

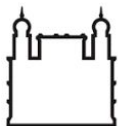
Webinário

Vírus linfotrópico de células T humanas (HTLV): a ameaça silenciosa e suas manifestações neurológicas

30 Nov, 2023, 13:00 GMT/10:00 BR/AR

Registre-se

Tradução simultânea
PT-ESP-ING



Ministério da Saúde

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Panel

Chair: Augusto César Penalva de Oliveira - Supervising Physician, Neurology Medical Team, Emílio Ribas Infectious Diseases Institute, Brazil

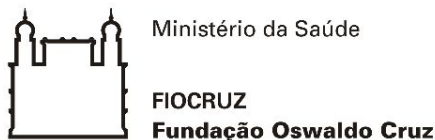
Steven Jacobson - Senior Investigator, Viral Immunology Section, Neuroimmunology and Neurovirology Division (NND), National Institutes of Health (NIH), USA

Lucia Brito - Neurophysiologist, Reference Center for the Care of Patients with Demyelinating Diseases, Restauração Hospital, Ministry of Health, Brazil

Carlos Pardo - Director, Johns Hopkins Myelitis & Myelopathy Center, Baltimore, Maryland, USA

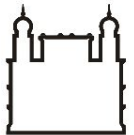
Clarice Neuenschwander - Senior Researcher at the Laboratory of Virology and Experimental Therapy, Fiocruz Pernambuco, Fiocruz, Brazil.

Cristiane Campello Bresani – Senior Researcher at the Laboratory of Virology and Experimental Therapy, Fiocruz Pernambuco, Fiocruz, Brazil.



Resources

- <https://portal.fiocruz.br/en>
- <https://fiocruz.tghn.org/>
- <https://lac.tghn.org/>
- <https://www.instagram.com/HTLVBrasil/>
- <https://www.gov.br/aids/pt-br/assuntos/ist/htlv>
- <https://fiocruz.tghn.org/health-topics/neuroinfeccoes/grupo-neuroinfecoes/>



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Neurological manifestations of HTLV infection

Dr Lucia Brito, MD

Reference Center for the Care of Patients with Demyelinating
Diseases, Restauração Hospital, Brazilian Ministry of Health, Brazil

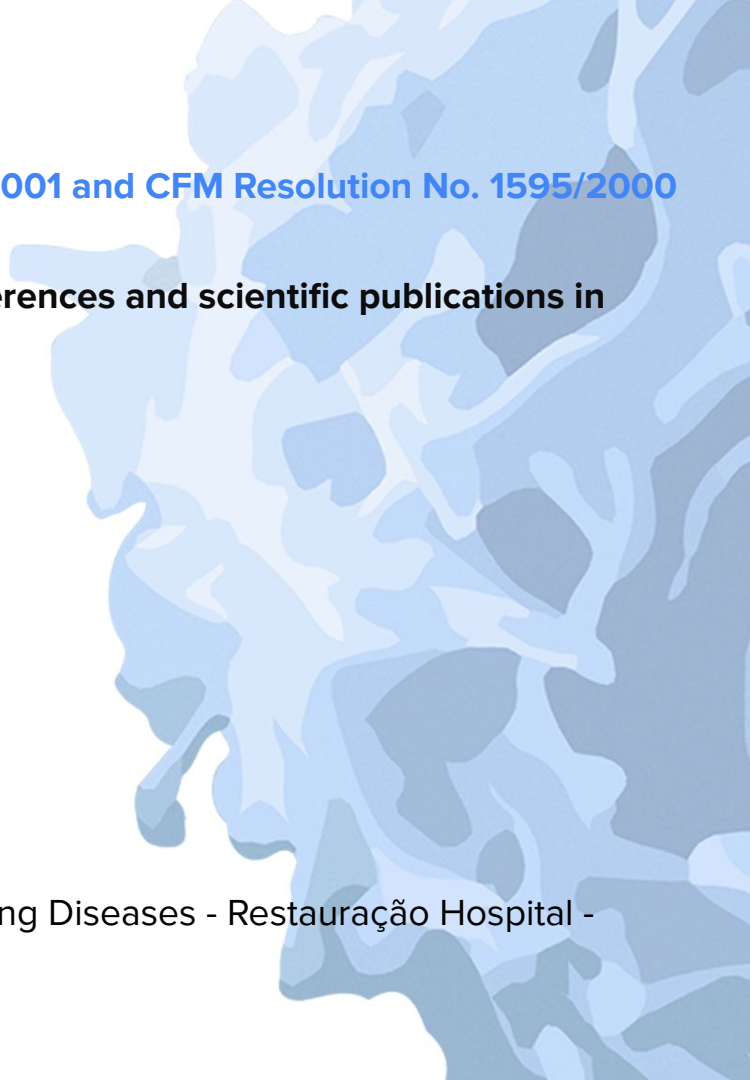


CONFLICT OF INTEREST

ANVISA Resolution No. 102 of 30/11/2000 republished on 01/06/2001 and CFM Resolution No. 1595/2000

Institutions that supported lectures, research presented at conferences and scientific publications in 2016-2023:

- Merck Serono
- Bayer Schering
- Baxter
- Novartis
- Teva
- Biogen
- Genzyme/Sanofi Aventis
- Brazilian Academy of Neurology
- Paraná State Government
- University of Liverpool and Glasgow (ZIKA PLAN)
- State Reference Center for the Care of Patients with Demyelinating Diseases - Restauração Hospital - Pernambuco State Government.

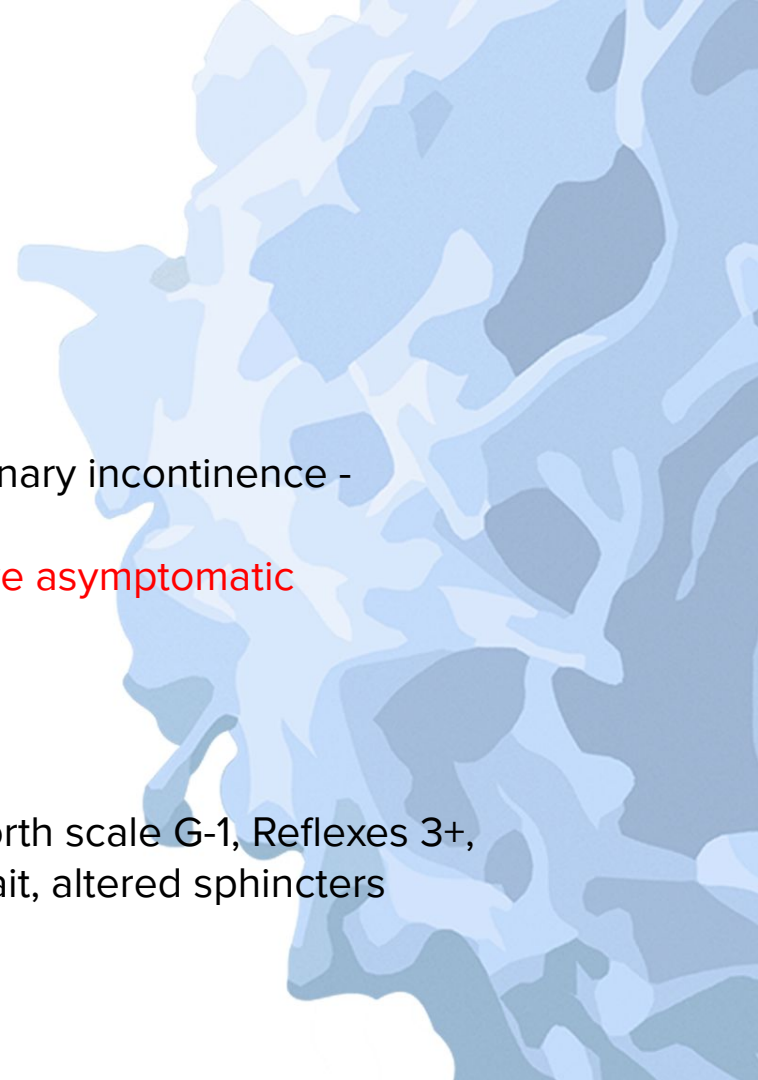


CLINICAL CASE

- First appointment - 03/May/2003 – LRS
- BD- 30/March/1981 (22 years old)
- High school
- From Recife - Non-Caucasian

- In 1999 (18 years old) motor complaint in lower limbs, urinary incontinence - **progressive condition**
- **Father with positive symptomatic HTLV. Mother – positive asymptomatic**
- **Patient was breastfed**

- **Normal clinical examination**
- **Neurological examination** - Lower limbs (MRC 4, Ashworth scale G-1, Reflexes 3+, hypopalesthesia), bilateral clonus feet, spastic paretic gait, altered sphincters



RESEARCH AND MANAGEMENT

1999

- Positive western blot test on serum for HTLV
- Other serological tests normal
- Urodynamics - detrusor hyperactivity, decreased bladder capacity, normal bladder compliance and sensitivity
- Symptomatic treatment, monthly MTP
- Periodic - densitometry, ophthalmologic evaluation, TB application



DIAGNOSTICS

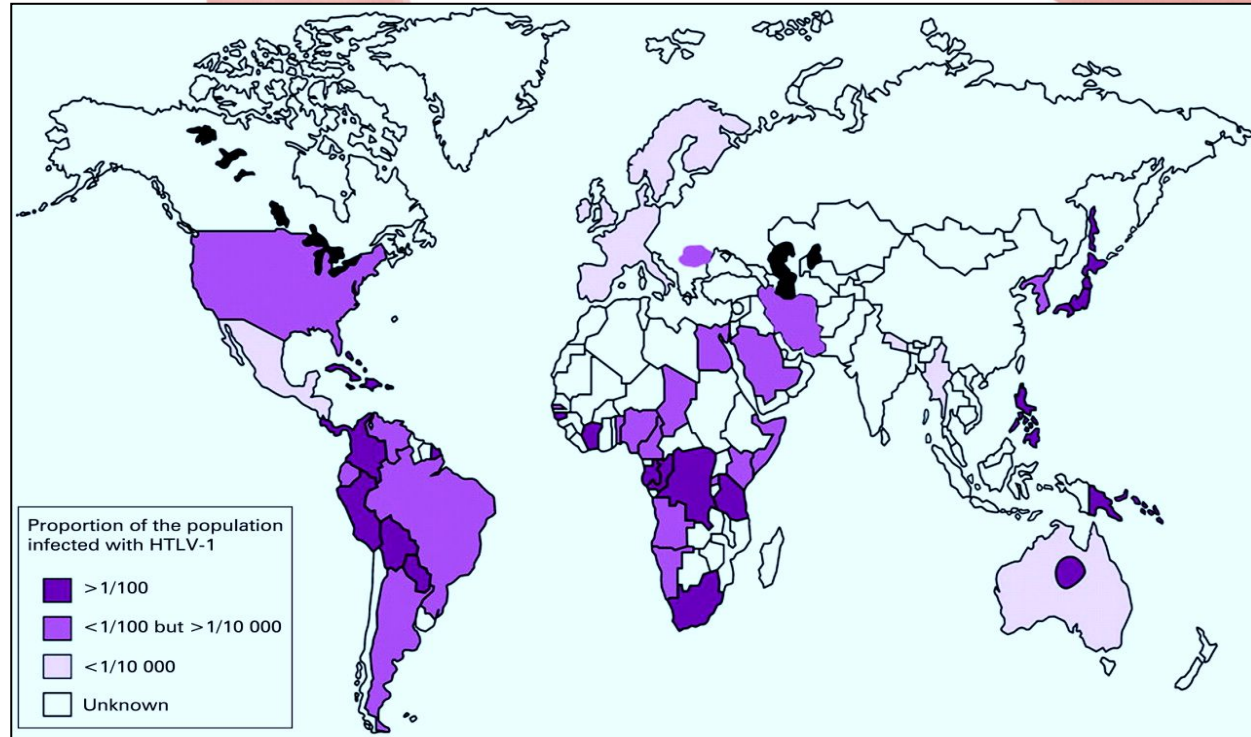
- ❖ **Syndromic** - bilateral pyramidal syndrome, lower limbs hypopalesthesia, sphincters
- ❖ **Topographical** - thoracic spinal cord
- ❖ **Etiological** – viral
- ❖ **Nosological** - **HTLV myelopathy**



EPIDEMIOLOGY OF INFECTION

20 to 40 million
infected worldwide

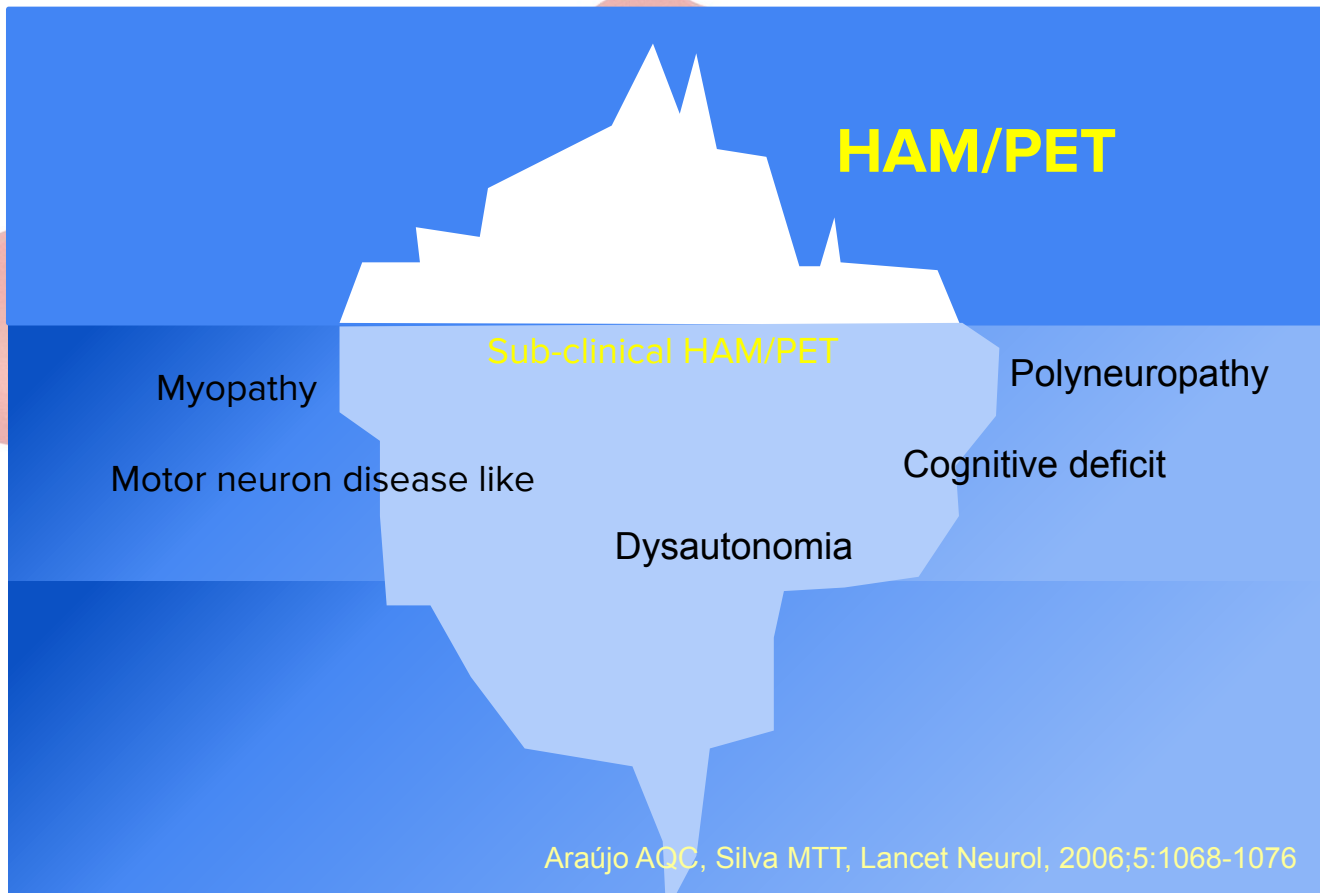
Approximately 4%
will manifest
HAM/PET



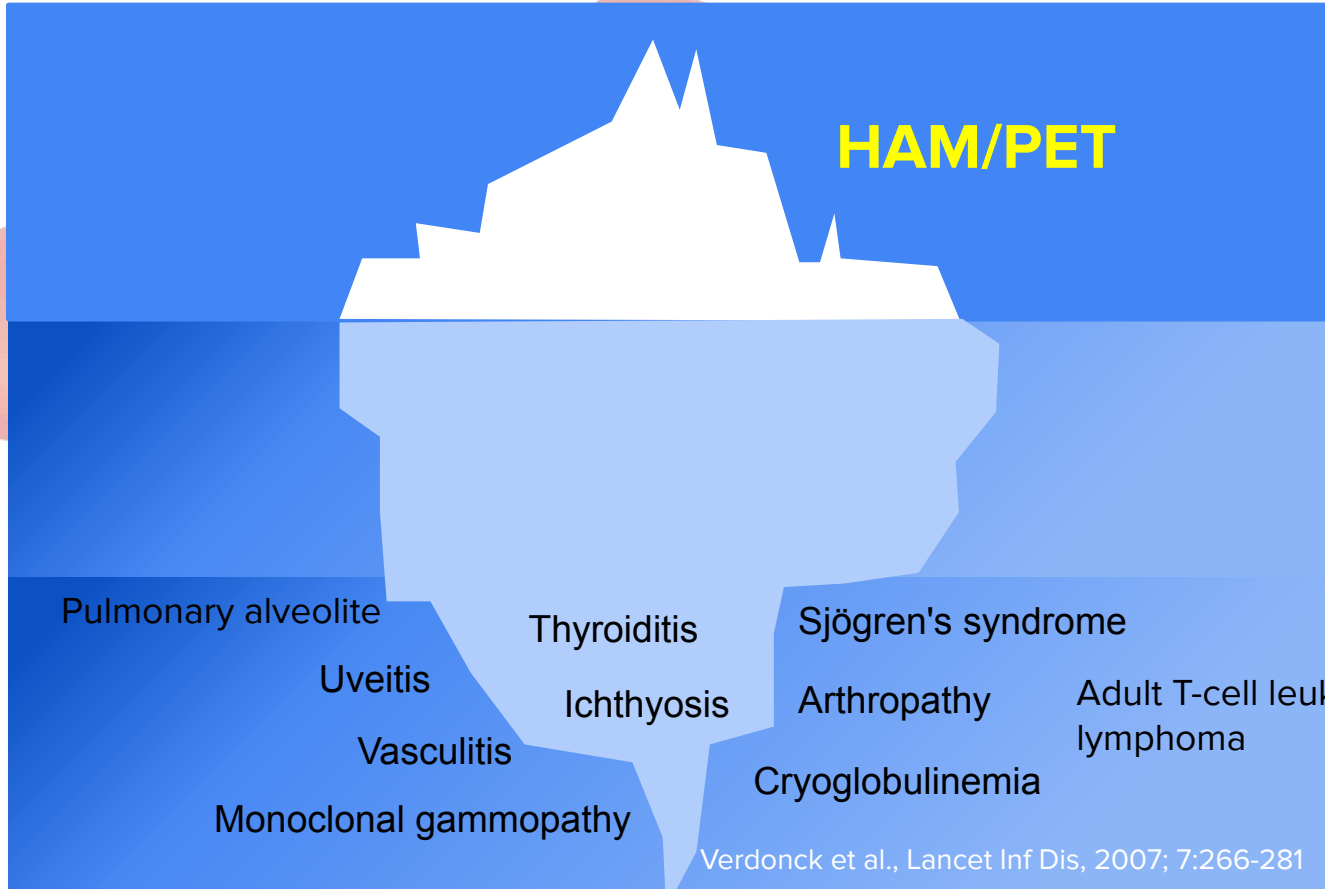
EPIDEMIOLOGY OF INFECTION

AUTHOR	YEAR	PLACE	NUMBER OF PATIENTS	PERCENTAGE
Tanajura D, et al.	2009	Salvador - BA	407	16,1
Grassi MFR et al.	2011	Ceará e Bahia	281	32,7
Slater CMSA et al.	2012	Rio de Janeiro - RJ	128	26,0
Castilhos RM et al.*	2012	Porto Alegre - RS	38	28,9
Adry RARC et al. [†]	2012	Bahia e São Paulo	45	100,0
Sequeira CG et al. [‡]	2012	Belém – PA	13.382	0,3
Starling ALB et al.	2013	Belo Horizonte - MG	87	100,0
Ferreira MLB	2013	Recife – PE	163	100,0

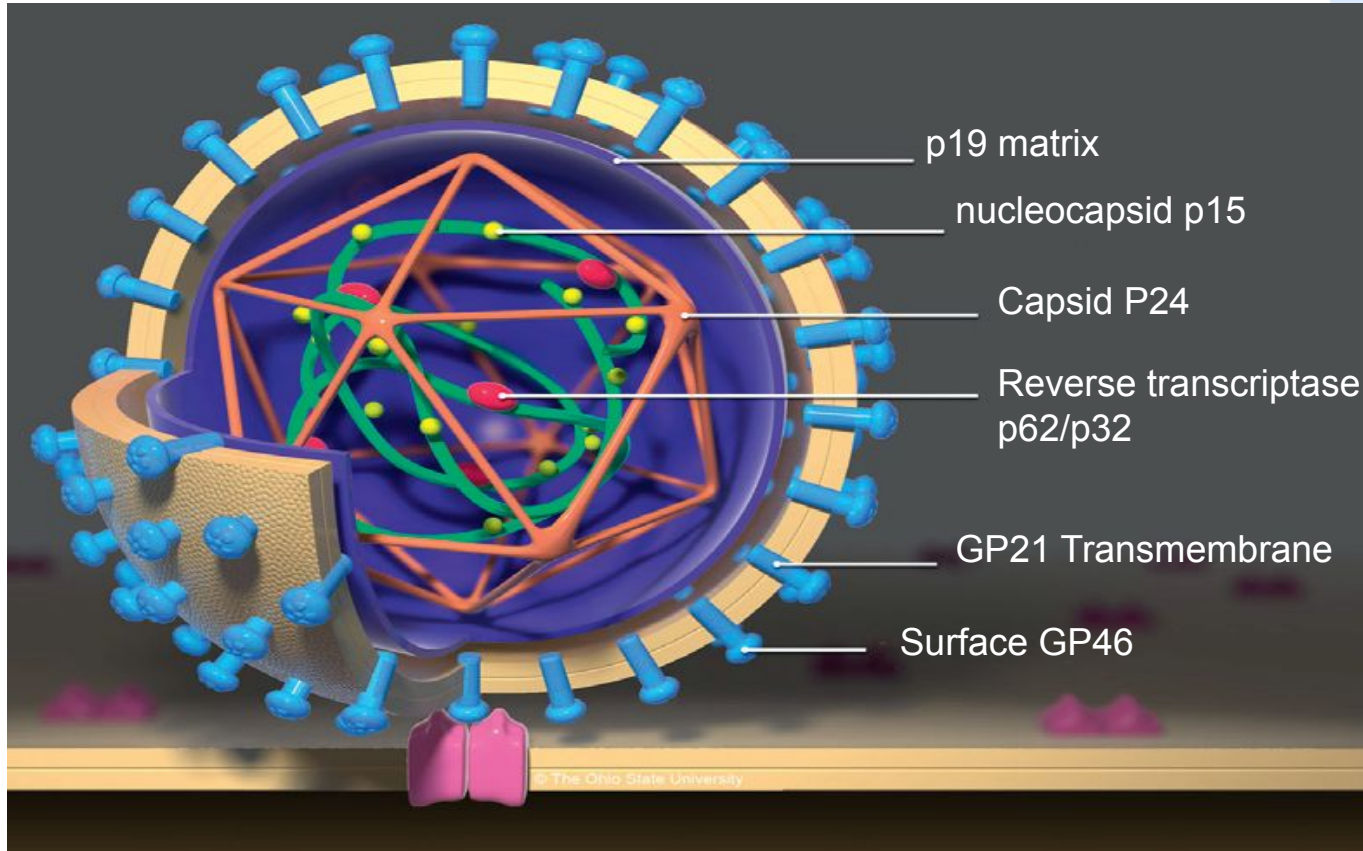
NEUROLOGICAL COMPLEX



CLINICAL COMPLEX



The HTLV-1 virus

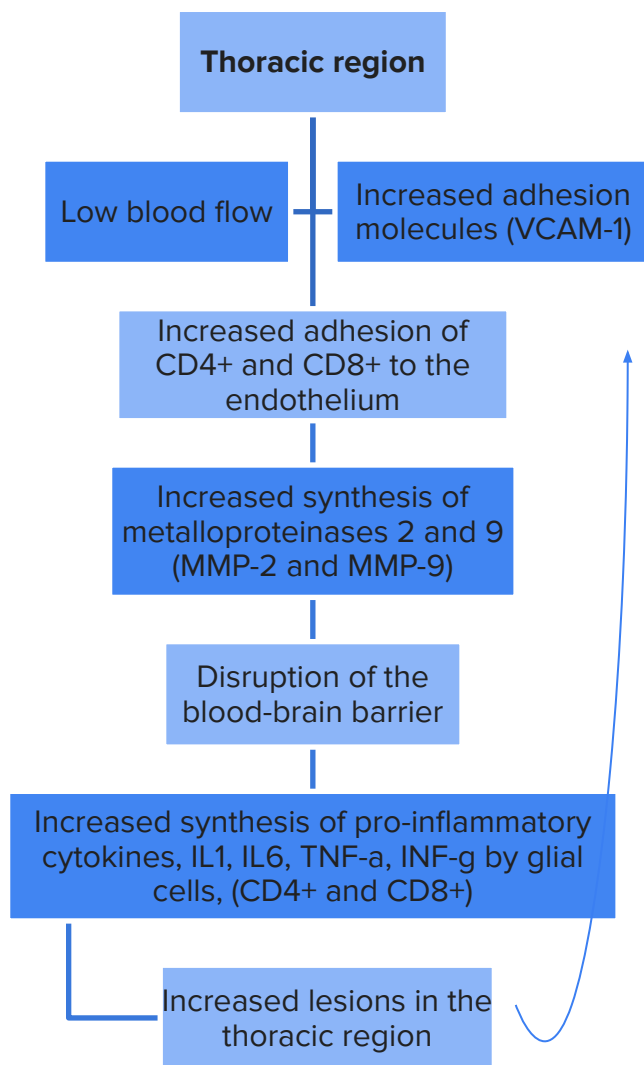


**C virus, enveloped
double-stranded
RNA**

Family Retroviridae

**Subfamily
Orthoretroviridae**

**Genus
Deltaretroviridae**



SPINAL CORD INVOLVEMENT

Carod-Artal EJ. Rev Neurol, 2009;48(3):147-155. Martin F, Taylor GP. AIDS Rev, 2011;13:161-170. Osame M. J NeuroVirology, 2002;8:359-364. Nozuma S., Kubota R., Jacobson S. J. Neurovirology, 2020; Oct; 26(5)652-663

DIAGNOSTIC CRITERIA

Presence of HTLV-1 antibody in serum or CSF confirmed by Western blot or PCR

Exclusion of other mimicking diseases

- Definitive Diagnosis
- Probable Diagnosis
- Possible Diagnosis



Criteria for suspicion of diagnosis in a non-endemic area

Clinical features

Risk factors for HTLV-1

- Being born in an area endemic for the virus
- Having a sexual partner from an endemic area
 - Descent from an endemic area

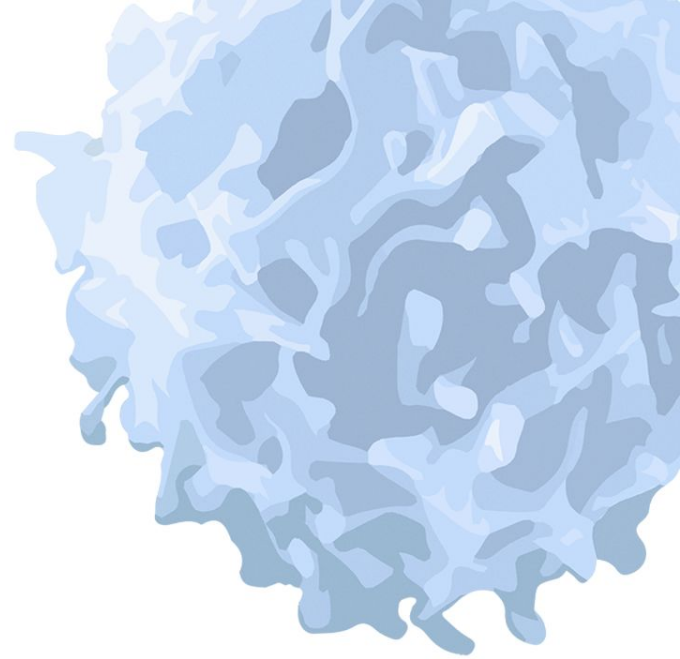


RESEARCH

Clinical and neurological
examination

Complementary
research

Assessment of the degree of
disability



NEUROLOGICAL EXAMINATION



AFFECTED FUNCTIONAL SYSTEMS

PYRAMIDAL

Spasticity
Exalted reflexes

CEREBELLAR

Ataxia

SENSORY

Paresthesia
Dysesthesia
Alteration of deep
sensitivity

SPHINCTERIC

Urinary
Anal

PERIPHERAL NERVES

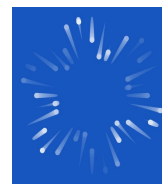
Complaint of distal
sensory disturbance

MUSCLES

Myopathy



LESS FREQUENT NEUROLOGICAL MANIFESTATIONS



ISOLATED SIGN

Hand tremor
Absence or depression
of patellar

CRANIAL NERVES

Optic atrophy
Nystagmus
Deafness
Other deficits

OTHER SYMPTOMS

Seizure
Cognitive Impairment
Dementia
Altered consciousness

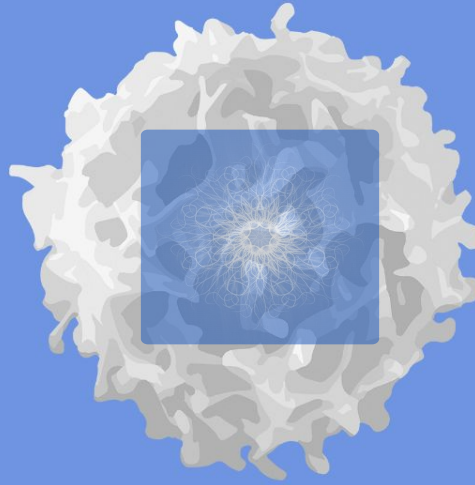
COMPLEMENTARY NEUROLOGICAL INVESTIGATION - OLIGOSYMPOMATIC AND SYMPTOMATIC PATIENTS

MRI
CSF
Electromyography
Biochemical dosages, viral tests

Urinary tract ultrasound
Urodynamic study
Tilt table test



ASSESSMENT OF DISABILITY

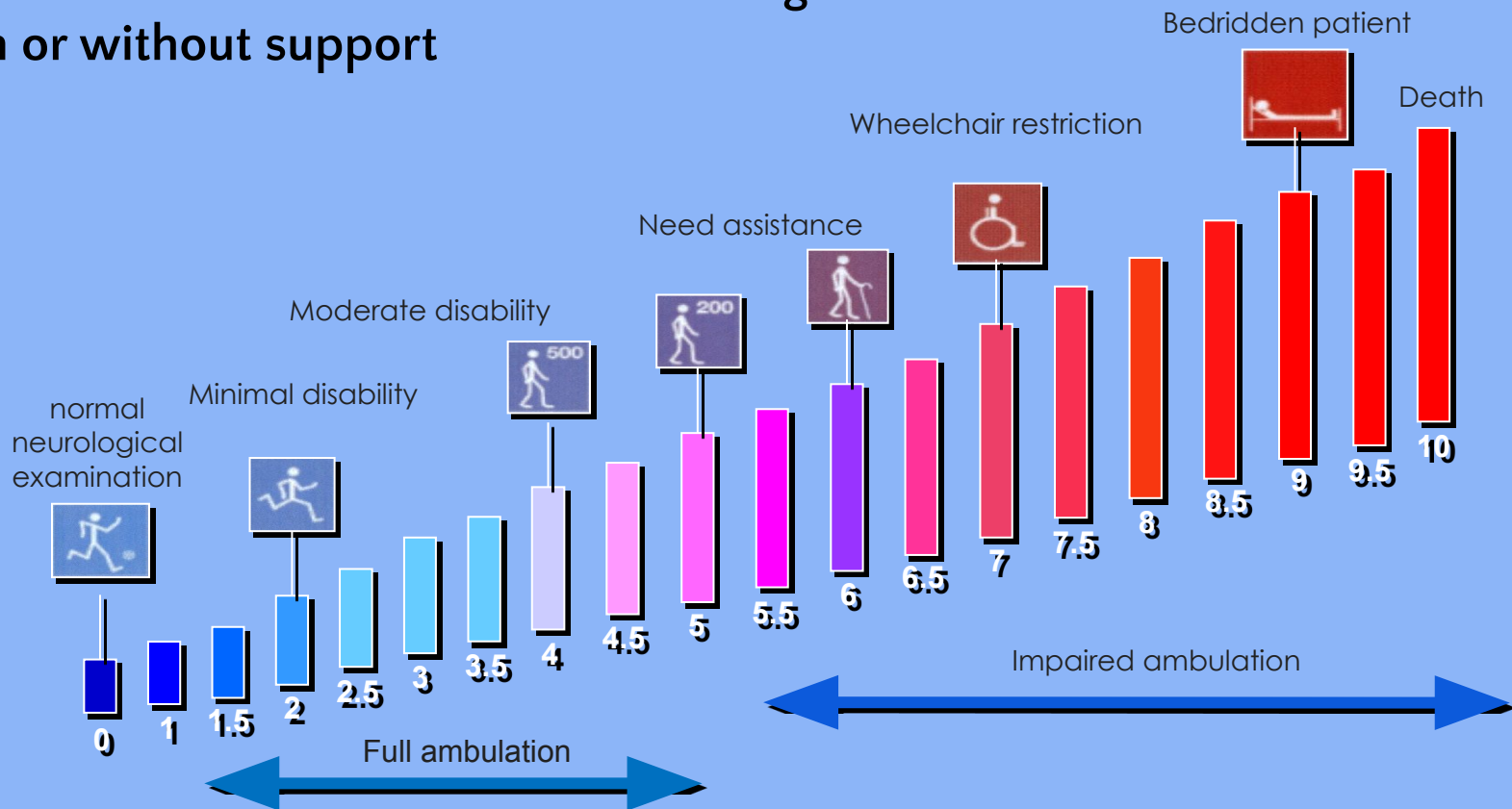


SCALES

- Kurtzke
- IPEC
- OSAME
- Barthel
- JOA
- Ashworth

EDSS (EXPANDED DISABILITY STATUS SCALE)

Final EDSS established based on walking distance with or without support



IPEC DISABILITY SCALE

Evandro Chagas Clinical Research Institute

MOTOR ASSESMENT

Gait (1 – 11)

Ability to run (0 – 1)

Ability to climb stairs (0 – 2)

Ability to jump (0 – 3)

SPASTICITY

Clonus (0 – 2)

Espasmo flexor-extensor (0 – 1)

SENSIBILITY

Paresthesia (0 – 2)

Low back or lower limb
pain (0 – 2)

SPHINCTERS

Bladder control (0 – 3)

Bowel control (0 – 2)

Total Score

Zero - 29

IPEC DISABILITY SCALE

Evandro Chagas Clinical Research Institute

$$\textit{Quartil} = \frac{\text{"Sum of Points"}}{\text{"Sickness time in years"}}$$

1° Quartil – score < 25%

Slow progression

3° Quartil - score > 75%

Rapid progression

OTHER DISABILITY ASSESSMENT SCALES

OSAME Motor Disability Score

- Evaluates motor function
- Graduation from zero to 13 (highest index = highest commitment)

JOA – Japanese Orthopedic Association

- Evaluates motor, sensory and sphincter function
- Graduation from -2.0 to 17.0 (higher index = higher commitment)

Barthel

- Evaluates degree of independence in activities of daily living
- Graduation from zero to 20 (lowest index = highest commitment)

Ashworth

- Grades muscle tone
- Graduation from zero to 4 (highest index = highest commitment)

CLINICAL COURSE OF HAM/PET

Severe

Motor disability

Mild

Very fast progression



Slow progression



Slower progression

Mild progression



10

20

Years

Period since onset of disease

THE EXPERIENCE

REFERENCE CENTER FOR THE CARE OF PATIENTS
WITH DEMYELIZING DISEASES AND
NEUROINFECTION



EPIDEMIOLOGICAL DATA OF THE CRAPPDD-HR

Period of Time:

1994 to 2023 (29 years old)

Number of patients followed:

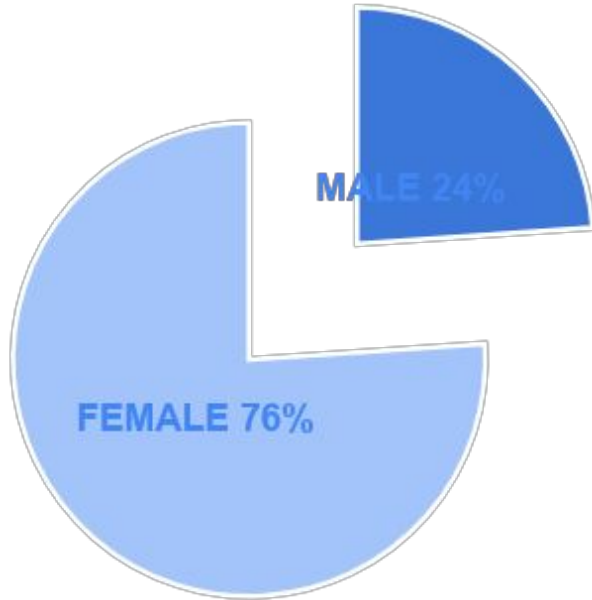
265 patients

Reference

Spontaneous Search
Hemotherapy Center of Pernambuco
Other Services



DISTRIBUTION BY GENDER



Female:male ratio = 3.2:1



AGE DISTRIBUTION ACCORDING TO GENDER

FEMALE

Average 55.75 ± 1.42 years

MALE

Average 53.63 ± 2.81 years

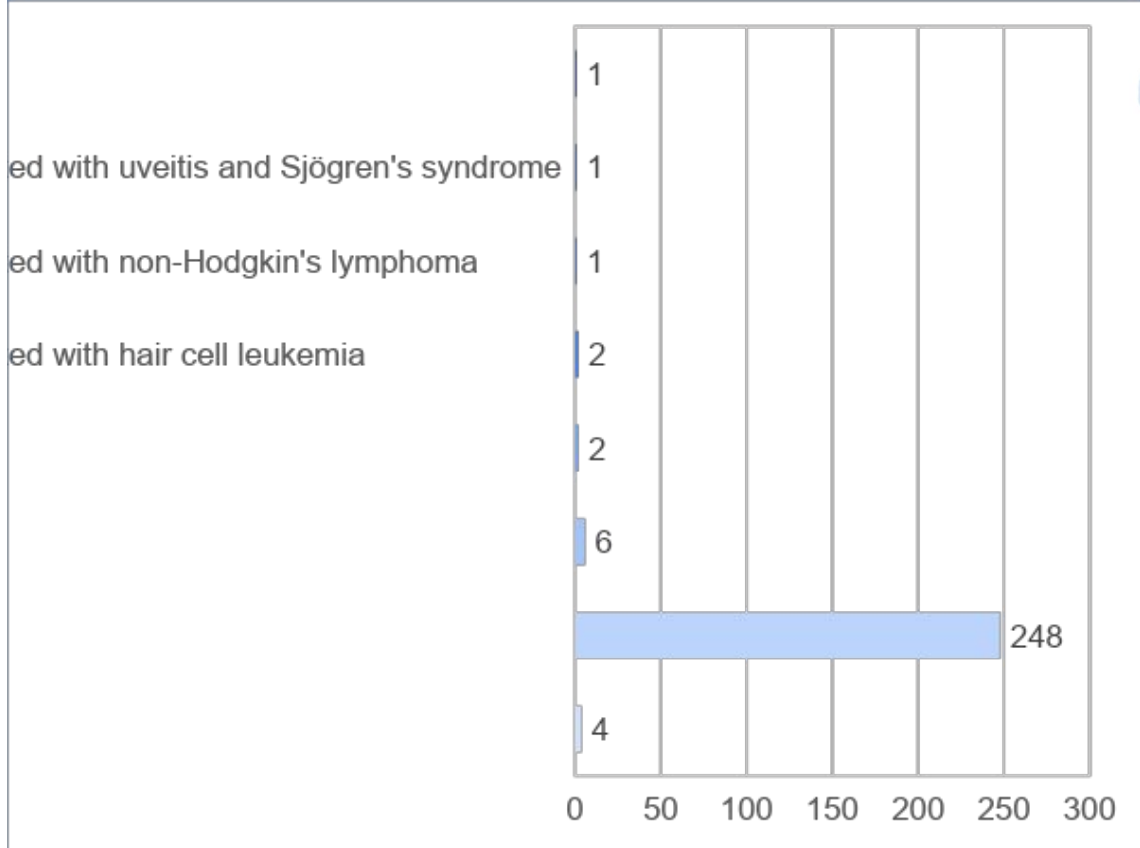
There was no significant difference in age between the sexes

F= 0,417

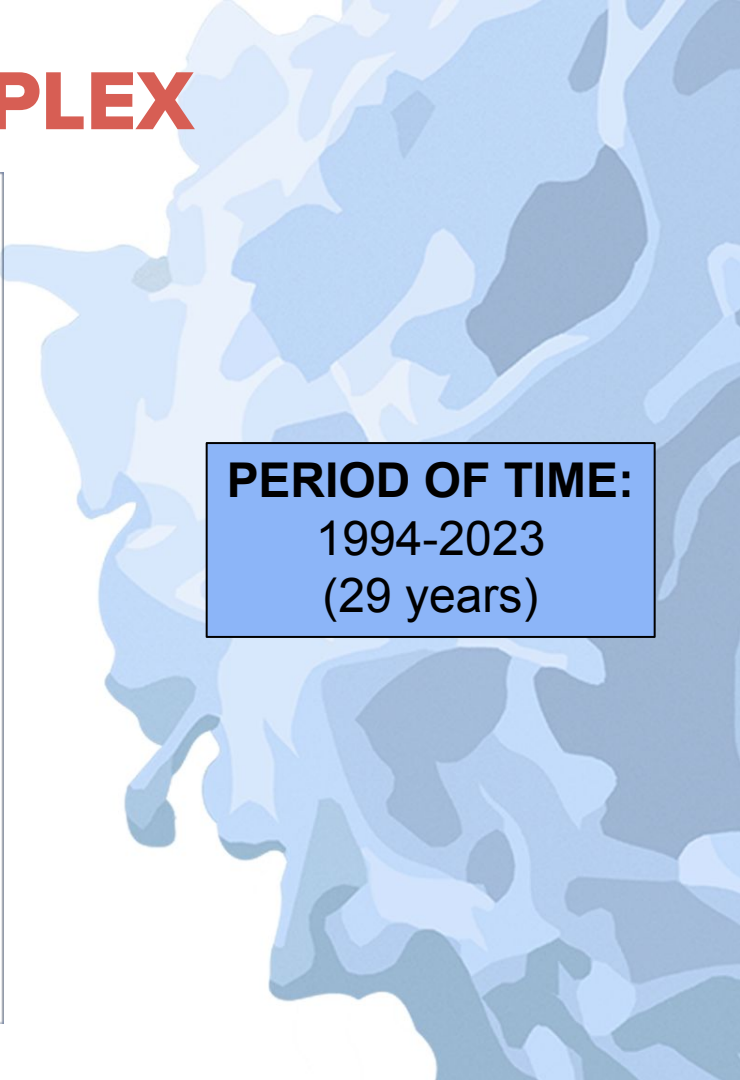
p_{uncaudal left} = 0,520



HTLV NEUROLOGICAL COMPLEX



PERIOD OF TIME:
1994-2023
(29 years)



NEUROLOGICAL FOLLOW UP

CLINICAL AND
NEUROLOGICAL
EXAMINATION

ASYMPTOMATIC
Periodic follow-up
(semi-annual)

OLIGOSSYMPOMATIC

SYMPTOMATIC

Follow-up with variable
periodicity
Treatment
Physiotherapy

COUNSELLING

REFRAIN FROM DONATING:

Blood
Organs
Milk
Sperm

REFRAIN FROM THE SHARED

USE OF:

Needles
Syringes
Perfuro-shear

DISCUSS WITH SEXUAL PARTNER:

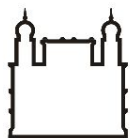
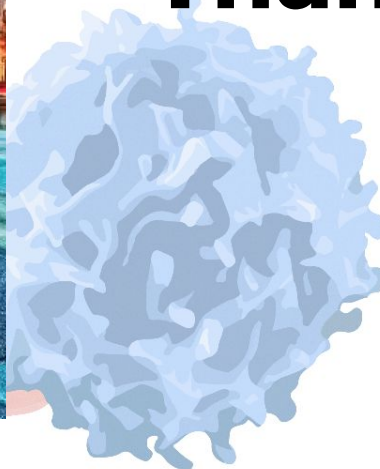
Sexual transmission
Preventive Measures

AVOID

Breastfeeding



Thank you



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Research Club
Neuroimmunology
& Neuroinfections



THE
GLOBAL
HEALTH
NETWORK

Enabling research by sharing knowledge