HTLV-1 Infection

Epidemiology, Transmission and Associated Diseases

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- ***INTRODUCTION***

- Human T-lymphotropic virus (HTLV-I), the first human retrovirus to be discovered.
- infect 10 to 20 million people worldwide
- the causative agent of two typically fatal diseases: adult T cell leukemia-lymphoma (ATL) and HTLV-I-associated myelopathy (HAM) which is also known as tropical spastic paraparesis (TSP)

History & Epidemiology

- HTLV-I infects an estimated 10 to 20 million people worldwide.
- It is endemic in southern Japan, the Caribbean, South America, the Melanesian islands, Papua New Guinea, the Middle East and central and southern Africa
- In these endemic areas, seroprevalences range from 3-5% in Trinidad up to 30% in rural Miyazaki in southern Japan.

HTLV-I in Iran

۱- تاریخچه عفونت HTLV-I در ایران

۲- HTLV-I در جمعیت عمومی ایران

۳- HTLV-I در اهداکنندگان خون ایران

۴- HTLV-I در دریافت‌کنندگان خون ایران

چهارشنبه 26 دی

History of HTLV-I in Iran

❖ ۱۳۶۹==»» گزارش چهار بیمار مشهدی مبتلا به ATL در فلسطین اشغالی (سه نفر HTLV-I مثبت)

❖ ۱۳۶۹==»» ۱۲٪ یهودیان مشهدی در فلسطین اشغالی، HTLV-I مثبت بودند اما در میان یهودیان ایرانی غیر مشهدی و یهودیان غیر ایرانی مورد مثبتی مشاهده نشد.

Sidi Y, et al. Adult T-cell lymphoma in Israeli patients of Iranian origin. Cancer 1990

Meytes D, et al. Serological and molecular survey for HTLV-I infection in a high-risk Middle Eastern group. Lancet. 1990

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History of HTLV-I in Iran

❖ ۱۳۷۰==»» ارائه گزارش مقدماتی بررسی سرولوژی HTLV-I در خراسان

(ارزیابی ۳۰۰ نمونه سرم از خراسان و گنبد کاووس و نیز نمونه سرم چند بیمار با فلج اسپاستیک، ATL و لنفوم)

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History of HTLV-I in Iran

❖ ۱۳۷۲==»» گزارش ۱۳ مورد لوکمی/ لنفوم مرتبط با HTLV-I در مشهد

Iranian Journal of Medical Sciences / Vol. 17, Nos. 3 & 4, December 1992

CLINICAL MANIFESTATION OF ADULT-T-CELL LYMPHOMA/LEUKEMIA ASSOCIATED WITH HTLV-I IN NORTH-EASTERN IRAN

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ABSTRACT *The association of adult T cell lymphoma-leukemia and progressive*

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History of HTLV-I in Iran

❖ ۱۳۷۴==»» بررسی حدود ۱۵،۸۸۶نمونه از خون‌های اهدایی در ۲۱ پایگاه انتقال خون کشور (شیوع کلی عفونت HTLV-I ۰/۲۹٪، در مشهد ۱/۹۷٪ و در سایر شهرها از ۰تا ۰/۵٪)

anti - HTLV I, II بررسی مقدماتی فراوانی

چکیده:

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HTLV-I in Iran: General population

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Journal of Clinical Virology

High prevalence of HTLV-I infection in Mashhad, Northeast Iran: A population-based seroepidemiology survey

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HTLV-I in Iran: General population

مکان	زمان	جمعیت هدف	حجم نمونه	شیوع HTLV-I
مشهد	۱۳۸۸	جمعیت عمومی	۱۶۷۸	٪۲/۱۲
نیشابور	۱۳۸۱	جمعیت عمومی	۱۰۰۳	٪۳/۴
نیشابور	۱۳۸۸	مراجعین به آزمایشگاه	۴۸۳	٪۷/۳
سبزوار	۱۳۸۷	جمعیت عمومی	۱۴۴۵	٪۱/۶۶
تربت حیدریه	۱۳۹۰	جمعیت عمومی	۴۰۰	٪۱/۲۵
استان گلستان	۱۳۸۷	جمعیت عمومی	۲۰۳۴	٪۰/۲۹
ساری	۱۳۸۸	مراجعین به آزمایشگاه	۱۲۰۰	٪۰/۰۸

HTLV-I in Iran: Blood donors

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مکان	زمان	شیوع HTLV-I
کل کشور (۲۱ پایگاه از ۱۷ استان)	۱۳۷۴	٪ ۰/۲۹ (۰ –٪۱/۹۷)

مکان	زمان	شیوع HTLV-I
کل کشور (۲۷ استان)	۱۳۸۶	٪ ۰/۰۸۵

مکان	زمان	شیوع HTLV-I
۷ استان	۹۲–۱۳۸۸	٪ ۰/۰۹۸ (۰/۲۰۷–۰/۰۱ درصد در استان‌های مختلف) (۰/۱۳–۰/۰۷ درصد)

- به‌دنبال انتشار نتایج مطالعه اول، غربالگری خون‌های اهدایی در استان خراسان از سال ۱۳۷۴ آغاز گردید.
- نتایج مطالعه دوم سازمان انتقال خون باعث شد علاوه بر استان‌های خراسان، ۴ استان دیگر شامل گیلان، آذربایجان غربی، اردبیل و البرز (؟) به غربالگری خون‌های اهدایی از نظر عفونت HTLV اضافه شود.

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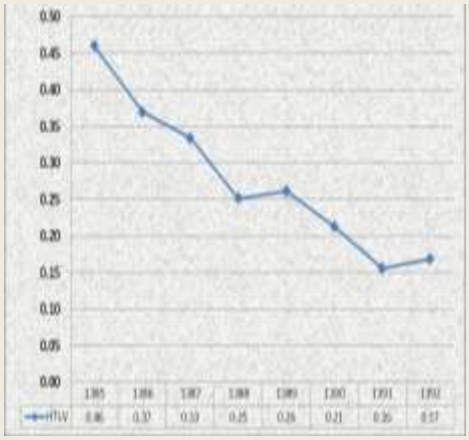
HTLV-I in Iran: Blood donors



شهرستان	سال ۸۳	سال ۹۲
مشهد	0.54%	0.18
نیشابور	1.02%	0.37
تربت حیدریه	0.21%	0.11
سبزوار	0.60%	0.07
قوچان	0.72%	0.09
گناباد	0.17%	0.02
کاشمر	0.00%	0.00
مجموع استان	0.55%	0.17

چهارشنبه ۲۶ دی

Transmission

Transmission

- Seroprevalence increase with **age**
- **women** are nearly **twice** as likely to be infected as men.
- the gender difference is only seen after **30** years of age and probably reflects the relative efficiency of sexual transmission from male to female.

Transmission

- *Breast feeding*

breast-fed infants have a fourfold increase risk of infection (15.7 versus 3.6 percent).

- *Sexual transmission:*

male to female transmission is more efficient than the reverse.

- *Blood transfusion*

Transfusion of infected cells, but not plasma.

The estimated probability of seroconversion is 40 to 60 percent with a mean time of 51 day

- *Tissue donation*

- *Injection drug use*

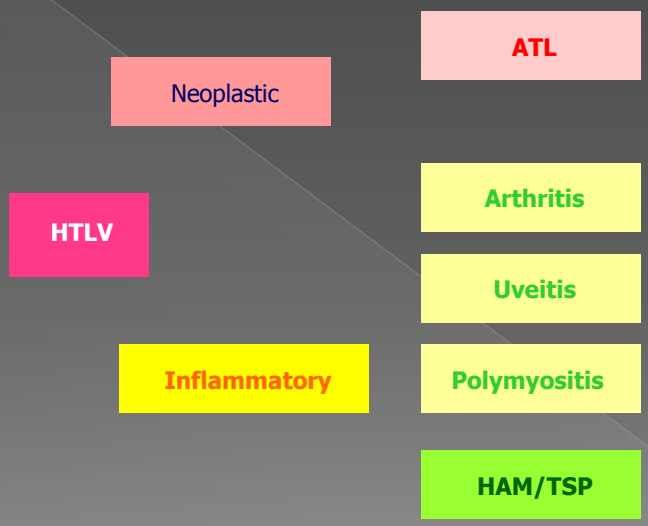
HTLV-I is consistently less prevalent than HTLV-II among IDUs in Western Europe and the United States.

Associated diseases

➢ *DISEASE ASSOCIATIONS*

- The majority of HTLV-I-infected individuals will remain asymptomatic
- Adult T cell leukemia-lymphoma (**ATL**)
- HTLV-I-associated myelopathy **(HAM**), also known as tropical spastic paraparesis (**TSP**).

HTLV-1 associated diseases



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HTLV-1 associated diseases: ATL

- HTLV-I was first isolated from a patient with a cutaneous T cell lymphoma in 1980.
- It has become clear that the cumulative lifetime risk of ATL in a patient with HTLV-I infection is between 2 and 5 percent.
- The risk is slightly higher in males.
- the onset of ATL is typically delayed for 20 to 30 years after the viral infection
- It occurs most frequently among persons aged 40 to 60 years.

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HTLV-1 associated diseases: HAM-TSP

- HAM/TSP is more common in females than males.
- It affects less than 2 percent of HTLV-I carriers.
- with onset ranging from four months to 30 years (median 3.3 years)
- In another prospective cohort analysis, HTLV-1-associated myelopathy was found in 3.7 percent and HTLV-II myelopathy in 1.0 percent

HTLV-1 associated diseases: HAM-TSP

- The illness is characterized by
  - insidious onset of slowly progressive weakness
  - spasticity of one or both legs,
  - together with hyperreflexia, ankle clonus, extensor plantar responses, and lumbar pain
  - Other features include back pain, detrusorinstability leading to nocturia, urinary frequency, incontinence, and minor sensory changes, especially paresthesias and loss of vibration sense .

- HTLV-1–associated uveitis may be unilateral or bilateral, is more common among women, and resolves spontaneously, although it often recurs within 1-3 yr. Topical corticosteroids hasten recovery.

- **HTLV-1–associated infective dermatitis** is a chronic and recurrent eczematous disease occurring during childhood and adolescence.
- **HTLV-1–associated arthropathy** mimics rheumatoid arthritis, including a positive rheumatoid factor. Treatment is with antiinflammatory agents.

- HTLV-1 infection predisposes to disseminated and recurrent *Strongyloides stercoralis* infection.
- increased risk of developing tuberculosis disease following latent infection
- severe scabies

- **Immune thrombocytopenia (ITP) :** HTLV-I infection was found in 17 (22.1 percent) of 77 Japanese patients with ITP

- **Gastric cancer:** the incidence of gastric cancer may be lower in patients with HTLV-1 infection. Some reports have also noted a low prevalence of Helicobacter pylori infection among patients infected with HTLV-1.