Mediel Journal of the
Islamic Repoblic of Iran

Volume 6
Number 2
Tabestan 1371
Summer 1992

SCREENING SERA FROM THE ADULT POPULATIONS OF MASHHAD AND GONBAD FOR ANTI BODIES TO HTLV-1

R. FARID, M.D., FCCP, M.M. ETEMADI, MD, H. BARADARAN, MD, A. SHIRDEL, N. AHKAMI,* AND S. SAFAI,** M.D., DSC.

*Mashhad University of Medical Sciences, Mashhad, Iran, *Cornell University Medical Center, New York, U.S.A., and **New Jersey University Medical School, N.J., U.S.A.*

ABSTRACT

Human T-cell lymphotropic virus, type 1 (HTLV-1) is considered to be the causative agent of adult T-cell lymphoma/leukemia and spastic paralysis, and seems to be common in Khorasan Province.

300 blood samples from Mashhadi and 180 from Gonbadi blood donors were obtained (all samples from healthy subjects). Serological screening was done by passive particle- agglutination test and confirmed by Western blot test.

10% of Mashhadi and 3.3% of Gonbadi residents were positive for HTLV-1 antibodies.

Our findings suggest that Mashhad may be within a previously unrecognised endemic region for HTLV-1 which may be a major health problem for Khorasan Province.

MJIRI, Vol. 6, No. 2, 85-86, 1992

INTRODUCTION

Human T-cell lymphotropic virus type I (HTLV-1), considered to be the causative agent of adult T-cell lymphoma/leukemia and spastic paralysis, seems to be common in Khorasan Province.

HTLV-1 infection has been described in southern Japan, the Caribbean basin, and the northern parts of South America.[1,2] Adult T-cell leukemia due to HTLV-1 has been reported from Khorasan, the north-east of Iran, previously.[6] Because of these findings, we undertook a serological study for HTLV-1 antibodies in 480 residents of Mashhad and Gonbad. This is the first report of serological study of HTLV-1 in Iran.

SUBJECTS AND METHODS

300 blood samples from Mashhadi blood donors and 180 from the city of Gonbad were obtained, all samples were from healthy subjects.

Serological screening was done for HTLV-1 antibodies on serum samples by passive particle-agglutination tests (serodia-HTLV-1 Japan). We used Western Blot method on positive samples for confirmation.

RESULTS

Table I summarizes the serological results. 17% (51 out of 300) Mashhadi and 10% (19 out of 180) Gonbadi residents were positive.

All positive sera were confirmed by Western blot (Fig.1).

Table I- Prevalence of seropositivity of HTLV-1.

Origin	No tested	No positive	Percent
Mashhad	300	30	10
Gonbad	180	6	3.3

*This study is the preliminary report of a research project supported by a grant from the Iranian Institute for Expansion of Knowledge and Research.

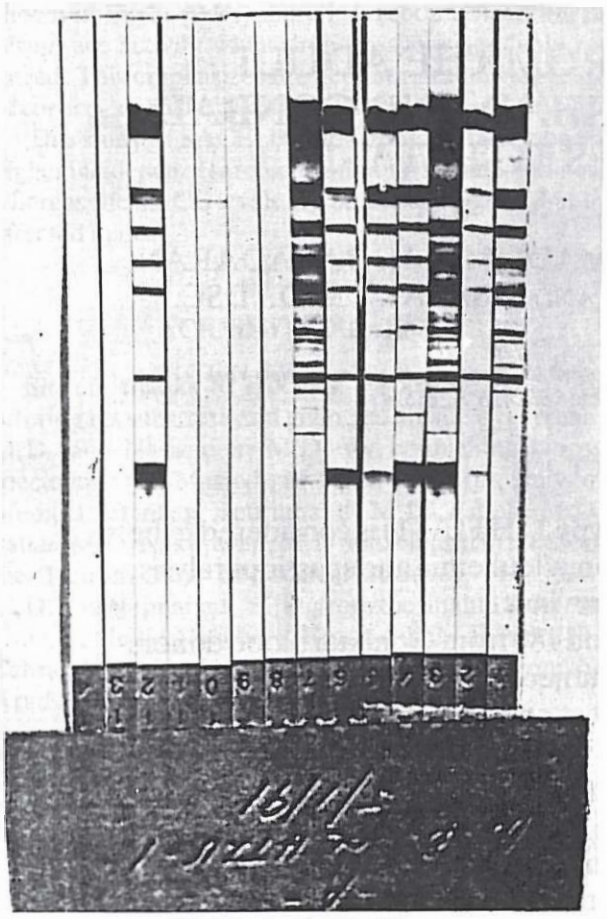

Fig. 1. Western blot on positive sera.

DISCUSSION

HTLV-1 discovered in 1980 by Poiesz, et al,[3] represents the prototype human oncoretrovirus having a multipathological potential.

This virus is associated with severe cases of adult T-cell lymphoma/leukemia, spastic paralysis, and mycosis fungoides.[4] These diseases are more frequent in people of Mashhad origin.[5,6] This is the first report of screening study on serum from normal population of Mashhadi and Gonbadi origin in whom different types of cancer is common.

We have identified 10% of Mashhadi blood donors to be positive for HTLV-1. This donor sample may not be truly representative of the normal population. Further work is in progress which will be reported in the near future (R. Farid, unpublished).

Our findings suggest that Mashhad may be within a previously unrecognised endemic region for HTLV-1 which may be a major health problem for Khorasan Province, especially because it is transmitted sexually, chiefly from men to women, from mother to child by breast feeding, and by blood transfusion.[7]

ACHNOWLEDGEMENTS

We are indebted to Dr. Malekzadeh from the Ministry of Health and Medical Education, and Dr. Farhadi, the Director of Science and Research Institute, for financial support, and Mr. Amina from Immunology Dept. of Mashhad University of Medical Sciences for immunological tests.

REFERENCES:

1. Hinuma Y, Komoda H, Chosa T, et al: Antibodies to adult T-cell leukemia- virus- associated antigen (ATLA) in sera from patients with ATL and controls in Japan: a nation-wide seroepidemiologic study. Int J Cancer 219:631-35, 1982.
2. Ehrlich GD, Glaser JB, Lavigne K, et al: Prevalence of human T-cell leukemia-lymphoma virus (HTLV) type II infection among high-risk individuals: type specific identification of HTLVs by polymerase chain reaction. Blood 74:1658-64, 1989.
3. Poiesz BJ, Ruscetti FW, Gallo RC: Detection and isolation of type C retrovirus particles from fresh and cultured lymphocytes of patient with cutaneous T-cell lymphoma. Proc Natl Sci U.S.A. 77: 7415-7419, 1980.
4. Blattner WA: HTLV-1 associated myelopathies. Human Retrovirology. Raven Press Ltd, New York, 1990.
5. Tabei SZ, et al: Adult T-cell leukemia/lymphoma in the northeast of Iran. Iranian Journal of Medical Sciences 13:2-4, 1986.
6. Meytes D, et al: Serological and molecular survey for HTLV-1 infection in a high-risk Middle Eastern group. The Lancet 336: 1533-1535, 1990.
7. Kajiyama W, et al: Intrafamilial transmission of adult T-cell leukemia virus. J Infect Dis 154, 851-7, 1986.