

## Short Article

# Prevalence of Seropositivity for Human T lymphocytes Virus in Patients with Hereditary Bleeding Diseases in Population of West Azerbaijan

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**Background and Aims:** Human T-lymphotropic virus (HTLV) is a human retrovirus which has been known to cause adult T-cell leukemia/lymphoma and some other inflammatory disorders. Patients with hereditary bleeding diseases are at high risk for these viruses. In this study, we evaluated serological HTLV-I/II infection among these patients in west Azerbaijan of Iran.

**Material and Methods:** We studied 50 hemophiliacs including 43 males and 7 females. Serum samples were screened for Anti-HTLV-I and II using enzyme-linked immunosorbent assay. Western blot method was applied on borderline results for confirmation.

**Results and Conclusions:** All studied patients were seronegative for HTLV-I/II and serologic evidence of HTLV I/II infection was not found in any of patients. Based on our results, blood donor population of Urmia must be increased to achieve more accurate results.

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## Introduction

Human T lymphocyte virus type I and II (HTLV- I/II) are a virus from Retroviridea group which is known as the major cause of some serious diseases such as: adult T cell leukemia, tissue necrotizing lymphadenitis and other inflammatory disorders [1-4]. Patients with hereditary bleeding diseases need several blood transfusion and therefore the risk of blood-borne diseases caused by viruses such as HTLV-I,II increase in these patients. [5-8] Since in Iran, determination of HTLV-I antibodies is not the part of the routine laboratory test in all blood transfusion centers, patients receiving frequently blood transfusion are disposed to be infected by this virus This study is aimed to determine the HTLV-1 frequency and its risk factors in hemophilic patients of west Azerbaijan of Iran. It will help suggest some effective methods of prevention for the infection of HTLV.

## Materials and Methods

The mentioned above observational study was carried out in Urmia, North West of Iran. The study population comprised 50 hemophilic patients had received blood factors in west Azerbaijan. All patients were fully informed and signed testimonial forms. All protocols were confirmed by Ethics Committee of Urmia University of medical sciences, Iran. 3 ml of venous blood samples were collected from each patient, and then centrifuged to obtain serum. The serum anti-HTLV were evaluated using enzyme-linked immunosorbent assay by commercial kit (Pishtazteb, Iran) and by a

certain laboratory. Western blot method was applied for confirmation of borderline results.

## Results and Discussion

Fifty hemophiliacs were registered in the study including 43 (86%) males, and 7 (14%) females. The mean age of patients was 10.3 years. Duration of receiving clotting factor was less than 10 years in 41 patients (82%) and more than 10 years in 9 (18%). 28 patients (56%) received only factor VIII, 4 (8%) both factor VIII and cryoprecipitate, 4 (8%) only fresh frozen plasma (FFP), 1 (2%) only factor IX and 8 (16%) other blood concentrates (including platelet 2 (4%), rFacto VIIa 4 (8%) and Humate P 2 (4%). Distribution of subjects was based on disease etiology (clotting factor deficiency) and their received therapeutic procedure separately presented in table 1. In all studied groups, severe form of disease was more common in comparison to moderate and mild forms. The results of serum antibody analysis have shown that all studied patients were seronegative for HTLV-I/II. Results indicated that in this survey, severe form of disease was more common compared to moderate and mild forms. Some of similar studies conducted in United States [1] have the same results; however, positive cases of HTLV were detected among hemophiliacs in other countries (Brazil) 4.9% [5], and (Japan) 14.3% [9]. Based on various researches in 1995, Rezvan et al. showed that incidence of HTLV-I infection in hemophilic and thalassemia patients of Tehran were 2.96%

and 4.85% respectively [10]. In 2008, Moradi et al. reported that 14.9% of thalassemia patients were seropositive for HTLV-I in Gorgan [8]. In 2015, Mahzounieh and Ziaee

in two separate studies reported an incidence of HTLV-I respectively 9.90% and 20% in Iranian patients who had hereditary bleeding diseases [7, 11].

**Table1.** Distribution of studied subjects based on disease etiology (clotting factor deficiency) and their received therapeutic agents

	Factor VIII	Factor VIII +Cryoprecipitate	Factor VIII+Fresh frozen plasma	Factor VIII +Cryoprecipitate +Fresh frozen plasma	Fresh frozen plasma	Factor IX	Other concentrate	Nothing
Hemophilia A	22(44%)	3 (6%)	2(4%)	1 (2%)	--	--	1 (2%)	5(10%)
Hemophilia B	--	--	--	--	--	1(2%)	--	--
Von Willebrand factor	5(10%)	--	--	--	--	--	3(6%)	--
Factor V deficiency	1(2%)	--	--	--	--	--	--	--
Factor VII deficiency	--	--	--	--	1(2%)	--	2(4%)	--
Factor X deficiency	--	--	--	--	1(2%)	--	--	--
Glanzmann	--	--	--	--	--	--	1(2%)	--
Bernard Soulier	--	--	--	--	--	--	1(2%)	--

### Conclusion

Based on our study, respect to the HTLVI/II seronegativity of all patients with hereditary bleeding disease, extension of results to all hemophiliacs and subsequently blood donor population of Urmia requires more expanded studies.

### Conflict of Interest

The authors declare that they have no conflict of interests in this work.

### Acknowledgment

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