human Leishmania (L.) infantum chagasi-infection in Amazonian Brazil
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INTRODUCTION: The immune response of human infection by Leishmania (L.) infantum chagasi, the causative agent of American visceral leishmaniasis (AVL), has been regarded with great interest in viewing of its role on the clinical-immunological spectrum that result from this interaction. Thus, the serum Th1/Th2 cytokine profile of symptomatic and asymptomatic infection was evaluated by Capture Enzyme-Linked Immunosorbent Assay (ELISA), aiming to better understand its immune response.

MATERIAL AND METHODS One hundred and sixty-eight serum samples from endemic areas of AVL in Pará state (Barcarena municipality), Amazonian Brazi were analyzed by ELISA. Definition of serum samples was based on the clinical-immunological profiles prior identified by using the indirect fluorescent antibody
test (IFAT) and delayed-type hypersensitivity (DTH), both with L. (L.) i. chagasi-antigen: Asymptomatic Infection, AI = DTH+/++++/IFAT- (n = 84); Symptomatic Infection, AVL = DTH-/IFAT++++ (n = 8); Subclinical Oligosymptomatic Infection, SOI = DTH-/IFAT+++ (n = 6); Subclinical Resistant Infection, SRI = DTH+/++++/IFAT++ (n = 19), Indeterminate Initial Infection, III = DTH-/IFAT+++ (n = 31). ELISA assays were carried out to recognize the serum Th1 (IFN and IL-2) and Th2 (IL-10) cytokines profiles.

RESULTS Among 84 samples of AI profile, 7 (8.3%) were positive for INF 9 (10.7%) for IL-10 and only 1 (1.2%) for IL-2; amongst 39 of SRL 3 (7.7%) reacted for INF and 2 (5.1%) for IL-10; amongst 31 of III, only 1 (3.2%) showed reaction for INF amongst eight of SI (AVL), only 2 (25%) were positive for IL-10 and, amongst six of SOI, 2 (33%) reacted for INF.

CONCLUSION These results did not confirm an association between the clinical-immunological profiles of human L. (L.) i. chagasi-infection and the serum Th1/Th2 cytokines profiles, mainly regarding the asymptomatic AI, SRI and III profiles; with respect to symptomatic SI (AVL) and SOI profiles, there was confirmed IL-10 in 25% of AVL and INF in 33% of self-healing SOI cases.

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1.3-126
Health seeking behavior and utilization of health services by schistosomiasis patients in a poor rural community in Brazil
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Schistosomiasis causes a significant economic burden in endemic populations. Morbidity control through integration of health care systems is considered a potentially sustainable and cost effective approach. A questionnaire survey was carried out among 1228 individuals to investigate health seeking behavior and utilization of schistosomiasis diagnostic and treatment services in relation to socioeconomic status, social networks, signs and symptoms and actions taken against the symptoms during the period 2003–2006. Univariate analysis and odds ratios between 2003 and 2006 revealed the following factors as being associated with significantly lower for utilization of diagnostic services: being male, age <34 years, monthly per capita income <60 Reais, not owning a car/motorcycle, household receiving government assistance, having more than 0.80 persons per room and S. mansoni-infected persons with or without symptoms. All these variables except age, gender and government assistance remained significantly associated in the multivariate model. Only 24.5% of the persons self-reporting to a health facility between 2003 and 2006 obtained a stool test from the local health center or other health facilities and 138 of the 197 (70.0%) persons, experiencing symptoms suggestive of schistosomiasis within 30 days prior to the 2007 survey, used home remedies. The analysis individual records for the 12-month period prior to 2007 survey showed that only four of the 179 patients with symptoms suggestive of schistosomiasis received praziquantel, the others being treated symptomatically for soil-transmitted helminths. Only 18.3% of the persons who obtained a stool test and half of those who were treated obtained these services through the local health center. The others used health facilities outside the study area. This study confirms recent reports of low access and utilization of schistosomiasis diagnostic and treatment services in other endemic areas in Brazil.

1.3-127
Correlation between tissue parasitism and expression of inos and CD3+ T cells in the cutaneous lesions developed experimentally in Cebus apella monkey by Leishmania (L.) amazonensis and Leishmania (V.) braziliensis
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Cebus apella monkey is susceptible to experimental infection by different species of New World dermatotropic Leishmania sp. and is considered a suitable animal model for studying cutaneous leishmaniasis. The aim of this study was to correlate the parasite burden with the CD3+ T cells and iNOS+ expression during the evolution of cutaneous lesions in C. apella developed by L. (L.) amazonensis and L. (L.) braziliensis inoculation. Ten specimens of monkey were intradermally inoculated with 3 × 106 promastigotes in six different spots on the tail, two groups of five animals inoculated with each Leishmania species. Skin biopsies were collected at 30, 60, 90, 120, 150 and 180 day post-infection (PI) for immunohistochemical staining using as primary antibodies anti-Leishmania, anti-CD3 and anti-iNOS. A quantitative analysis of the immune-stained cells was done in each section using an image analysis system. A gradual increase on the parasitism was observed in the cutaneous lesion until the 60th day PI. After this period the parasitism decrease so pronounced that in the 180th day PI there were not found parasites in the healed lesions. The amount of parasites was smaller in L. (V.) braziliensis than in L. (L.) amazonensis infection. High densities of stained CD3+ T and iNOS+ cells were observed at 30th and 60th days PI in L. (L.) amazonensis infection followed by a progressive decrease. Nevertheless, the CD3+ T and iNOS+ cellular densities were higher in L. (V.) braziliensis infection since 90th day PI, reflecting a more lasting and efficient cellular immune response, which was related to decreased parasitism from the 90th day PI. Our results suggest an efficient activation of the cellular immune response of C. apella monkey, with the subsequent activation of dermal macrophages and NO production, which is directly related to the reduction of parasite burden and the infection healing in the skin of C. apella infected by both Leishmania species.

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1.3-128
Relationship between cellular immune response and dendritic cells in the experimenta, cutaneous leishmaniasis of BALB/c mice due to Leishmania (L.) amazonensis and Leishmania (V.) braziliensis
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The role of Langerhans (LC) and dermal dendritic cells (dDC) in the development of cellular immune response is still contradictory in leishmaniasis. Thus, we evaluated the potential of these dendritic cells in modulating the Th1 and Th2 immune responses in the skin of BALB/c mice experimentally infected with L. (L.) amazonensis (La) and L. (V.) braziliensis (Lb) parasites. At 4th and 8th weeks PI, skin biopsies were collected to determine the parasite load and CD207+, CD11c+, CD4+, CD8+ and iNOS+...