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T-1626:

EPIDEMIOLOGICAL PROFILE OF BLOOD DONORS WITH HTLV-1 AND 2 INFECTION AND SEROLOGICAL SCREENING IN FAMILY MEMBERS AS A MEASURE OF INTERRUPTION OF VIRAL TRANSMISSION

Youko Nukui[1], Jorge Simão do Rosário Casseb[1], Vanderson Geraldo Rocha[1], ***Karine Sobral Marques[1]***

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Objective(s): To evaluate the epidemiological profile of blood donors with HTLV-1 and 2, in addition to serological screening in family members of patients with HTLV-1 and 2.
Material and Methods: Conducting an epidemiological survey of patients with HTLV infection identified through blood donation, in addition to performing serology to identify the anti-HTLV antibody in first, second and third degree relatives (parents, children, siblings and uncles) of the patients being followed up at the HTLV outpatient clinic of the hematology of the HC-FMUSP, who agreed to proceed with the examination. Serologies were performed using ELISA and/or chemiluminescence methodologies. The positive family members were offered clinical follow-up and oriented on measures to prevent viral transmission.
Results and Conclusion: Of the 445 patients with HTLV in follow-up after identification of infection by serological screening in blood donation, 378 were type 1, 54 type 2, 1 type 1 and 2, in addition to 12 without identification of type. Of the total there were 282 women and 163 men. Most were white (28%) and married (70.8%). As for place of birth, 223 were from São Paulo, 58 from Bahia, 33 from Pernambuco, 21 from Minas Gerais. In terms of percentage, 61.7% were from the Southeast Brazilian region and 43.2% from the Northeast, but when we evaluated the mothers of these patients, 43.2% were from the Northeast, while 35.9% were from the Southeast. Screening of patients' relatives identified 63 individuals with anti-HTLV antibodies, of which 60 were type 1, 1 were type 2 and 2 had no type identification. The results corroborate epidemiological data in the literature, despite the high prevalence of individuals from São Paulo, which is justified in this context by the state in which the study was carried out. In addition, the high number of infected individuals found in the investigation of family members justifies the serological screening due to the high potential for interrupting the contagion.

Keywords: blood donors – HTLV-1 and 2 – anti-HTLV antibodies.

Funding Agencies: without.

T-1622:
EVALUATION OF LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) FOR DETECTION OF HTLV-1 IN WHOLE BLOOD AND SERUM SAMPLES

*Viviane Brandão Gomes de Sousa[1], Larissa Tropiano Da Silva Andrade[1], Patrícia Pais Martins[1], Vanessa Duarte da Costa[1], Vanessa Alves Marques[1], Ana Rita Coimbra Motta de Castro[2], **Carolina Amianti[3]**, Livia Melo Villar[1]*

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Introduction: HTLV-1 chronic infection screening is done by serological and/or molecular tests. Molecular methods are useful to identify active cases and rapid diagnosis based on isothermal amplification (LAMP) might be an alternative to increase the access to diagnosis in low resource areas.
Objective: This study aims to optimize LAMP to detect HTLV-1 proviral DNA in whole blood and serum samples.
Methodology: A total of 97 patients infected with HTLV subtype 1a and 49 healthy individuals gave whole blood and serum samples. RNA/proviral DNA from whole blood and serum samples was extracted using commercial assay and after enzyme was added and incubated at 63ºC for 60' followed by its inactivation at 80 ºC for 10'. LAMP protocol had a constant temperature of 63 °C for 60 minutes for whole blood and serum. In natura and inactive whole blood samples were evaluated. Gel electrophoresis was used for visualization.
Results: HTLV proviral DNA was detected in 92.7% (90/97) of blood samples and it was not detected in healthy subjects giving a specificity of 100%. Using inactivated and in natura whole blood samples (n=12) gave the same sensitivity of 75% (9/12). In contrast, only 4 serum samples were detected demonstrating a low sensitivity (4.1%; 4/97).
Conclusion: LAMP demonstrated high sensitivity for HTLV-1 RNA detection in whole blood samples compared to serum demonstrating the potential of this method for use in clinical routine.

Palavras-chave: rapid diagnosis, Whole blood, serum, HTLV.

Agências Financiadoras: CNPQ, FIOCRUZ.

T-1621:

EVALUATION OF REGULATORY T-LYMPHOCYTES IN INDIVIDUALS INFECTED WITH HTLV-1

Gois, Luana Leandro[1,2,4], Ribeiro-Soares, Bárbara[1,2]; Regis-da-Silva, Carlos Gustavo[1]; Zanette, Dalila L[3]; Fred Luciano Neves Santos1; Raphaella Lisboa,[1,2]; Galvão, Bernardo[1,2]; ***Grassi, Maria Fernanda Rios[1,2].***

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Background: HTLV-1 triggers substantial activation of the immune system, leading to spontaneous proliferation of T cells secreting proinflammatory cytokines in individuals with HTLV-1-associated myelopathy/tropical spastic paraparesis (HAM / TSP). Regulatory T cells (Tregs) may be involved in controlling inflammation through IL -10 and TGF-β production.

Purpose: To compare the cytokine profiles of CD4+ and CD8+ Tregs in asymptomatic HTLV-1-infected individuals and HAM / TSP patients.

Methods: Asymptomatic HTLV-1-infected individuals and patients diagnosed with HAM / TSP were matched for sex and age. A group of uninfected individuals served as a control group. Peripheral blood mononuclear cells were cultured and labeled with monoclonal antibodies (anti-CD3, anti-CD4, anti-CD8, anti-CD25, anti-FOXP3, anti IL -10, and anti-TGF-β). The frequency of Tregs producing or not producing IL -10 and/or TGF-β was quantified by flow cytometry. Real-time reverse transcriptase polymerase chain reaction (RT -rtPCR) was used to quantify mRNA expression of cytokines and cell receptors in PBMC.

Results: The frequency of CD4+ Tregs and CD4+ and CD8+ Tregs producing only IL -10 was statistically higher in HAM / TSP patients than in asymptomatic HTLV-1-infected individuals. A positive correlation between the frequency of IL -10+CD4+ Tregs and proviral load was observed in HAM / TSP. In addition, a significant positive correlation between gene expression of regulatory (TGF-β1 and IL -10) and pro-inflammatory cytokines (IL -1β, TNF-a and IFN-g) was observed in the HAM-TSP group.

Conclusion: IL -10 producing Tregs were increased in patients with HAM / TSP. The imbalanced production of IL -10 and TGF-b in HAM / TSP patients might contribute to the increased inflammatory response characteristic of the disease.

Keywords: HTLV-1, HAM/TSP, regulatory T-cells, TGF-b, IL-10

Funding: Fundação de Amparo à Pesquisa do Estado da Bahia (Fapesb), Edital 014/2013, PET0030/2013, Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Fundação Nacional de Desenvolvimento do Ensino Superior Particular (Funadesp).

T-1620:

EPIDEMIOLOGIC AND MOLECULAR EVIDENCE OF INTRAFAMILIAL TRANSMISSION OF HTLV-1 VIA SEXUAL AND VERTICAL ROUTES IN BAHIA, BRAZIL

*Aidê Nunes da Silva[1**], Thessika Hialla Almeida Araújo[1**], Ney Boa-Sorte[1], Giovanne Farias[1], Ana Karina Galvão-Barroso[1], Antônio de Carvalho[1], Ana Carolina Vicente[3], Maria* ***Fernanda Rios Grassi*** *[1,2], Bernardo Galvão-Castro[1,2]*

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Introduction: In Brazil, the intrafamilial transmission routes of HTLV-1 based on molecular analysis have been studied only in remote populations or in limited communities.
Objective: to study familial clustering and determine the transmission routes of HTLV-1 through epidemiological and genetic analyzes.
Methods: Patients from the Center for HTLV in Salvador, Brazil, and their first-degree relatives who had previously tested positive for HTLV-1 were studied. The LTR regions of HTLV-1 were amplified, and the sequences were analyzed for the presence of intrafamilial polymorphisms. Family pedigrees were constructed and analyzed to infer HTLV-1 transmission pathways.
Results: In 154 patients, at least one other family member had tested positive for HTLV-1 (a total of 182 first-degree relatives). 51.6% of patients reported being breastfed and 67.4% reported never using a condom. Of the 42 mother-child pairs, 23.8% had a child aged 13 years or younger; all mothers reported breastfeeding their babies. Evaluation of pedigrees of families with 4 or more members suggests that vertical transmission is a likely mode of transmission in three families. Three families may have had both vertical and sexual transmission routes for HTLV-1. The genetic signatures of the LTR region of 8 families revealed 3 family groups with evidence of vertical transmission, another 3 families (spouses) with possible sexual transmission, and one family with both transmission routes. The HTLV-1 LTR sequences of all family members belonged to Cosmopolitan subtype HTLV-1a Transcontinental subgroup A.
Conclusion: Sexual and vertical transmission routes contribute to the intrafamilial spread of HTLV-1 in the state of Bahia.

Keywords: HTLV-1, transmission routes, family, aggregation, subtypes

Funding Agencies: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Fundação de Amparo à Pesquisa do Estado da Bahia (Fapesb), Fundação Nacional de Desenvolvimento do Ensino Superior Particular (Funadesp).

T-1619:

EVALUATION OF MAJOR HUMAN PAPILLOMAVIRUS (HPV) SUBTYPES IN VAGINAL FLUID OF HTLV-1-INFECTED WOMEN FROM SALVADOR, BRAZIL

Alisson de Aquino Firmino[1], Paulo Roberto Tavares Gomes Filho[1], Adenilda Lima Lopes Martins[1,2], Mariana Lima Drumond[1], Giselle Calasans de Souza Costa[3], Carlos Gustavo Regis da Silva[4], Bernardo Galvão-Castro[1,4], ***Maria Fernanda Rios Grassi[1,4]***

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Introduction: Cervical cancer is associated with persistent infection by oncogenic HPV subtypes. A higher prevalence of HPV has been found in women infected with HTLV-1, but few studies describe coinfection.
Objective: To investigate cervical and vaginal HPV infection in women infected with HTLV-1 and to determine the most prevalent subtypes.
Methods: Vaginal fluid samples were collected with sterile swabs from the ectocervix, endocervix, and vaginal walls of HTLV-1-infected women at the HTLV Center in Salvador, Brazil. HPV diagnosis was performed by polymerase chain reaction (PCR) using primers to amplify a DNA fragment from the L1 region of the viral genome. In the subtyping analysis, the nucleotide sequences obtained in the amplifications were verified by genomic homology with already known HPV sequences in the PaVE (Papillomavirus Episteme) platform database of the NIH (National Institutes of Health).
Results: Thirty-five HTLV-1-infected women, with a median age of 42 years (26 of 56 years), were studied. HPV infection was detected in 19 women (54.3%). Subtypes 53 and 70 (probably high oncogenic risk) were detected in 47% of women, whereas subtypes 31 and 58, which are high risk, were detected in 16% of women. Subtypes 6, 61, and 72, considered low risk, were detected in 37% of women. One infected patient was found to have a low-grade squamous intraepithelial lesion (LSIL) (5.27%).
Conclusion: More than half of the women infected with HTLV-1 had some HPV subtype, with the majority at probable or actual high risk for cervical cancer.

Keywords: HTLV-1; HPV; coinfection, cervical cancer.

Funding Agencies: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Fundação de Amparo à Pesquisa do Estado da Bahia (Fapesb), Fundação Nacional de Desenvolvimento do Ensino Superior Particular (Funadesp).

T-1618:

SARS-COV-2 VACCINATION IN PEOPLE LIVING WITH HTLV-1: VACCINE HESITANCY AND ANTIBODY RESPONSE

Carolina Rosadas* [1], *Beatrice Cockbain* [1], *Jana Haddow* [2], *Daniel Bradshaw* [2], *Pudika Perera* [2], *Adine Adonis* [2], *Graham P Taylor* [1,2], *Divya Dhasmana* [2]

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Introduction: SARS-CoV-2 vaccination is effective in the general population, but vaccine hesitancy remains. Anecdotally this also occurs in people living with HTLV-1 (PLHTLV-1) in whom there are no vaccine response data.
Objectives: To evaluate the humoral response to SARS-CoV-2 vaccine in patients with HAM and asymptomatic infection (AC) and to explore rates and reasons behind vaccine hesitancy.
Methods: Clinical records of PLHTLV in England (01/03/2021-20/02/2022) were reviewed. Demographics, information on HTLV-1 associated clinical status and treatment, SARS-CoV2 vaccine history, anti-Spike and anti-Nucleoprotein SARS-CoV-2 IgG (Abbott Architect) levels and HTLV-1 proviral load in PBMCs (PVL) were acquired.
Results: 105 PLHTLV-1 (77 AC, 28 HAM) were included. 19 (18.1%) refused vaccination (22.1% AC, 7.1% HAM) expressing concerns about safety, fertility and pregnancy, severe reactions and perceived low risk of infection. All participants had anti-spike IgG following vaccination, but 81% had very low antibody level (according to NHS guidance). Data are presented as median BAU/ml and (IQR). Four (7%) had anti-nucleoprotein antibodies and higher levels of anti-spike antibodies (and were excluded from further analysis). Anti-spike IgG titre increased with doses received: one – 119(55-359); two -161(46-331); three - 2,528 (217-3,599). Patients with HAM had lower antibody titres after second and third dose, compared to AC (AC, HAM: 1st dose: 183(80-286) v 119(41-432) p=0.89; 2nd: 228(77-375) v 80(14-106) p=0.0039; 3rd: 3,071(1,487-3,885) v 130(22-1,950) p=0.057).
Conclusion: Vaccine hesitancy is high among patients with HTLV-1. All patients seroconverted, but response may be impaired in PLHTLV-1, particularly in those with HAM. Vaccine booster should be considered for PLHTLV-1.

Keywords: HTLV, SARS-CoV-2, vaccine response

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T-1617

HOW DO SOCIOECONOMIC DETERMINANTS OF HEALTH AFFECT THE PREVALENCE OF HTLV-1 GLOBALLY? A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Introduction: Human T Lymphotropic Virus type 1 (HTLV-1) is a neglected retrovirus associated with many clinical disorders, most notably Adult T-cell Leukaemia/ Lymphoma and HTLV-1-Associated Myelopathy (HAM). Found in endemic clusters across the world, high prevalence has been reported in minoritized groups who suffer from health inequities.
Objectives: This study investigates the association between HTLV-1 prevalence and the following socioeconomic determinants of health: education, income, employment, and social class, which are markers of health inequity.
Methods: A systematic review was conducted by searching the following databases: Ovid/Medline, Embase, Global Health Database, Web of Science, LILACS and SciELO. Primary studies in English, Spanish and Portuguese mentioning HTLV-1 and one of education, income, employment and/or social class were included. A random-effects metaanalysis was performed, and odds ratios (OR) were calculated to determine the association between the four socioeconomic determinants of health and HTLV-1 prevalence.
Results: 46 studies were included. HTLV-1 prevalence was higher in individuals with less than primary education compared to those who completed primary education (OR 2.08 [95% CI 1.54-2.81]; P<0.01). This may be because individuals with low education have reduced access to and understanding of health information, thus increasing the prevalence of risk factors associated with HTLV-1 infection. No other determinants were found to be statistically significant.
Conclusion: Fewer years of schooling is associated with increased HTLV-1 prevalence. Therefore, health promotion materials and public health policies regarding HTLV-1 must consider those with lower educational levels in order to effectively reduce HTLV-1 transmission.

Keywords: HTLV, socioeconomic determinants, health inequities, prevention

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T-1616:

EVOLUTION OF ERECTILE DYSFUNCTION IN INDIVIDUALS INFECTED WITH HTLV-1: A PROSPECTIVE COHORT STUDY

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Background: Erectile dysfunction (ED) is a common finding in individuals infected with HTLV-1, especially in those with symptomatic neurological disease; virtually all patients with HTLV-1-associated myelopathy (HAM/TSP) have some degree of ED. However, ED is also found in a large percentage of HTLV-1 carriers.
Aim: To evaluate the evolution of ED in HTLV-1 infected individuals followed for up to 15 years.
Methods: Prospective cohort study of HTLV-1 infected men with ED, aged 18 to 70 years, followed from January 2004 to December 2019. We used the International Abbreviated Index of Erectile Function 5 (IIEF-5), the Expanded Disability Status Scale (EDSS) and the Osame Motor Disability Scale, and the Overactive Bladder Symptom Score (OABSS) to define and stratify ED, neurologic and bladder dysfunction, respectively.
Outcomes: Time to development of severe ED.
Results: We studied 90 men with ED, mean age 52.8 ± 9.78 years. At baseline, 42 were carriers, 16 had probable HAM/TSP and 32 had definite HAM/TSP. Mean IIEF-5 was highest among carriers and lowest in patients with definite HAM/TSP whereas mean OABSS was lowest in carriers and highest in definite HAM/TSP patients. Mean follow-up was 8.30 ± 3.97 years. Mean IIEF-5 fell significantly from baseline to last follow-up among carriers, probable HAM/TSP and definite HAM/TSP patients. There was an inverse correlation between the IIEF-5 and the OABSS at last follow-up ($r = -0.62$, $P < 0.001$). In survival analysis, the time to development of severe ED was significantly shorter in patients with definite HAM/TSP when compared to carriers ($P = 0.001$) and probable HAM/TSP ($P = 0.014$). The presence of definite HAM/TSP at baseline was independently associated with the development of severe ED, after adjustment for baseline age and proviral load (HR 6.74; $P = 0.008$).
Clinical implication: Formal assessment of erectile function should be part of the routine clinical assessment of HTLV-1-infected individuals, worsening erectile function should alert clinicians to the possibility of neurologic deterioration.
Strengths and limitations: This is the first prospective cohort study to describe the course of ED in HTLV-1-infected individuals. The small sample size and absence of seronegative controls are limitations.
Conclusion: ED is a slow progressive clinical manifestation of HTLV-1 infection and progression to severe ED is faster, in those with definite HAM/TSP, worsening erectile function in HTLV-1 carriers may precede the development of HAM/TSP.

T-1615:

RISK BEHAVIORS AND SOCIODEMOGRAPHIC CHARACTERISTICS OF HTLV INFECTION ON PEOPLE WHO USE CRACK IN MATO GROSSO DO SUL

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Objective: To investigate seroepidemiologic and molecular aspects of HTLV infection in people who use crack in Campo Grande (CG), Corumbá, and Ponta Porã, cities of Mato Grosso do Sul (MS).
Materials and Methods: From November 2013 to July 2015, 701 people who use crack were interviewed. Blood samples were collected from them, and the HTLV screening was performed by ELISA. Seropositive samples were confirmed through nested-PCR and sequenced by Sanger.
Results: Five individuals were anti-HTLV-1 positive and four of these were genotyped as Cosmopolitan (1a), subgroup Transcontinental (A). The HTLV prevalence found in this study [0.72% (CI 95%: 0.3-1.7%)] was similar to that observed in Brazilian blood donors. There was found no significant difference in prevalence between CG and the border cities (0.4 vs. 1.7%; p=0.07). Two participants lived in CG. The age range was 25-58 years. Four were male and three were self-declared as non-white. Regarding sexual practices, three reported no sexual activities in the past 6 months and the other two reported irregular use of condoms in the same period. Incarceration history was found in two positive individuals. Three had serological markers of Hepatitis B exposure, two were anti-HCV positive and one had positivity for anti-HIV-1
Conclusion: These results indicate HTLV infection circulation in the study population. Although the prevalence is similar to the Brazilian blood donors, many coinfections and risk behaviors have been found in most HTLV-1 positive participants. This scenario requires public health intervention and early diagnosis to control and prevent HTLV infection among this population.
Palavras-chave: HTLV, epidemiology, crack
Agências financiadoras: CAPES, CNPq, FUNDECT, UFMS.

T-1614:
HLTV IN THE EXTREME NORTH OF TOCANTINS: AN ANALYSIS OF THE HEALTH ADMINISTRATION IN THE PRENATAL SCREENING

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Brazil is considered the country with the absolute highest number of infected individuals by the Human T-Lymphotropic Virus (HTLV), with an estimation of 2,5 million HTLV-positive people. This research aimed at identifying the obstacles to HTLV screening in prenatal diagnosis in the extreme north cities of Tocantins. This publication is about an exploratory and qualitative study, which data were collected in august of 2022, approved by the ethical report: 58733622.7.0000.8023, through semistructured interviews with the mayors of the municipalities Augustinópolis (TO), Sampaio (TO), Praia Norte (TO) and Araguatins (TO), at the end submitted to content analysis. It was observed difficulties in the policy implantation, due to the lack of knowledge by the administrators, of financial resources and of benchmark to the diagnosis in the State of Tocantins. Out of the four researched municipalities, only one did the screening in pregnancies of high risk in prenatal, however, by the private health network. There was an agreement related to the necessity of evolving different actors in the structuration of policies of prevention and control of this STD. To this end, it was suggested the creation of a flow for the diagnosis and capacitation of health professionals from the municipalities. This work is expected to include HTLV in the governmental policies, aiming at understanding this process, contributing to the debate and coffering increased visibility about the implementation of policies linked to HTLV. It was noticed that HTLV is yet unknown by the health administrators making it necessary to mobilize investments in the area to the formulation and establishment of public policies that aim to the implementation of prenatal HTLV screening in the State of Tocantins.

Keywords: HTLV; Screening; Prenatal.

Agências financiadoras: Universidade Estadual do Tocantins (UNITINS)/Universidade Federal do Pará (UFPA)

T-1612:

SEX-BASED COMPARISON OF TH17/TH1 AND IL-22+ TH17 CELL FREQUENCIES IN HTLV-1-ASSOCIATED MYELOPATHY/TROPICAL SPASTIC PARAPARESIS (HAM/TSP) PATIENTS REVEALS HIGHER FREQUENCIES IN MEN

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HTLV-1 infection is associated with several inflammatory conditions, including a chronic neurodegenerative disease, HTLV-1-associated myelopathy/tropical spastic paraparesis (HAM/TSP). It is unclear why a minority of infected subjects develops HAM/TSP and because CD4 T cells are the main target of infection and play a role in regulating immunity to HTLV, they might be involved in HAM/TSP pathogenesis. This study aimed to analyze the participation of Th17 and Th22 $CD4^+$cells subsets in HAM/TSP subjects and HTLV-1 asymptomatic carriers (AC), according to gender, due to the substantial lack of studies relating gender biased nature of inflammatory conditions like HAM/TSP. Thirty (30) HTLV-1 AC (10 men and 20 women) and 18 HAM/TSP (6 men and 12 women) subjects were included in the study and Peripheral Blood Mononuclear cells (PBMC) were isolated and stimulated with phytohemagglutinin (PHA) for 24h. Th17 and Th22 $CD4^+$cells subsets frequencies were determined by flow cytometry and were similar between AC and HAM/TSP groups. A moderate positive correlation was observed between Th17 and Th22 frequencies ($p=0.03$; $r=0.38$) in AC group. In addition, according to gender, Th17/Th1 subset were increased in HAM/TSP men compared to HAM/TSP women ($p=0.03$), as well as IL-22-producing Th17 cells ($p=0,01$). When we combined AC and HAM/TSP in a single group (HTLV-1 infected individuals), according to gender, we observed that the frequencies of all Th17 cells subpopulations were increased in men compared to women. Further studies should be conducted in order to confirm these findings, but our results point to the importance of gender-specific therapeutics investigations targeting the immune system.

Keywords: HTLV-1; Th17; Th22.

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T-1611:

EXPERIENCE REPORT OF THE VISIT OF THE INTERSTATE TECHNICAL COOPERATION GROUP FOR THE IMPLEMENTATION OF THE HTLV CARE LINE

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Introduction: It can be observed that after more than four decades of the discovery of HTLV, Brazil is considered an endemic country for infection by the virus, a fact that characterizes a great challenge for public health (COOK, 2019).

Objective: Strengthen the implementation of the HTLV care line in the states of Bahia, Paraíba and Rio Grande do Norte.

Material and Methods: Articulation of the strategic agenda in Bahia with a view to instrumentalizing the other states in the implementation of the Care Line (LC). The experience took place from September 12 to 16, 2022, including visits to the following components of the LC: Directorate of Epidemiological Surveillance, HTLV Outpatient Clinic at Faculdade Bahiana de Medicina, Central Laboratory- Lacen Bahia, HTLV Outpatient Clinic in the city of Salvador and HTLVida (social movement). Meetings with a researcher from Fiocruz and the State Technical Group on HTLV, as well as participation in the Brazilian Congress on HIV/AIDS and related viruses.

Result – Visiting states understood the points that make up the HTLV LC, highlighting the importance of diagnosing the disease to outline the epidemiological profile in the territories. The impacts on the quality of life of people living with HTLV reinforce the need to implement comprehensive care in the health care network.

Conclusion: HTLV has become a priority agenda for states with a view to including HTLV as an agenda in Public Policies, in addition to promoting the strengthening of the interstate technical cooperation group.

Keywords: HTLV; Technical Cooperation; Public Policy.

T-1610

PREVENTION OF HUMAN T-LYMPHOTROPIC VIRUS TYPE I IN BREASTFEEDING: INTEGRATIVE REVIEW

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Introduction: The benefits of breastfeeding are undeniable in the nutritional, cognitive, emotional and immunological aspects of the baby, but some microorganisms, such as the human T-cell lymphotropic virus type 1 (HTLV-1) are transmitted through breast milk. HTLV-1 is the causative agent of the lymphoproliferative malignancy called adult T-cell leukemia/lymphoma (ATLL). Objectives: To discuss the effectiveness of alternative nutrition methods in preventing HTLV-1 when breastfeeding is strongly desired. Materials and methods: This is an integrative review, in which the following descriptors were combined: "HTLV", "Breast-feeding" and "Prevention" in the PUBMED and ScienceDirect databases to search for articles that fit the following criteria for inclusion: original articles published between 2012 and 2022. A total of 264 articles were obtained. Of these, 15 articles were selected. Results and Conclusion: The use of formula as nutrition is effective in prevention, but the major disadvantage is that it does not offer the benefits of breastfeeding. On the other hand, short-term breastfeeding for ≤3 months offers the advantages of breastfeeding, but it is a challenge to wean before 3 months, consequently increasing the risk of the baby being infected with HTLV-1. The use of frozen-thawed breast milk is not so attractive to the mother due to the delay when done at home, becoming an option for nursing mothers admitted to the neonatal intensive care unit. Therefore, it is concluded that the choice of postnatal nutritional regimen is an important factor associated with vertical transmission of HTLV-1, and that exclusive formula feeding is superior to other alternatives.

Keywords: human T-cell leukemia virus; vertical transmission; early postnatal nutrition

T-1609:

THE EFFECTIVENESS OF CURRENT INTERVENTIONS TO PREVENT HTLV-1 MOTHER-TO-CHILD TRANSMISSION

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Introduction: HTLV-1 has severe consequences on patients` health and may be transmitted from mother-to-child, mainly through milk. Strategies to prevent transmission are important, as there is no treatment or vaccine. Recently, policymakers from Peru and UK questioned the effectiveness of interventions to prevent mother-to-child transmission (MTCT).
Objectives: Identify interventions to prevent HTLV-1 MTCT and determine their effectiveness.
Methods: Systematic review of PubMed and government documents (20 countries) searching for strategies to prevent HTLV-1 MTCT. Meta-analysis of the effectiveness of avoidance of breastfeeding.
Results and Discussion: 87 papers were included, and strategies identified: exclusive formula feeding, short-term breastfeeding, freeze-thaw milk, pasteurization, maternal and infant antiretroviral drugs, caesarean section, early clamping of umbilical cord, screening of milk donors and avoidance of cross-breastfeeding. Avoidance of breastfeeding prevents 85% of transmissions (Risk ratio (95% Confidence Interval) = 4 (2.49-6.41)). This is recommended in Japan, Brazil, Colombia, Canada, Chile, Uruguay, USA, and regions of French Guyana. Policy in Brazil and Japan includes provision of formula. Whilst breastfeeding for <3 months doesn`t increase the risk of transmission compared to exclusive formula-feeding, concerns remain regarding the limited number of studies outside Japan, the lack of information on women having higher risk of HTLV-1 transmission and on the ability of women to discontinue breastfeeding. Additional interventions are plausible, but data on their effectiveness is limited. The acceptance of interventions was high (>90%).
Conclusion: There are highly effective and acceptable interventions to avoid HTLV-1 MTCT. These are recommended by many countries. Findings may guide healthcare professionals and support policymakers.

Keywords: HTLV, prevention, mother-to-child transmission, public policies

Funding: Internal funding Section of Virology, Imperial College London. GPT is supported by the National Institute of Health Research Imperial Biomedical Research Centre

T-1608:
ANTI-HTLV-1/2 PREVALENCE AMONG HOMELESS PEOPLE IN GOIÂNIA, CENTRAL BRAZIL

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Introduction: Human T-lymphotropic virus type 1 (HTLV-1) is the etiological agent of adult T-cell leukemia/lymphoma (ATL), HTLV-1-associated myelopathy/tropical spastic paraparesis (HAM/TSP), and other inflammatory diseases. HTLV-2 has been associated with a syndrome similar to HAM/TSP and other clinical manifestations. Homeless people are at increased risk for physical aggression, sexual exploration, and involvement in illicit activities. In addition, low levels of education, poor hygiene, low income, unemployment, malnutrition and limited access to health services increase the vulnerability of this population to sexually transmitted infections (STIs). However, there are no data on HTLV-1/2 infection among homeless individuals.
Objective: This is the first investigation to assess the anti-HTLV-1/2 prevalence among homeless persons lodged in a public shelter in Goiânia, Central Brazil.
Methods: This is a crosssectional study, in which 355 individuals served at a public shelter in Goiânia participated. They were interviewed about sociodemographic data and risk behaviors/practices for HTLV-1/2. Then, blood samples were collected and all serum samples were tested for anti-HTLV-1/2 antibodies by enzyme-linked immunosorbent assay (ELISA).
Results: Of the total participants, 81.4% were male, young (median: 36 years), single (59.4%) and self-declared brown (60.6%). More than half (53.4%) had five to nine years of study. The median length of stay in the shelter was 10 days. Five individuals were anti-HTLV-1/2 positive, resulting in a prevalence of 1.41% (95% CI: 0.46-3.26) for anti-HTLV-1/2 in the study population.
Conclusion: Although the results are still preliminary, they indicate a low endemicity of HTLV-1/2 infection in this marginalized population.

Keywords: HTLV, Epidemiology, Homeless Persons

Funding: United Nations Office on Drugs and Crime, in partnership with the Ministry of Health-STD/HIV/AIDS Coordination and Viral Hepatitis-call: 003/2013.

T-1607:
COVID-19 INCIDENCE IN HTLV-1 CARRIERS FROM A BRAZILIAN REFERENCE CENTER

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Objective: Verify the incidence of COVID-19 in patients infected with HTLV-1 with positive and negative diagnoses of HAM/TSP.
Materials and methods: This is a cross-sectional study of medical records from HTLV-1 patients attended between September 2021 and August 2022 in a Reference Center of Bahia. Data collection involved sociodemographic, clinical and biochemical information.
Results: This study evaluated 49 individuals living with HTLV-1, of which, 79.6% were female. The mean age was 51.7 ± 16.2 years. The main associated comorbidities were systemic arterial hypertension (38.8%), diabetes mellitus (14.3%) and dyslipidemia (8.1%). 34 patients reported using medications, being antihypertensive classes (12/34), antidepressants and anxiolytics (10/34) the most using drugs. Regarding the clinical profile, 57.1% of the individuals were classified as non-HTLV-1 Associated Mielopathy/Tropical Spastic Paraparesis (HAM/TSP), 28.1% as possible or probable HAM/TSP and 14.3% as HAM/TSP defined. The incidence of COVID-19 among these individuals was 14.3%, while the national incidence was 16.4% in the same period of our study. One patient reported severe symptoms and need for hospitalization during COVID19 infection. There was no significant correlation between gender ($p = 0.672$), age ($p = 0.441$) or clinical classification in HAM/TSP or non-HAM/TSP ($p = 0.096$) and the diagnosis of COVID-19.
Conclusion: Our study suggests that is no correlation between COVID-19 incidence and HTLV-1 infection.

Keywords: COVID-19; HTLV-1; Coinfection.

T-1606:

CLINICAL NEUROLOGICAL PROFILE OF HTLV-1 CARRIERS TREATED IN A REFERENCE CENTER OF BAHIA

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Objectives: Analyze the neurological clinical profile of patients with HTLV-1.
Materials and methods: This is a cross-sectional study of medical records from HTLV-1 patients attended between September 2021 and August 2022 in a Reference Center of Bahia. Data collection involved sociodemographic, clinical and biochemical information.
Results: This study evaluated 65 individuals living with HTLV-1, of which 81.5% were female. The mean age was 50.22 ± 16.23 years. Of the respondents, 36.9% had a diagnosis of systemic arterial hypertension, 16.9% of diabetes mellitus and 9.2% dyslipidemic. Use of medication was reported by 66.2%, being antihypertensive and antidepressants the most used drugs. Regarding signs and symptoms, 72.3% reported low back pain, 70.8% reported hand and feet paresthesia, 64.6% reported weakness in arms or legs, and 47.7% had signs of neurogenic bladder. During neurological physical examination, 18 patients showed paresis in the lower limbs, 100% in the proximal region and 61% in the distal segment. Nine patients presented paresis in the upper limb, with no significant difference between distal and proximal regions. Regarding the reflex examination, one patient had hyperreflexia and clonus in the upper limbs and eight patients had hyperreflexia in the lower limbs, four of these had clonus; 12.3% of patients presented Babinski's sign and 12.3% presented Hoffman's sign. Fourty-one patients were classified as non-HTLV-1 Associated Mielopathy/Tropical Spastic Paraparesis (HAM/TSP), 16 as probable or possible HAM/TSP and 8 as HAM/TSP defined.
Conclusion: Patients living with HTLV-1 presented multiples symptoms can suggest neurological impairments, including those classified as non-HAM/TSP, corroborating a wild neurological spectrum for HTLV-1.

Keywords: HTLV-1; Epidemiology; HAM/TSP.

T-1605:

LIPID PROFILE OF HTLV-1 INFECTED PATIENTS WITH AND WITHOUT EVIDENCE OF HTLV-ASSOCIATED MYELOPATHY/TROPICAL SPASTICS PARAPARESIS (HAM/TSP) IN BRAZIL HINTERLAND

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Objectives: To compare the lipid profile of HTLV-1 carriers with and without evidence of HAM/TSP.
Methodology: This is a cross-sectional study of clinical and laboratory profile data from brazilian patients classified as non-HAM/TSP, HAM/TSP Probable/Possible and defined HAM/TSP, treated between 2020 and 2022.
Results: We analyzed sixty-three individuals living with HTLV-1, forty-nine of which were female. The mean age was 50.94 ± 16.43 years. Eleven had co-infection (17.4%), 7 with syphilis (11.1%). Regarding the clinical profile, 42 (66.6%) were non-HAM/TSP, 6 (9.5%) possible or probable HAM/TSP and 15(23.8%) defined HAM/TSP. The mean total cholesterol was 191.49 ± 44.53 mg/dl, LDL 116.27 ± 43.38 mg/dl, HDL 46.29 ± 14.87 mg/dl, n-HDL 143.00 ± 44.53 mg/dl and triglycerides 146.11 ± 73.99 mg/dl. Defined HAM/TSP has a higher proportion of co-infection when compared to others. There was no gender difference between the groups. Age was higher in patients with HAM/TSP but without significant difference. Total cholesterol, HDL, LDL, n-HDL and triglycerides were higher in the groups with HAM/TSP but only with statistical difference in the latter. In turn, HDL rates were lower in groups with HAM/TSP.
Conclusion: More studies are needed to understand the development of HAM/TSP as a risk factor for changes in the lipid profile. Cardiovascular risk disease should also be addressed in those patients.

Keywords: HAM/TSP; HTLV-1; Lipid profile;

T-1604:

PREVALENCE OF HIV-1/HTLV-1/2 COINFECTION IN BELÉM (PARÁ)

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Introduction: Epidemiological studies show that HTLV-1/2 and HIV-1 share the same transmission routes, which facilitates the occurrence of co-infections. Objective: The present study aimed to detect the prevalence of HIV/HTLV coinfection in patients treated at the health care center for acquired infectious diseases.
Material and Methods: from October 2020 to June 2022, 250 patients were interviewed, a clinical-epidemiological questionnaire was applied and whole blood samples (4 mL) were collected from everyone. Blood plasma was used to screen for anti-HTLV-1/2 antibodies using an ELISA-type enzyme immunoassay (Murex HTLV-I+II, DiaSorin, Dartford, UK). Confirmation of infection was performed by real-time PCR assay.
Results: Of the 250 patients investigated, 164 were men (64.6%) and 86 (34.4%) were women. Regarding marital status: 38 (15.2%) were married, 198 (79.2%) were single, 55 (22%) were widowed and 6 (2.4%) were separated. Regarding the level of education: 58 (23.2%) had up to 8 years of schooling and 158 (63.2%) had more than 8 years of schooling. HIV-1/HTLV-1 coinfection was identified in a single patient (0.4%), female, 56 years old, brown, 8 years of schooling, with 3 children, income of up to one salary minimum, and is being treated for high blood pressure.
Conclusion: Because HIV-1/HTLV-1 co-infection is associated with variations in $CD4^+$ T cell counts and differentiated outcomes of acquired immunodeficiency syndrome (AIDS), early identification of this co-infection is necessary to offer better quality care and demonstrate the importance of including testing for HTLV as a routine in care services for acquired infectious diseases.

Keywords: HIV, HTLV, Epidemiology, Coinfection, Belém

Support: CNPQ/MS-SCTIE-DECIT and CAPES

T-1603

CLINICAL SYMPTOMS AND SIGNS IN ASYMPTOMATIC HTLV-1 INFECTED CARRIERS: EVALUATION DURING A FOLLOW-UP STUDY IN THE GIPH COHORT IN MINAS GERAIS STATE

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The HTLV-1-asymptomatic carriers may present a wider spectrum of neurological diseases without a full criterion of HAM/TSP, and can either present dermatological, ophthalmological, psychiatric and rheumatological signs and symptoms. The viral protein Tax is important to establish virus infection, causing cellular proliferation and immortalization. In this work was performed a follow-up study to understand the role of IgG and IgM anti-Tax in the HTLV-1 chronification. We evaluated 79 asymptomatic HTLV-1-infected carriers (305 samples followup ranging from 1.08 to 16.58 years [mean 5.62±4.5 years]) and age ranging from 14 to 70 years [mean 43,7±13 years]. They were followed by medical specialists and signs and symptoms commonly associated with HTLV-1 infection were reported. Using a Tax-indirect ELISA were detected IgG-antiTax and IgM-antiTax reactivity in 79.8% and in 49.3% of evaluated individuals, respectively and 58/79 (73.42%) had at least 1 sign or symptom by clinical category, usually with repetition in different phases of the follow-up. The most common symptoms were hyperreflexia, low-back pain, and muscle weakness (Neurology); chronic dermatitis, onychomycosis, and Tinea pedis (Dermatology); keratoconjunctive sicca and uveitis (Ophthalmology); depression and anxiety (Psychiatry); arthrosis and fibromyalgia (Rheumatology) which did not show any correlation with anti-Tax IgG or IgM. Several studies have found clinical conditions in asymptomatic carriers that impact quality of life, as well as the public health. Attention must be given to the registration and reporting of symptoms in "asymptomatic individuals" to support public policies.

Financial Support: CNPq, CAPES, FAPEMIG

Key-words: HTLV-1, anti-Tax, asymptomatic, disabilities

T-1602:

HTLV-1 AND HTLV-2 INFECTIONS IN PATIENTS WITH PARACOCCIDIOIDOMYCOSIS AND ASPERGILLOSIS IN SÃO PAULO, BRAZIL

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Background: HTLV-1 in patients with systemic fungal diseases is of great concern, since HTLV-1 is associated with immunosuppression and consequently with the development of opportunistic infections and a poor prognosis for other diseases. Previous study conducted in São Paulo, Brazil showed the presence of HTLV-1/-2 infections in cases of paracoccidioidomycosis and aspergillosis. Herein, we extend the study using more samples for analyses.
Materials and Methods: A total of 550 sera from a biorepository that had seropositive results for *Paracoccidioides* spp. (G1, n=312), *Histoplasma capsulatum* (G2, n=147), and *Aspergillus* spp. (G3, n=91) were analyzed for the presence of HTLV-1/-2 antibodies using enzyme immunoassay (HTLV-I+II Murex, Diasorin), Western blotting (HTLV Blot 2.4, MP Biomedicals), and line immunoassay (INNO LIA HTLV I/II, Fujirebio). Demographic characteristics were evaluated in each group.
Results: Different regions in São Paulo were sampled. Most samples were from males (77.8%). Mean age differences were observed between groups: patients from G1 and G2 had a similar mean age (44.2 and 44.3 years, respectively), while those from G3 were older (55.3 years). Screening detected HTLV-1/2 antibodies in six sera (1.09%; 95% CI: 0.44%–2.26%), with two borderline results. HTLV-1/2 was confirmed in three samples (0.54%; 0.14%–1.48%): one HTLV-2, male, 42 years, from G1 (0.32%; 0.02%–1.57%), and two HTLV-1, males, 51 and 58 years, from G3 (2.2%; 0.37%–7.07%).
Conclusions: HTLV-1 in two severe cases from G3 (lung bulla) allowed us to consider aspergillosis an opportunistic infection in HTLV-1-infected individuals. The identification of co-infection is important to better monitor and treat patients.

Keywords: HTLV-1, HTLV-2, severe fungal disease, aspergillosis, co-infection
Support: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Fundação de Amparo a Pesquisa do Estado de São Paulo (FAPESP), and Instituto Adolfo Lutz.

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T-1601:

DIFFUSION TENSOR IMAGING METRICS IN DIAGNOSIS OF HTLV-1-ASSOCIATED MYELOPATHY

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Objective: In the diagnosis of HTLV-1-associated myelopathy (HAM), while magnetic resonance imaging (MRI) is essential to exclude other diseases, its power is limited regarding HAM diagnosis, as only 30% of affected patients present with spinal cord atrophy. Diffusion tensor imaging (DTI) may enable the detection of damage in the white matter microstructure. Here, we quantitatively assess spinal cord damage using DTI and evaluate conventional MRI parameters of the spinal cord in HTLV-1-infected individuals. Methods: This cross-sectional study involved 33 HTLV-1 carriers, 28 patients with definite-HAM, and 11 seronegative healthy subjects (HS). Region-of-interest (ROI)-based fractional anisotropy (FA) and mean diffusivity (MD) measurements were performed in the upper thoracic and lumbar regions of the spinal cord. Thoracic index was defined as 1/ (anteroposterior diameter × transverse diameter) measured at the fifth 5th vertebral level. Receiver operating characteristic (ROC) curve analysis was used to determine optimal cutoff FA, MD, and thoracic index values. Results: Spinal cord atrophy was observed in 15 (53.6%) patients with definite-HAM. The area under the ROC curve in the thoracic spinal cord was 0.824 (95% CI, 0.716-0.932), 0.839 (95% CI: 0.736-0.942), and 0.838 (95% CI: 0.728-0.949) for FA, MD, and the thoracic index, respectively. Lower FA and higher MD values were observed in the definite-HAM group compared to HTLV-1 carriers and HS at the T5 vertebral level ($p < 0.01$). Conclusion: Complementary to conventional MRI, DTI analysis of the spinal cord and thoracic index determination can offer additional insight that may prove useful in the diagnosis of HAM.
Keywords: HTLV-1; HAM/TSP; HAM; DTI metrics

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T-1600:

HTLV INFECTION IN BRAZIL'S SECOND-LARGEST INDIGENOUS RESERVE

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Abstract: Mato Grosso do Sul (MS), Central Brazil, has the second-largest indigenous population in Brazil. However, there is no available data about HTLV infection in this group. We conducted the first investigation of HTLV-1/2 infection prevalence in the indigenous population from Jaguapiru and Bororó villages in Dourados City, MS. Therefore, the objective of this study was to provide the prevalence and molecular characterization of HTLV. For that, a total of 1,875 indigenous participated in the study. All the serum samples were screened by an enzyme-linked immunosorbent assay (ELISA) commercial kit for the presence of anti-HTLV-1/2 antibodies. Positive samples were confirmed by HTLV-1/2 Western Blot (WB) assay. The HTLV-1 5'LTR region was detected by nested PCR amplification and sequenced by Sanger. This study was approved by the Comissão Nacional de ética em Pesquisa (CONEP) under protocol number 2.000.496. Most of the study population declared belonging to Guarani-Kaiowá ethnicity (69.18%), 872 (46.51%), and 1,003 (53.49%) were from Jaguapiru and Bororó villages, respectively. The median age of participants was 31 years, and 74.24% were females. Two individuals were detected with HTLV-1 (0.1%; CI 95%: 0.1-0.2). The phylogenetic analysis revealed that isolates belong to the Cosmopolitan subtype and the Transcontinental subgroup (HTLV1aA). The low HTLV1 prevalence found in this study is like that observed among blood donors, and pregnant populations from Mato Grosso do Sul. The absence of HTLV-2 infection among these Brazilian indigenous communities would suggest a distinct behaviour pattern from other indigenous populations in Brazil.

Keywords: HTLV-1; Indigenous; Prevalence; Central Brazil

Funding: FUNDECT/CNPq

T-1598:

ASYMPTOMATIC HTLV-1-INFECTED INDIVIDUALS PRESENT WORSE EQUILIBRIUM PERFORMANCE COMPARED TO SERONEGATIVES

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Objective: To evaluate postural performance in HTLV-1 infection by means of posturography and Vestibular Evoked Myogenic Potential (VEMP). Methods: Postural assessment was performed in 30 uninfected individuals, 30 asymptomatic carriers and 30 HAM/TSP. VEMP was generated by binaural galvanic stimulation of 2mA/400ms and was recorded from the gastrocnemius muscles. Posturography was performed under five test conditions: eyes open, fixed platform; eyes closed, fixed platform; eyes open facing an optokinetic tunnel image, fixed platform; eyes open, foam surface; eyes closed, foam surface. Results were analyzed for vestibular, visual and somatosensory function. Results: The groups were similar in terms of sex and age. Regarding VEMP, the evoked potential was delayed in HTLV-1 groups compared to controls ($p<0.001$). HTLV-1asymptomatic group was different from the HAM group in the posturography tests with eyes open, but similar in the more complex tests (eyes closed and unstable surface). The HAM/TSP group presented the worst somatosensory ratio in relation to the other groups ($p=0.01$) and the posturographic parameters worsened dramatically in the conditions with eyes closed. Conclusion: Posturography and VEMP identified subclinical alterations related to equilibrium control in HAM, as expected, and in HTLV-1- asymptomatic carriers. Postural imbalance associated with HTLV-1 infection is not only caused by motor impairment, but also by somatosensory dysfunction, and seems to occur early in the spectrum of the HTLV-1 disease. HAM/TSP patients rely on vision to keep balance. Therefore, careful approach since the asymptomatic phase to emphasize adequate refraction, to stimulate physical exercises and to concern about falls prevention is essential.

Keywords: HTLV-1. Vestibular evoked myogenic potential. Posturography. Postural instability.

Funding: CNPq.

T-1597:

PREVALENCE OF KERATOCONJUNCTIVITIS SICCA (KCS) IN INFECTED BY TYPE 1 HUMAN T-CELL LYMPHOTROPIC VIRUS (HTLV-1): A SYSTEMATIC REVIEW.

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Background: HTLV-1 causes adult T-cell leukemia, tropical spastic paraparesis/HTLV1-associated myelopathy (TSP/HAM), and uveitis. The virus is also associated with Sjoegren syndrome and ophthalmologic manifestations such as keratoconjunctivitis sicca (KCS), which has multifactorial causes and can damage the ocular surface. Objective: To determine the prevalence of KCS in individuals infected with HTLV-1. Material and Methods: systematic review with meta-analysis performed according to PRISMA recommendations. PubMed/Medline, Embase, Web of Science, Scopus, Cochrane, Scielo, Lilacs, Scilit, Directory of Open Access Journals, OpenGRAY, Google Scholar, and the CAPES Theses and Dissertations Catalog databases were consulted. Included studies were cross-sectional and cohort studies that examined the presence of KCS in individuals infected with HTLV-1. Results: The search yielded 289 records for analysis. Of these, 7 articles were included. The overall pooled prevalence of KCS in HTLV-1 infected patients was 26% (CI 95%: 18%-36%) and was higher in individuals with HAM/TSP than in patients without myelophathy (PR pooled: 2.01; CI 95%:1.73-2.31). The combined use of the Rosa-Bengala, Schirmer, and breakup tests to diagnose KCS, using only 2 of the 3 altered tests, occurred in five studies. Three studies differentiated the number of KCS manifestations by sex and 2 by ethnicity. Conclusion: KCS occurs in one-quarter of patients infected with HTLV-1, with a higher prevalence in persons with HAM/TSP. Some findings require further analysis, such as prevalence between genders and ethnicities.

Keywords: HTLV-1. Keratoconjunctivitis Sicca. Systematic Review.

T-1596:

EXTENSION OF KNOWLEDGE ABOUT PEOPLE LIVING WITH HTLV AND THE RELATIONSHIPS WITH HUMAN OCCUPATION.

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INTRODUCTION: The human T-cell Lymphotropic Virus (HTLV) HTLV1/2 subtype has become epidemic in the State of Pará, Brazil. Despite this, there is still a lack of knowledge about the virus among healthcare professionals and academics. Therefore, there is an urgent need to educate the professionals that study and treat HTLV. OBJECTIVE: To describe actions currently carried out in academic and non-academic environments to disseminate information about HTLV and relations with human occupation of an extension project at the Federal University of Pará (UFPA). MATERIAL AND METHODS: This is a descriptive study of the experience report type. This work is an extension of a previous study entitled "Extension of Knowledge for Students of the Occupational Therapy Course on People Living with HTLV and Other Sexually Transmitted Infections and Relations with Human Occupation" approved by the PIBEX/PROEX Notice No. 01/2022 by UFPA. The project activities comprised in this study were carried out from April - August 2022. REPORT: Twelve thematic meetings were held to train the project team, with the participation of the members in conducting the discussions through seminars. Parallel to this, the group developed 6 extension actions with the community at the Municipal Health Unit of the Jurunas in Belém, Pará, and a strategic action alluding to the day to combat LGBTphobia, in which health services were offered. CONCLUSION: Extension actions provide essential experiences for undergraduate students and are important for the dissemination of information about HTLV.

KEYWORDS: University Extension. HTLV. Academic education. Occupational Therapy.

FUNDING AGENCY: PROEX/UFPA.

T-1595:

PREVALENCE OF HUMAN T LYMPHOTROPIC VIRUS 1/2 (HTLV-1/2) IN INDIVIDUALS INFECTED WITH HEPATITIS C VIRUS (HCV) IN BELÉM, PA, BRAZIL

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Introduction: Human T lymphotropic virus (HTLV) and hepatitis C virus (HCV) are endemic in Brazil, share similar transmission routes and are associated with serious diseases in humans. Objective: To determine the prevalence of HTLV-1/2 in HCV infected individuals and describe the sociodemographic characteristics and possible risk factors of the studied group. Material and Methods: An enzyme-linked immunosorbent assay (ELISA) was performed on 92 plasma samples from HCV-infected individuals from referral hospitals for the treatment of hepatitis. Reactive samples were confirmed by Western blot. Results: Among the individuals investigated, the majority were male (52%), married (49%), aged between 27 and 40 years (9%), 41 and 50 years (26%), 51 and 60 years (27 %), >60 years (24%). Three samples were seroreactive for HTLV-1/2 (3.3%) and 2 were confirmed for HTLV-1. Both were male. A 35-year-old individual reported drinking, surgery before 1993, tattooing, and injecting and snorting drug use. The other 66-year-old did not report any risk factors. Conclusion: A high prevalence of HTLV was observed in individuals infected with HCV, demonstrating the importance of screening for HTLV/HCV co-infection and identifying possible risk factors in the state of Pará.

Keywords: HTLV 1/2; Hepatitis C; Coinfection

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T-1594

ANALYSIS OF A 5-YEAR PERIOD (2017-2022) HTLV-1/2 TEST POSITIVITY IN PERNAMBUCO BLOOD DONORS.

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Objective: Estimate the positivity frequency of anti-HTLV (I/II) in blood donation candidates and blood donors of HEMOPE, in the period of January 2017 to June 2022.
Methodology: A retrospective study evaluating the anti-HTLV(I/II) through the chemiluminescent microparticle immunoassay (CMIA) (Abbot HTLVI/II) performed as a routine for screening donor candidates and blood donors of HEMOPE. The assay specificity and sensibility are >99,97% and 100% respectively. The sociodemographic data were obtained through the blood bank data base
Results: The positivity of the anti-HTLV (I/II) was 0,0795 % (458/575.936,00) in the period of january 2017 to june 2022. Highlighting that 62,23% didn't returned to repeat the test. In the positive population the higher frequency was 52,84% in the female gender, with mean of 38 years and 63,98 in mixed race. The positive population was from 60 cities of Pernambuco state, with the higher frequency in the city of Recife (31,44%) e 68,56% in the other Pernambuco cities.
Conclusion: The anti-HTLV (I/II) positivity of 0,0795% was lower were compared to the epidemiological bulletin of HTLV-I/II (M.S. 2020), that showed a prevalence of 0,22 in blood donors of Pernambuco state. Regarding the sociodemographic factors, the study showed a high frequency in female gender and mean age of 38 years , being similar with the risk factors detected in a study in Pará by Maneschy et al (2021). Furthermore, it is possible that the possible prevalence here is super estimated, since the individuals did not returned to the re-test protocol.

Palavras-chave: blood donors, anti-HTLV, prevalence, chemiluminescent, Pernambuco.

T-1593:
SPONTANEOUS LYMPHOPROLIFERATION LEVELS TO MONITOR PROGRESSION TO HTLV-1-ASSOCIATED MYELOPATHY.

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Keywords: HTLV-1, HAM, Spontaneous lymphoproliferation.

Background: It is known that spontaneous lymphoproliferation is high in HTLV-1 infection compared to uninfected. Despite scientific advances, determine biomarkers with cost-effective techniques in clinical practice is a challenge.
Objective: To quantify the spontaneous lymphoproliferation and proviral load (PVL) in adult asymptomatic carriers (AC), intermediate syndrome (IS), and HTLV-1-associated myelopathy (HAM).
Methodology: 99 patients being followed up at the Institute of Infectious Diseases "Emilio Ribas" were invited to participate in this study. HTLV-1 Proviral load and spontaneous lymphoproliferation were quantified in samples of asymptomatic (n = 34), IS (n = 19), and HAM patients (n = 46). Peripheral blood mononuclear cells (PBMCs) were cultured in the presence of carboxyfluorescein diacetate succinimidyl ester (CFSE) and anti-CD3, then acquired in the flow cytometer for detection and analyzed in FlowJo software. Statistical analysis were performed using the one-way ANOVA test in GraphPad Prism software.
Results: Samples from 99 patients were analyzed, and the mean of age was 54.4 years. 69.7% were women. Lymphoproliferation showed a significant increase in patients with HAM vs ACs ($p = 0.007$) and patients with IS ($p = 0.003$) compared with asymptomatic. PVL was similar among all the groups.
Conclusion: Spontaneous lymphoproliferation was able to identify the early stage of HAM, compared to PVL, which has no evidence in clinical follow-up. Cost-effectiveness should be improved to enable the implantation in laboratory clinical routine, but larger studies are warranted for this purpose.

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T-1592:
ALTERATIONS IN THE INNATE IMMUNITY CELLS RESPONSES IN HTLV-1 INFECTED INDIVIDUALS

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Keywords: Immunophenotyping, innate response, HTLV-1

Introduction: It is already known that HTLV-1, in addition to infecting T cells, is also capable of infecting cells of innate immunity such as dendritic cells and monocytes. However, the role of these cells in the progression of infection and the development of HAM is not known yet.
Objective: Analyze alterations in the profile of innate immunity cells in HTLV-1 infected individuals through immunophenotypic characterization.
Methodology: 18 patients being followed up at the Institute of Infectious Diseases "Emilio Ribas" were invited to participate in this study. Whole blood samples were collected from asymptomatic carriers (AC) (n=8), individuals with the intermediate syndrome (IS) (n=10) and health controls (HC) (8) and fresh-stimulated with R848, an agonist of TLR7/8. Then, antibody staining was performed to analyze the subpopulations of dendritic cells (cDC1, cDC2 and pDC), monocytes (classical, intermediate and non-classical) NK cells (CD56 bright/CD16- and CD56dim/CD16+) and the production of IFNα, IFNγ, and IL-12.
Results: From these analyses, it was possible to observe, a significant decrease in the cDC2 population in the IS group compared with the AC group (p=0,01), and in the classical monocyte population compared to the HC group (p=0,02). Moreover, the production of IFNα by pDC cells was also decreased compared to the HC group (p=0,03).
Conclusion: The alterations observed in this study point to a lower innate response in individuals with intermediate syndrome compared to asymptomatic carriers and healthy individuals.

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T-1591:

IMMUNOMODULATORY EFFECT OF THE C-TERMINAL PORTION OF THE TAX REGULATORY PROTEIN OF HUMAN T-LYMPHOTROPIC VIRUS TYPE 1 (HTLV-1)

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The present work aims at understanding the immunomodulation triggered by the cterminal portion of the Tax regulatory protein. In order to achieve that, an in silico analysis of epitope prediction on 9-amino acid peptides of the whole Tax protein sequence was carried out for distinct haplotypes. Data analysis on those selected haplotyperestricted Tax peptides demonstrated that the majority of immunodominant sequences are in the central and c-terminal region of the molecule. Tax immunodominant peptides restricted to four selected haplotypes can induce the production of IL-4 and IFN-y efficiently and robustly, however, no difference was observed amongst of haplotypes studied in silico. Finally, c-terminal portion of the HTLV-1 Tax protein (C-TaxRec) stimuli allowed for the in vitro confirmation of its immunomodulatory properties. In agreement with in silico analysis, increased IFN-y and IL-4 ($p<0.05$), as well as decreased TNF levels, were observed by peripheral blood mononuclear cells upon stimulation with C-TaxRec. These results clearly indicate the importance of specific portions of Tax in the regulation and activation of immune responses, paving the road for the use of C-TaxRec as a putative tool for the design of future immunomodulatory therapy and prevention of the high-severity HTLV-1-associated diseases.

Keywords: HTLV-1; Tax, c-terminal portion, immunology, peptides; human leukocyte antigen.

Financial agencies: Sistema Único de Saúde (SUS), Ministério da Saúde (MS), Fundação de Amparo à Pesquisa de Minas Gerais (FAPEMIG), Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).

T-1590:

THE IMPORTANCE OF CONFIRMATORY TESTING FOR HTLV IN THE SCREENING OF BLOOD DONOS

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Objective: To analyze HTLV test results in the blood donors screening at HEMOMINAS. Materials and Methods: Retrospective analysis (2018 to 2022) of the results of screening (chemiluminescence, CMIA) and confirmatory tests for HTLV-1/2 in initially reactive donors. The Architect rHTLV-1/2 (Abbott) or Alinity s HTLV I/II (Abbott) screening and HTLV Blot 2.4 (WB) (MP Biomedicals) or INNO-LIA HTLV-I/II (LIA) confirmatory tests were used (Fujirebio). Results: During the period of the CMIA Architect use, the mean percentage of positive/indeterminate donors for HTLV was 0.16% of the total screened donors. With the change to the CMIA Alinity, that percentage dropped to 0.06% (down 2.7x). Of the 198 samples tested with CMIA Architect and WB, 22.2% were positive, 5.6% were indeterminate, and 72.2% were negative. Of the 30 samples tested with CMIA Alinity and WB, 36.7% were positive and 63.3% were negative. And of the 132 samples tested with CMIA Alinity and LIA, 31.8% were positive, 11.4% were indeterminate, and 56.8% were negative. Only samples with ratio (light signal/cutoff) >60 in the CMIA kits were positive in the WB or LIA, except for one sample (ratio of 6.67 in the CMIA Alinity and confirmed as HTLV-1 in the LIA). Conclusion: The use of the CMIA Alinity significantly reduced the frequency of falsepositive in the blood donors screening. Both WB and LIA tests performed similarly in this population. The need to use confirmatory tests in the screening of blood donors is evident, as more than 50% of initially reactive individuals are confirmed as seronegative.

Keywords: HTLV, blood donors, confirmatory tests

T-1587:

A CASE OF ADULT T CELL LEUKEMIA/LYMPHOMA (ATLL) ASSOCIATED WITH GUILLAIN-BARRÉ SYNDROME

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Objectives: Report a case of ATLL associated with Guillain-Barré syndrome (GBS). Methodology: Analysis of medical records of the patient during the hospital admission. Results: We report a case of a 58-year-old male who was admitted to the hospital on the twelfth day of severe pain in the lower limbs, associated with symmetrical edema 2+/4+, constipation, oliguria, and respiratory distress. He denied fever and recent infections. On examination, Glasgow 15, muscle strength grade 1 in the lower limbs and 4 in the upper limbs. Normal spine and head CT. The patient escaped and returned on the seventeenth day of the disease's evolution with ascending flaccid tetraparesis associated with asthenia and a decline in his general condition. He was confused and agitated. Vesical distension, cyanosis in the extremities and global areflexia was identified. The leukogram identified 118,600 leukocytes, of which 40,324 were neutrophils, 1% of bassinets, typical lymphocytes of 43,882, atypical lymphocytes 30,836/mm3, with the presence of Gumprecht stains and 10% of undifferentiated cells. The cerebrospinal fluid was clear and colorless, with high protein level and normal leukocytes, characterizing GBS. Anti-HTLV antibodies reagent 110.77. A place in the ICU was requested an electroneuromyography and bone marrow biopsy as well, but the patient went into cardiorespiratory arrest and died. Conclusion: ATLL is a serious disease. Understanding its association with other pathologies can help to clarify its pathophysiological mechanisms.

Keywords: Guillain-Barré Syndrome; Human T-lymphotropic virus 1; Adult T-Cell;

T-1584:

HTLV-1 PROVIRAL LOAD IN DIFFERENT TISSUES INVOLVED IN MOTHER-TO-CHILD TRANSMISSION OF HTLV-1

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Introduction: HTLV-1 vertical transmission occurs mainly through breastfeeding, however, new infections have been reported even with the newborn deprived of breast milk. Others, have been breastfed for a long time and remain seronegative for HTLV-1. The aim of this study was to report the HTLV-1 proviral load in different tissues of HTLV-1 positive parturients. Methodology: The HTLV-1-infected women parturients are following at the Institute of Infectology Emilio Ribas. From November 2019 to June 2022, there were six cases of pregnancies at the HTLV outpatient clinic of the Institute of Infectious Diseases "Emilio Ribas", São Paulo, Brazil. We collected samples of peripheral blood, placenta, cord blood, of four parturients, colostrum of two parturients and milk at 30 and 60 days of one parturient. An pregnancy resulted in a miscarriage. We quantified the HTLV-1 proviral load of these samples by PCR. Results: The average age of parturients is 26.8 years, one of them has HAM and both had cesarean delivery. HTLV-1 proviral load peripheral blood (mean= 29 copies/104 cells), in the deciduous (mean=1.5 copies/104 cells), colostrum (mean= 1502 copies/104 cells), maternal milk 30 days (mean= 9 copies/104 cells). In villo, umbilical cord and milk 60 days, HTLV-1 was not detected by PCR. Conclusion: The proviral load of HTLV-1 in peripheral blood may differ in placental, cord blood and colostrum samples. It is possible that women with an undetectable viral load in peripheral blood, placental and cord blood have an elevated viral load in colostrum.

Keywords: HTLV-1 proviral load; placenta; cord blood; colostrum; milk.

T-1579:

HUMAN T-LYMPHOTROPIC VIRUS SEROPREVALENCE IN RIVERSIDE RESIDENTS IN PARÁ STATE, BRAZILIAN EASTERN AMAZON

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Introduction: Brazil is the country with the highest absolute number of individuals infected by the HTLV in the world and the Pará state has one of the highest frequencies of HTLV infection. Among the different groups, poor communities, such as those residing in islands, are the most affected due to the scarcity of preventive educational activities and health care. Objective: To investigate the seroepidemiology of HTLV infection in individuals living in islands in the state of Pará. Material and methods: A total of 301 blood samples were collected, from male and female individuals of 02 years old, who reside in Ilha das Onças, located in Baia do Guajará, belonging to the county of Barcarena-Pará. The search for specific anti-HTLV antibodies was performed using an enzyme-linked immunosorbent assay (ELISA) and positive samples have been confirmed by real-time PCR (qPCR) to differentiate the viral type. Results: To date, 162 samples have been tested, of which 55% from women. The most frequent age group were children and young people between 2 and 20 years old (35%) and adults between 41 and 60 years old (26%). All samples were negative in serological screening. Conclusions: The results are still partial, but the demographic and behavioral characteristics of communities with certain social isolation, reduced movement of people and difficult access, may influence the reduction of vulnerability to HTLV infection. Keywords: Riverside population, HTLV, Amazon.

Financial Support: Ministry of Health of Brazil; Fundação Amazônia de Amparo a Estudos e Pesquisa – FAPESPA.

T-1578:

SEROEPIDEMIOLOGICAL EVALUATION AND RISK FACTORS ASSOCIATED WITH HUMAN T LYMPHOTROPIC VIRUS INFECTION IN PEOPLE LIVING WITH HIV/AIDS IN BELÉM/PA, BRAZILIAN AMAZON REGION

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Introduction: HTLV and HIV are retroviruses that share the same transmission routes and the coinfection can directly influence disease progression or favor the development of neurological outcomes in infected individuals.
Objective: The objective of this study is to evaluate the prevalence of HTLV-1/2 infection in individuals living with HIV/AIDS (PLWHA) and the risk factors associated with these coinfections. Material and Methods: 400 samples of PLWHA free from antiretroviral therapy are being investigated and are being followed up at a specialized center located in the city of Belém, Pará, Northern Brazil. Epidemiological information was acquired through a questionnaire. Plasma samples were used for detection of specific anti-HTLV-1/2 antibodies through an enzyme linked immunoassay, and positive samples were confirmed by real-time PCR (qPCR) for viral type differentiation.
Results: So far, 184 samples of PLWHA have been investigated, most of them men (84%), homosexuals (54%), low family income (66%), no history of other STIs (56%) and do not use illicit drugs (69%). Of this total, one sample was positive for HTLV-2 (1/184; 0.5%). The co-infected individual is male, 40 years old, heterosexual, married, with complete high school, low family income, alcohol and illicit drugs user , history of other STIs, uses condoms, had sex with sex workers and reported that her mother had already been diagnosed with leukemia.
Conclusion: The results are still partial, but it is suggestive that economic, sexual behavior and sociodemographic characteristics can directly influence vulnerability to HIV/HTLV co-infection and that the prevalence of HTLV-2 is higher in PLWHA.

Keywords: Co-infection, epidemiology, risk factors

Financial Support: Ministry of Health of Brazil

T-1577:

IMPLEMENTATION AND OVERVIEW OF THE ASSISTANCE SERVICE FOR PERSONS LIVING WITH HTLV (SAPEVH) AT THE FEDERAL UNIVERSITY OF PARÁ

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Objective: To describe the creation and implementation of the Assistance Service for Persons Living with HTLV (SAPEVH) at the Federal University of Pará (UFPA) in 2020. Material and Methods: This is a descriptive study of the experience report type of the creation and implementation of the care service for people living with HTLV installed at the Virology Laboratory (LABVIR/UFPA).
Report: The service involves screening and confirmatory diagnosis of the infection followed by counseling and follow-up by a multidisciplinary health team. In addition to the index case, some family members are invited to attend infection screening. Specific protocols were also created for face-to-face and remote clinical and laboratory care for people diagnosed from the active search [1,673 residents of the metropolitan area of Belém (9 cases/0.54%), in 859 quilombolas in 11 communities in Pará (4 cases/0.47%) and 753 riversides (4 cases/0.53%)], free demand and referral of seropositive patients from the Blood Center of the State (HEMOPA). There was a predominance of women (71.43%), aged over 60 years (35.71%), married (57.14%), heterosexual (64.29%), with higher education (35, 71%), and who receive more than 2 minimum wages (64.29%). Of these, 14 are undergoing face-to-face monitoring, 15 will carry out a second blood collection, 14 had a negative result for the infection, and 3 are monitoring themselves. The main clinical findings were: low back pain, lower limb weakness, and ocular and dermatological problems. The remote services to be carried out (quilombolas and riverine people) are in the process of being implemented. Conclusion: SAPEVH is a service that provides long-term follow-up and has challenges for publicizing and inserting the service into the network.
Keywords: HTLV, Multiprofessional Assistance Service
Funding: CNPQ (#442522/2019-3; # 402412/2021-4)

T-1576:

EVIDENCE OF LYMPHOCYTIC ALTERATIONS IN XIKRIN DO BACAJÁ (KAYAPÓ) INDIGENOUS PEOPLE INFECTED BY HTLV-2

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Introduction: Human T-lymphotropic virus 2 (HTLV-2) was isolated from a patient with hairy cell leukemia, but its etiology with leukemia is still controversial, and there is no consensus that HTLV-2 can induce lymphocytic changes. Objective: The present study aimed to investigate the occurrence of lymphocytic alterations in samples of indigenous people infected with the human T-lymphotropic virus 2 (HTLV-2). Material and Methods: Blood smear slides from 19 indigenous people of the Xikrin do Bacajá ethnicity (09 men and 10 women), diagnosed with HTLV-2 infection by Western blot and qPCR, were stained using the Leishman method and analyzed for lymphocyte morphology. under an optical microscope. In order to compare the lymphocyte profile, another 25 slides from Xikrin individuals, seronegative for HTLV-1/2 infection, were used as controls. The study was approved by the National Research Ethics Committee - CONEP (CAAE: 27290619.2.0000.0018). Result: Of the total number of slides analyzed in the HTLV-2-infected group, six slides (31.6%) showed lymphocytic alterations (04 with atypical lymphocytes and 02 with nuclear alteration like flower cells), being statistically different from that observed for the non-infected group, in which no pattern of lymphocytic alteration was observed (p=0.007). Conclusion: The results suggest that HTLV-2 infection may be associated with lymphocytic alterations, reinforcing the need for a more detailed clinical study of people living with HTLV-2, especially the indigenous populations of the Amazon in which the infection is hyperendemic. Keyword: HTLV-2; lymphocyte; morphology, Kayapó

Funding: CNPQ # 402412/2021-4 and #442522/2019-3

T-1575:
ASSOCIATION OF *TLR7* RS179008 (A/T) POLYMORPHISM WITH HTLV-1-RELATED DISEASES IN WOMEN

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TLR7 is a cellular receptor that recognizes ssRNA and activates the production of TNF-alpha, IL-6 and IFN-alpha, a group of cytokines responsible to promote the innate immunological control against viral infections, including HTLV-1. Polymorphism *TLR7* rs179008 (A/T) is linked to the X chromosome and produces a non-functional protein. The present study investigated the possible influence of polymorphisms *TLR7* rs179008 (A/T) with the progression of HTLV-1 infection to associated diseases and included 143 HTLV-1 infected individuals (35 with HTLV-1 associated myelopathy [HAM], 11 with rheumatological manifestations, 1 with uveitis, 3 with more than one clinical diagnosis and 93 asymptomatic persons). Of these individuals, 97 were women and 46 men. Genotyping and proviral load were performed using a real time PCR. The comparison of genotype and allelic frequencies among symptomatic women were higher among those with genotypes AT and TT and polymorphic allele T, in comparison with asymptomatic women ($p= 0.0248$ e $p= 0.0250$, respectively). In addition, they were associated with a chance three times higher to the progression to disease (OR= 3.32; $p= 0.0126$ e OR= 3.00; $p= 0.0055$, respectively). HTLV-1 proviral load were not correlated with the polymorphism of *TLR7* rs179008 (A/T) in both groups investigated ($p> 0.05$). The results suggest that females carrying the polymorphism of *TLR7* rs179008 (A/T) have a higher chance of developing disease. The influence of the polymorphism can reduce the receptor activity and consequently, the recognition of ssRNA molecules of HTLV-1 and the activation of the adequate inflammatory response.

Keyword: HTLV-1; proviral load, TLR7, polymorphism.

Funding: CNPq

T-1588:

DETERMINANTS FOR THE HTLV-1 MATERNAL-TO-CHILD TRANSMISSION

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Introduction: The prevalence of Human T cell Lymphotropic Virus infection (HTLV) in pregnant women is unknown in Brazil. The occurrence rate of mother-to-child transmission of HTLV-1 (MTCT) can be 10 to 15% and there are no capable drugs to inhibit this transmission. Programs to prevent mother-to-child transmission of HTLV need to be implemented throughout the country, especially in endemic areas. Therefore, it is urgent to determine the risk factors for MTCT. The aim of this study was to assess the MTCT rate and identify the main risk and protective factors associated with this transmission.
Methodology: The study population comprised HTLV-1 positive mothers followed at Emílio Ribas cohort setup from 1997 to 2021. We conducted a retrospective investigation in the period of July 2020 to May 2022. The MTCT was determined through the positive serology of the mother or siblings, and confirmed by Westblot and or Nested-PCR. The mothers were interviewed and their fJorge Cassebiles examined to identify the risk factors of HTLV transmission to their offspring. Analysis of the women and prole characteristics was performed by the software Graph Pad Prism 7.0 and the chi-square test was used to calculate the odds ratio.
Results: A total of 292 positive mothers with an average age of 52.4 years were investigated so far. A total of 733 children were possibly exposed to HTLV-1 during pregnancy. Up to now, 366 (50%) of offspring were tested, 85% (312/366) of them were negative for HTLV-1 and 15% (54/366) were HTLV-1 positive. Mother's age over 30 years at gestation (OR 4.0; 95% CI [1.9-8.0]; *p value* 0.003); the child being female (OR 2.6; 95% CI [1.5-4.8]; *p value* 0.008) and breastfeed for a period longer than 6 months (OR 6.2; 95% CI [2.8-13.4]; *p value* 0.0001) were risk factors for MTCT. In contrast, not breastfeeding (OR 0.1; 95% CI [0.06-0.2]; p= 0.0001) is a protective factor for this route of transmission. Cesarean delivery (OR 0.4; 95% CI [0.1-0.9]; p= 0.05), in contrast, HTLV-1 proviral load, coinfections, mother's clinical condition and demographics variables were not differentially for the outcome.
Conclusions: The MTCT rate was 15% was observed in this study. Mother's age over 30 years at gestation increases the risk of MTCT by four fold, the female child has 2.6 fold to be reached, and breastfeeding longer than six months increases 6.2 fold of risk for MTCT. Cesarean delivery offers 0.4 fold protection, but it was not statistically significant. More importantly, non-breastfeeding decreases MTCT by 0.1 fold. These findings may help to implement management measures for pregnant women with HTLV-1 infection could decrease the burden of this virus in endemic areas.
Funding: FAPESP 2019/25511-4 to GP; HTLV grant 018/07239-2

T-1574:

TLR3 rs3775291 (C/T) POLYMORPHISM IS CORRELATED TO A LOWER RISK OF DEVELOPING HTLV-1 ASSOCIATED DISEASES

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TLR3 is an important receptor that recognizes dsRNA, a viral replication intermediate, and induces the immunological response against RNA and DNA viruses, including HTLV-1. Polymorphisms of *TLR3* genes are capable of altering the structure and function of protein expression, reducing the functional activity of signaling. The present study investigated the possible influence of polymorphisms *TLR3* rs3775291 (C/T) and rs5743305 (T/A) with the progression of HTLV-1 infection to associated diseases and included 145 HTLV-1 infected individuals (35 with HTLV-1 associated myelopathy [HAM], 12 with rheumatological manifestations, 1 with uveitis and 3 with more than one clinical diagnosis and 94 asymptomatic persons). Genotyping and proviral load were performed using a real time PCR. The comparison of genotype and allelic frequencies of *TLR3* rs3775291 (C/T) showed that polymorphic alleles and genotype T and TT were higher among asymptomatic in comparison with symptomatic individuals (p= 0.0344 e p= 0.0285, respectively) and with those with HAM (p= 0.0083 e p= 0.0182, respectively). The genotype and allele frequencies were not statistically different among the groups. The proviral load was lower among asymptomatic carrying polymorphic genotypes of *TLR3* rs3775291 (C/T) polymorphism (p=0.0186). This result suggests that *TLR3* rs3775291 (C/T) polymorphism, which is correlated with the modification of the receptor structure, may exert a control in virus replication and contribute to avoid the progression of HTLV-1 associated diseases, including HAM.

Keywords: HTLV-1; HAM, proviral load, TLR3, polymorphisms.

Funding: CNPq

T-1573:

PREVALENCE AND INTRAFAMILIAL INVESTIGATION OF HTLV-1 AND HTLV-2 INFECTIONS IN QUILOMBOLA COMMUNITIES IN THE STATE OF PARÁ

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Objectives: To describe the prevalence and intrafamily transmission of HTLV-1/2 in five quilombola communities in the State of Pará. Material and Methods: A total of 183 residents of the quilombola communities of Caeté (n=13), Bom Remédio (n=34) and Ramal do Piratuba (n=26) in the municipality of Abaetetuba; Tambaí-Açu (n=67) and São José do Icatu (n=43), municipality of Mocajuba, participated in the study. Blood samples were collected from all individuals for laboratory analysis. The enzyme immunoassay (Murex HTLV-I+II ELISA, Datarford, UK) was performed to detect antiHTLV-1/2 antibodies in plasma. To confirm the infection and differentiate the viral type, the Western blot - Wb (HTLV BLOT 2.4 DiaSorin) and real-time PCR approach were used. Results: Of the 183 investigated, HTLV-1 infection was confirmed by Wb in two individuals (1.09%), being 1 male aged 69 years and 1 female aged 54 years, both residents of the community of São José do Icatu (4.65%). qPCR detected proviral DNA only in man. We contacted 11 relatives of the infected woman in order to investigate the possible intrafamilial infection, but none of the relatives was positive for HTLV-1/2. Conclusion: The occurrence of HTLV-1 infection was observed in the community of Icatu, which reinforces the need for more epidemiological studies about this infection in isolated communities. The absence of intrafamilial infection in one of the diagnosed cases suggest that the infection occurred after the birth of their children and their relationships with their ex-partners. In this case, the non-detection of positivity in the qPCR may be due to a low proviral load.

Keywords: HTLV-1/2; Prevalence; Intrafamilial infection. Funding: CNPQ/MS/MCTI - 442522/2019-3

T-1572:

DETECTION OF HTLV-1A AT THE FIRST TIME IN THE MUNICIPALITIES OF MARACANÃ AND LIMOEIRO DO AJURÚ IN THE AMAZON REGION OF PARÁ, BRAZIL.

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Introduction: The Amazon region is considered endemic for HTLV-1/2, because these viruses have already been identified in different groups in this region such as indigenous people, urban population, blood donors, etc. Objective: To identify the types and subtypes of HTLV circulating in rural and riverside communities in the Amazon region of Pará. Material and Methods: Nine hundred seven blood samples from individuals living in rural and riverside areas in the state of Pará were analyzed for detection of antibodies to HTLV-1/2 by enzyme immunoassay (EIA) and subsequent confirmation by a line immunoassay (INNO-LIA) and real-time PCR (qPCR). For molecular characterization, the amplification of the LTR region by Nested-PCR was performed, then the sequencing by the Sanger method and then the phylogenetic analysis. Results: A prevalence of 0.8% (7/907) was found for HTLV 1/2, being 0.66% HTLV-1 and 0.11% HTLV-2. Among the seven samples confirmed as positive for HTLV1/2, it was possible to perform the sequencing of 5, in all of which the HTLV-1a subtype was identified. Conclusion: The results obtained report for the first time the prevalence of HTLV 1/2 in the municipalities of Maracanã and Limoeiro do Ajurú in the state of Pará, as well as the presence of the molecular subtype HTLV-1a, demonstrating the importance of monitoring the presence of these viruses in this region.

Keywords: HTLV, Molecular subtyping, Amazon region. Funding Agency: CNPq.

T-1571:

PREVALENCE OF HTLV-1 INFECTION IN THE POPULATION OF BELÉM (PARÁ)

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Introduction: Human T-lymphotropic viruses 1 and 2 are endemic in the Brazilian Amazon region, especially in the state of Pará, present in different population strata, such as indigenous peoples, pregnant women and blood donors. Despite the known circulation of both viruses in the state capital, the real prevalence remains unknown. Objective: To conduct an active search for HTLV-1/2 infection in the city of Belém in order to describe the prevalence and possible risk factors for infection. Material and methods: Peripheral blood samples (4 ml) from 264 individuals were collected and tested for anti-HTLV-1/2 antibodies by ELISA (Murex HTLVI+II, DiaSorin, Dartford, UK). Confirmation of infection was performed by real-time PCR assay. Results: Of the 264 individuals collected, 26.9% were males (71/264) and 73.1% were females (193/264). Serological screening detected 2 reactive individuals, but qPCR analysis confirmed HTLV-1 infection in only 1 individual (0.4%) female, aged 35 years. The evaluation of possible behavioral risk factors for infection revealed that the HTLV-1-infected subject is single, has a tattoo, was breastfed in childhood, is sexually active, uses condoms during sexual intercourse, had two pregnancies and breastfed. Conclusion: The results confirm the circulation of HTLV-1 in the urban population of Belém and emphasize the need to continue screening the infection in this population through a specialized public service.

Keywords: HTLV-1/2, Prevalence, Public Health

Funding: Conselho Nacional de Ciência e Tecnologia (CNPQ), Ministério da Saúde do Brasil (MS) e Organização Pan-Americana da Saúde (OPAS)

T-1568:

HIGH PREVALENCE OF HTLV-2 INFECTION IN INDIGENOUS COMMUNITIES OF THE BRAZILIAN AMAZON

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Objective: The present study aimed to investigate the prevalence of HTLV-1/2 infection in Indigenous communities in the Brazilian Amazon. Method: A total of 3,381 individuals (1,840 women and 1,541 men) were investigated, aged between 0 and 95 years (average 27 years), belonging to 16 ethnicities (Aikewara Suruí; Araweté; Asurini do Koatinemo; Munduruku; Ka'apor; Guajajara; Parakanã; Tembé; Amanayé; Gavião Parkatêjê; Juruna; Kuruaya; Arara; Xipaya; Xerente and Kayapó, subgroups: Xikrin do Bacajá, Kubenkokre, Gorotire, Kokraimoro and Kararaô). Blood samples were collected, and the plasma was screened for anti-HTLV-1/2 antibodies by enzyme immunoassays (ELISA). Real-time PCR (qPCR), Inno-Lia and/or Western Blot were used to confirm the infection. Results: The general seroprevalence was 8.3%, being 0.1% for HTLV, 0.1% for HTLV-1 and 8.1% for HTLV-2. The mean age of seropositive individuals was 42 years (ranging from 2 to 91 years). A higher prevalence of infection (p=0.0002) was observed in women (5.5%) when compared to men (3.0%). In both genders, individuals over 61 years of age were the most affected. Among the populations studied, HTLV-2 infection was more prevalent in the Kayapó, with 23.1% in the Kubenkokre subgroup, followed by the Gorotire (22.1%) and Xikrin do Bacajá (13.7%) subgroups. Conclusion: Our results confirm the high prevalence of HTLV-2 among indigenous peoples of the Brazilian Amazon, due to sexual transmission and breastfeeding. In addition, the founder effect, socio-geographical isolation, and small sample size may explain the absence of infection in some peoples.

Palavras-chave: HTLV-1/2, Indigenous communities, Brazilian Amazon.

Agências Financiadoras: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPQ 442522/2019-3)

Resumos extendidos

T-1625:

PERFIL DOS DOADORES DE SANGUE QUE DESENVOLVERAM ATLL (LEUCEMIA/LINFOMA DE CÉLULAS T DO ADULTO), O TEMPO PARA PROGRESSÃO PARA TRANSFORMAÇÃO NEOPLÁSICA, VIAS DE TRANSMISSÃO VIRAL E PREVALÊNCIA DE STRONGILOIDÍASE

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A associação entre a infecção pelo HTLV-1 (*Human T-cell lymphotropic virus 1*) e o desenvolvimento da ATLL (*adult T cell leukemia/lymphoma*) é bem estabelecida[1]. O contágio do vírus por meio da amamentação é tipicamente a via de transmissão mais comum em regiões endêmicas e a mais propensa à transformação neoplásica. Estima-se que aproximadamente 2,5 a 5% dos indivíduos infectados pelo HTLV-1 desenvolvam ATLL e são necessárias de quatro a seis décadas de infecção viral latente até o desenvolvimento da neoplasia T madura [2,3,4]. É mais comumente de fenótipo T-helper CD4+, embora algumas formas derivadas de células T-citotóxicas CD8+ tenham sido descritas. A classificação das formas clínicas segue os critérios de Shimoyama et al., com quatro formas: *smoldering*, crônica, linfomatosa e leucêmica/aguda[5].
O diagnóstico de ATLL se fundamenta no quadro clínico, na imunofenotipagem do sangue periférico e/ou biópsia do tecido comprometido, além da presença de rearranjo monoclonal do gene do receptor de células T (TCR). Deve-se demonstrar presença do HTLV-1 por testes sorológicos e moleculares. Habitualmente se utilizam critérios clínico-laboratoriais e patológicos propostos por Levine et cols. para o estabelecer-se o diagnóstico de ATLL[6]. Os pacientes são geralmente imunodeficientes, com predisposição a infecções bacterianas, fúngicas, parasitárias e virais oportunistas, tais como por pneumocistose, candidíase, citomegalovirose e strongiloidíase [7,8].
Sem dúvida alguma, existe uma necessidade urgente de identificar fatores associados à progressão do estado de portador assintomático do HTLV-1 para ATLL com o propósito de estabelecer formas de interromper esse processo antes que a neoplasia esteja totalmente instalada e, portanto, irreversível dada a característica altamente resistente de suas células malignas. Dessa forma é essencial se conhecer as características que possam estar relacionadas ao surgimento da ATLL.
Dentre os objetivos, realizamos avaliação epidemiológica de doadores de sangue em seguimento que desenvolveram ATLL, descrição de formas clínicas pelos critérios de Shimoyama, identificação das vias de transmissão viral e prevalência de Strongiloidíase. Também correlacionamos a via de transmissão viral com surgimento de ATLL, além do tempo de evolução de portadores assintomáticos para ATLL.

Material e Métodos: Estudo de coorte retrospectivo, unicêntrico de amostra consecutiva realizada por meio de análise de dados dos prontuários de pacientes atendidos no ambulatório de HTLV da Disciplina de Hematologia, Hemoterapia e Terapia Celular do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP).

Incluídos no levantamento prontuários de pacientes doadores de sangue que desenvolveram ATLL em algum momento do seguimento no período de janeiro de 1994 a setembro de 2022 com diagnóstico de infecção pelo HTLV-1. As variáveis estudadas foram demográficas (sexo, idade, naturalidade, cor, escolaridade, data do diagnóstico de HTLV e ATLL), laboratoriais com protoparasitológico de fezes, pesquisa de clonalidade T, por multiplex PCR, além de inquérito familiar e tempo de seguimento de desde a identificação anti-HTLV-1 positivo até o desfecho da ATLL.

Os pacientes incluídos possuíam anticorpo anti-HTLV-1 e 2, por sorologia com metodologias de ELISA e/ou quimioluminescência, além de exame confirmatório com identificação do tipo 1 por Western Blot e/ou PCR.O diagnóstico de ATLL foi realizado de acordo com as diretrizes da Organização Mundial da Saúde [9], pela presença de expansão de células T monoclonais CD3+CD4+CD25+ no sangue periférico identificada por citometria de fluxo e pesquisa de clonalidade T por análise de fragmentos do gene gama do receptor de células T ou biópsia de tumoral compatível com linfoma de células T periféricas, sorologia positiva para HTLV-1 confirmado por PCR e/ou western blot. A classificação da ATLL pelas fomas clínicas foi realizada pelos critérios de Shimoyama et cols. Os pacientes foram classificados nas formas *smoldering*, crônica, aguda e linfomatosa.[5]

As vias de transmissão foram definidas por história médica, com inclusão histórico de transfusão de hemocomponente antes de 1993, quando se tornou obrigatória triagem sorológica para HTLV-1 nos bancos de sangue no Brasil (Portaria Nº 1376 do Ministério da Saúde). A partir dessa data se assumiu que o risco de transmissão via transfusão sanguínea é extremamente baixo, sem dados nacionais. Ademais foi realizado o inquérito sorológico dos genitores, cônjuges, irmãos. Foram definidos como critérios definidores de transmissão via vertical/aleitamento materno: ter sido amamentado por qualquer período de tempo em mãe com sorologia positiva para HTLV-1. Na falta de dados maternos, ter sido amamentado e possuir pelo menos um irmão também amamentado e com sorologia positiva. Pela via parenteral foram aceitos apenas casos que tenham recebido transfusão de hemocomponentes até 19 de novembro de 1993 em todo território nacional, não ter sido amamentado ou se amamentado, ter mãe com sorologia negativa, além de parceiros sexuais com sorologia negativa para HTLV-1. Pela via sexual, ter parceiro atual ou prévio com sorologia positiva para HTLV-1, não ter recebido transfusão de qualquer hemocomponente até junho de 1993 e não ter sido amamentado ou se amamentado, mãe com sorologia negativa.

Por se tratar de um estudo cuja coleta de dados foi feita através de coleta retrospectiva de informações dos prontuários, foi realizada dispensa de termo de consentimento livre e esclarecido. Os riscos envolvidos ao paciente poderiam ser relacionados à quebra de sigilo de seu diagnóstico e, para evitar isso, os pesquisadores garantiram a confidencialidade dos dados, conforme termo anexado à plataforma Brasil.

O estudo foi aprovado pelo comitê de ética em pesquisa do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (CAAE: 08901019.0.0000.0068).

Resultados: Durante o seguimento identificamos 13 pacientes doadores de sangue que desenvolveram ATLL, 5 mulheres e 8 homens, com média de idade de 52 anos (mínima de 31 e máxima de 73 anos). A média de seguimento foi de 6,8 anos, variando de 0 a 17 anos, com mediana de 9 anos. Com relação à naturalidade, 7 eram naturais de São Paulo, 1 do Ceará, 3 da Bahia, 1 do Rio de Janeiro, 1 do Paraná. Contudo destes pacientes, 5 possuíam a genitora natural da Bahia, 3 de São Paulo e 1 do Japão. A naturalidade das mães dos demais pacientes não foi possível ser identificada. De etnias autodeclaradas, 6 se declararam brancos, 2 negros, 4 pardos e 1 amarelo.

No que diz respeito à escolaridade, 7 concluíram o primeiro grau, 3 o 2º grau e 3 possuíam nível universitário. Com relação à via de transmissão viral, foi possível identificar a via de contágio confirmada em 46,2% dos pacientes, com a amamentação como principal via (em 4 casos), seguidas pela sexual (1 caso) e transfusional (1 caso). Em 53,8% dos pacientes não foi possível identificar via de transmissão viral.

Sobre as formas clínicas, 6 pacientes possuíam ATLL forma smoldering e ao longo do seguimento, 1 deste evoluiu para forma linfomatosa e outros 3 para leucêmica. Foram identificados também 2 ATLL forma crônica. Das formas agressivas sem ocorrência prévia de forma indolente, foram descritos 3 pacientes com forma linfomatosa e 2 com leucêmica. Destes pacientes, os 4 com forma linfomatosa, 3 com forma leucêmica e 1 forma crônica evoluíram para óbito decorrente de ATLL. Com relação às formas agressivas, todos os pacientes com forma linfomatosa faleceram, mas da forma aguda 2 conseguiram realizar poliquimioterapia intensiva, seguida de transplante alogênico de medula óssea, ambos em remissão da doença até o momento.

Dos 13 pacientes avaliados, apenas 1 apresentou strongiloidíase disseminada, 45 anos antes do desenvolvimento da ATLL em paciente com transmissão através do aleitamento materno, dessa forma já com infecção pelo HTLV-1 na ocasião. com necessidade de internação hospitalar.

Discussão: A triagem sorológica para indentificação do anticorpo anti-HTLV-1 e 2 se tornou obrigatória em bancos de sangue do Brasil a partir de 1993 (Portaria Nº 1376 do Ministério da Saúde) e desde então houve um aumento crescente na identificação de pacientes com infecção pelo HTLV. A prevalência gira em torno de HTLV é 0,4 a 10,0 por 1,000 doadores de sangue[10].

A mediana de idade de incidência de ATLL é em torno de 58 anos (6º década de vida tal como encontrada em nossos casos com média de 52 anos) e relação homem/mulher de 1,5:1,0[2], estimativa muito próxima à encontrada no estudo de 1,6 homens por 1,0 mulher. Proporcionalmente foi encontrada elevada prevalência de ATLL entre naturais e filhos de mães da Bahia, já bem estabelecida como região de grande prevalência de HTLV/ATLL no Brasil[11].

A transmissão vertical ocorre predominantemente via amamentação, porém há evidências limitadas de transmissão antes do parto ou perinatal, com taxa de transmissão estimada de 3,9% a 27%. Estudos demonstraram que cerca de 22% das placentas de mães soropositivas para HTLV-1 estavam infectadas, com frequência de transmissão materno fetal de 7%. A diferença entre a taxa de infecção placentária e transmissão de linfócitos infectados via sangue do cordão umbilical sugere existência de mecanismos protetores contra a infecção pelo HTLV-1 na interface materno fetal[12]. Sabe-se que diferentes vias de transmissão associam-se a distintas doenças relacionadas ao HTLV-1. A ATLL ocorre principalmente em indivíduos que adquiriram o HTLV-1 via aleitamento

materno, enquanto que, por exemplo, a paraparesia espástica tropical se associa à via sexual. ATLL após transfusão de sangue é excepcional[13].

A ATLL crônica e a *smoldering* são formas indolentes e tem média de sobrevivência de 2-5 anos. Entretanto, ambas, podem evoluir para formas agressivas, tal como ocorreu na descrição de 3 pacientes de nossa casuística. Estima-se que o tempo médio de sobrevida nas formas agressivas, formas leucêmica e linfomatosa sejam de 9-12 meses e de 6-9 meses, respectivamente. A forma clínica determina o desfecho do paciente. Pacientes com a forma aguda apresentam doença agressiva, intensa leucocitose, presença de células linfóides anômalas de tamanho médio "*flower*-símile", hepatomegalia, esplenomegalia, hipercalcemia e desidrogenase lática (DHL) sérica elevada acima de 2 vezes acima do valor de referência. O tempo médio de sobrevivência é de 9-12 meses. Na forma linfomatosa, observa-se linfadenomegalia localizada ou generalizada e menos de 1% de células malignas circulantes. Seu curso é agressivo e sobrevida pobre, estimada de 6-9 meses. Nas formas *smoldering* e crônica, ambas indolentes, encontra-se linfocitose moderada com células neoplásicas circulantes. Na forma crônica, por definição, deve haver, pelo menos 4.000 células linfoides T anômalas circulantes por $mm^{3,}$ hepatomegalia, esplenomegalia e elevação de DHL $\leq$ 2 vezes o valor de referência[5,14]. O prognóstico adverso e letalidade elevada também foi corroborado no nosso estudo, visto que 61,5% dos pacientes evoluíram à óbito, marcadamente nas formas agressivas (7 dos 8 casos de óbito).

Tanto os portadores assintomáticos de HTLV-1 como pacientes com ATLL podem apresentar formas disseminadas da strongiloidíase devido à alteração da resposta imune com diminuição de imunoglobulina E, interleucina-4, interleucina-5 resultando no prejuízo do controle da infestação parasitária e predisposição à infecção grave[15]. Em nossa casuística, foi ilustrado caso do paciente com HTLV-1, na ocasião em forma assintomática, com quadro grave de strongiloidíase, demonstrando a predisposição à parasitose, mesmo sem a evidência do quadro oncohematológico associado.

O desenvolvimento da ATLL envolve o acúmulo de diversos eventos genéticos e epigenéticos anômalos nas células infectadas. Além disso, alguns autores demonstraram como possíveis gatilhos para a transformação maligna na ATLL, o longo e contínuo estímulo oncogênico viral, o número de linfócitos circulantes infectados, a carga pró-viral e o arrefecimento da imunovigilância tumoral[14].

A real prevalência da ATLL pode estar subestimada devido à curta sobrevida das formas aguda e linfomatosa. Além disso, a diferenciação de ATLL de outras doenças linfoproliferativas T-maduras com apresentação clínica semelhante é bastante complexa. Outro fator limitante é a indisponibilidade de técnicas laboratoriais especializadas e marcadores específicos que identifiquem a doença em estágio inicial ou também que identifique aqueles indivíduos com potencial de transformação em ATLL. É imperativo que se prossigam pesquisas para melhor entendimento da fisiopatologia e desenvolvimento da ATLL para assim ser possível estabelecer novas estratégias preventivas e terapêuticas capazes de erradicar a ATLL, proporcionando maior sobrevida aos pacientes.

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T-1599:

ASSISTÊNCIA DE ENFERMAGEM ACERCA DO HTLV NO BRASIL, COM ENFOQUE EM GESTANTES E LACTANTES: REVISÃO INTEGRATIVE

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Objective: to discuss the existing literature on nursing care regarding HLTV in Brazil, focusing on pregnant and lactating women. Material and methods: A integrative reviews based on articles indexed in databases such as: Scielo, PubMed, Google School and Ministry of Health- Brazil. The selected period of time for this study is from 2018 to 2022. Results: 2628 articles were found and only 11 of these were classified according to the inclusion criteria and subjected to exploratory readings, therefore subjected to thematic analysis. The main information was arranged in a table and categorized into three thematic axes: 1Professional nursing care to pregnant and lactating women; 2- The role of nursing in health education regarding vertical transmission. The main period of publications were the years 2019 (3), 2020 (3) and 2021 (3). The most discussed theme is axis 3, however the articles that focus on more than 2 axes are more pertinent to the review, demonstrating the attempt of a more comprehensive approach on HTLV. Conclusion: The lack of proper orientation and the little exposure of this subject in the media and scientific production, contributes to few health education actions that lead to a possible misinformation picture, favoring the perpetuation of the infection and transmission cycle. Thus, this integrative review showed that nursing should be integrated in the production of knowledge about HTLV, since the profession is directly linked to care.

Keywords: Breastfeeding; HTLV; Nursing assistance.

T-1580:

PEPTIDE SCREENING FOR DEVELOPMENT OF A RAPID DIFFERENTIAL TEST FOR HTLV-1 AND HTLV-2

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The Human T-lymphotropic virus (HTLV-1 and HTLV-2)-1 is associated with neoplastic and demyelinating diseases. HTLV-2 causes more marked and slowly progressive neurological changes, as well as secondary infections that impact the respiratory and urinary tracts. There are no effective treatments or vaccines. An efficient and widely available diagnosis is the best way to control the spread of both viruses. This work aims the development of diagnostic tests using differential peptides for HTLV-1 and HTLV-2, for production of a point of care (POC) test. Sequences of structural and nonstructural HTLV-1/2 proteins were analyzed in silico using BepiPred 1.0 software. Linear peptides (279) were synthesized on membranes and their reactivity evaluated by immunoblotting with pools of sera pre-characterized in commercial assays. From those, twelve chosen peptides synthesized in soluble form were evaluated by indirect ELISA in house, with sera from HTLV-1/2 positive individuals from Minas Gerais (GIPH), São Paulo and Pará cohorts. Two peptide pools were made and tested, one for HTLV2 (Sensibility: 77.78%; Specificity: 77.78%) and one for HTLV-1/2 (Sensibility: 94.12%; Specificity 91.67%). Two peptides for HTLV-2 had sensitivity and specificity higher than the pool, 83.33%/89.47% respectively, for both peptides. The HTLV-1/2 pool, however, had better performance than the individual peptides. New tests are in course to achieve the best conformation of peptides to construct new multiepitope chimeras to differentiate HTLV-1 and HTLV-2. Development of lateral flow immunochromatography (POC) tests is underway with a biotechnology company and will support the planning of surveillance actions.

Financial support: FAPEMIG, CNPq, CAPES, PRPq-UFMG, Fundação HEMOMINAS

Key words: HTLV-1; HTLV-2; Peptides; Diagnostics; Point of care.

T-1570:

TRANSCRIPTOMIC ANALYSIS OF PEOPLE LIVING WITH HTLV-1

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Objective: To obtain transcriptomic profiles from an exploratory bioprospecting by RNAseq in asymptomatic and HTLV-1 associated myelopathy (HAM) individuals. Material and methods: Individuals with a confirmatory diagnosis of asymptomatic HTLV-1 infection or with clinical indication of HAM, without treatment with antiretrovirals and/or glucocorticoids, were included. A control group of uninfected blood donors was used for comparison. RNA was extracted by chloroform-ethanol from peripheral blood leukocytes and previously preserved in trizol, followed by purification by PureLink RNA Mini Kit and qualitative analysis using the Agilent RNA 6000 Pico Kit. Samples with RNA Integrity Number (RIN) values greater than or equal to 8 were selected to compose a library that was prepared using the SureSelect Strand-Specific RNA Library Prep System kit and sequenced using the NextSeq 500 platform using the NextSeq 500 kit/ 550 High Output Kit v2.5 (300 Cycles). Data were analyzed following the miARma-Seq pipeline (miRNA-Seq And RNA-Seq Multiprocess Analysis), using edgeR software for differential expression analysis. Results and conclusion: Ribosomal proteins were overexpressed in the asymptomatic and HAM groups; some MHC/ HLA and chemokine genes were downregulated in both groups. All the upregulated genes in the asymptomatic group were maintained in the HAM group, and differential expression was observed mainly for immune response genes only in the HAM. The data point to some genes that may be key in the pathogenesis and control of HTLV-1 infection. Keywords: HTLV-1, Asymptomatic, HAM, transcriptome, RNAseq, Gene expression.

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