IJPRP

Indian Journal of Pathology: Research and Practice

Volume 7 Number 3, March 2018
DOI: http://dx.doi.org/10.21088/ijprp.2278.148X.7318.2

Original Research Article

Seroprevalence of HIV among Voluntary Blood Donors in a Tertiary Care Hospital in and Around Koodapakkam, Puducherry, India

Pammy Sinha[a], Manoharan A.[b]

[a]Professor and Head [b]Assistant Professor, Department of Pathology, Sri Lakshmi Narayana Institute of Medical Sciences, Affiliated to Bharath University, Pondicherry-605502, India.

Corresponding Author:

A. Manoharan
Assistant Professor,
Department of Pathology
Sri Lakshmi Narayana Institute of Medical Sciences,
Affiliated to Bharath University,
Pondicherry- 605502, India.
E-Mail:
medicomano@gmail.com

(Received on 16.01.2018,
Accepted on 09.02.2018)

Abstract

Background: Human immunodeficiency virus (HIV) infection rates higher in India when compared with world population. Nearly 3 million people have been affected with HIV in the world. The screening for HIV and other transfusion transmitted infections among blood donors before transfusion is much important in preventing risk of infections among patients and extending their life. HIV-2 cases also been reported even in blood donor population in some parts of India. This study was carried out to observe the HIV-1 and HIV-2 prevalence among voluntary blood donors from in and around koodapakkam, puducherry, India.

Methods: A total of 790 voluntary blood donors sample were collected over the period of 3 years from (August 2014 to July 2017). All the voluntary blood donors (790) blood was screened for both HIV-1 and HIV -2 using card test and Enzyme Linked Immunosorbent Assay (ELISA) test.

Results: Out of 790 voluntary blood donors, only one donor (0.126%) was found to be HIV-1 positive using card test. And again using ELISA kit same donor was found to be positive for HIV -1. There is no prevalence of HIV-2 among voluntary blood donors in and around koodapakkam, puducherry,India.

Conclusions: The prevalence of HIV was 0.125 per cent among the voluntary blood donors from koodapakkam area. No HIV-2 case was found among the studied blood donor population. This study concludes that the HIV threat is meagre in this area among the voluntary blood donors.

Keywords: Voluntary Blood Donor Screening; HIV-1-HIV-2- Koodapakkam; Seroprevalence.

Introduction

Acquired immuno-deficiency Syndrome (AIDS) is a major public health threat among the world population. Human immunodeficiency virus(HIV) infection rates higher in India when compared with world population. Nearly 3 million people have been affected with HIV in the world. The screening for HIV and other transfusion transmitted infections among blood donors before transfusion is much important in preventing risk of infections among patients and extending their life. HIV-2 cases also been reported even in blood donor population in some parts of India. One of the most preventive measure in the spread of AIDS is screening of blood and its products among the voluntary blood donors. India ranks third globally among the highest number of HIV affected individuals. There are multiple

methods available for the detection of anti -HIV antibody or antigen or both [1-5]. This study was carried out to observe the HIV-1 and HIV-2 prevalence among voluntary blood donors from in and around koodapakkam, puducherry, India.

Materials and Methods

All voluntary blood donors who donated blood at the blood bank of Sri Lakshmi Narayana Institute of Medical Sciences located at koodapakkam, were taken in this study. The voluntary blood donors sample were collected over the period of 3 years from (August 2014 to July 2017). All the voluntary blood donors (790) blood was screened for both HIV-1 and HIV -2 using card test and Enzyme Linked Immunosorbent Assay (ELISA) test after getting consent from the donor.

Results

Out of 790 voluntary blood donors, only one donor (0.126%) was found to be HIV-1 positive using card test (Table 1). And again using ELISA kit same donor was found to be positive for HIV -1. There is no prevalence of HIV-2 among voluntary blood donors in and around koodapakkam, Puducherry, India. Gender wise, only male voluntaries were participated shown in Table 2.

Table 1: HIV positive among voluntary blood donors

No. of voluntary blood donors in blood bank	HIV Positive	HIV Negative
790	1	789

Table 2: Sex ratio

No. of voluntary blood donors in blood bank	Male	Female
790	790	Nil

Discussion

Blood transfusion plays an important role in prophylactic and therapeutic management of several critical health problems. The screening of blood among the donors provides wide range of protection against various diseases like HIV, HbSAg, HCV, etc. These transfusion transmitted infections can be avoided by routine screening on all donated blood.

HIV infection in India is more common when compared to other countries and India ranks third among HIV affected individual. It was first noted in tamilnadu in 1986, since then there is steady increase in HIV affected people across the country. In India it is more common in coastal regions among the commercial sex workers [4-10].

The Seroprevalence of HIV infection reported in Indian blood donors ranges from 0.084-3.87 percent [8-10]. According to our study the Seroprevalence of HIV infection is about 0.125 percent.

Among these HIV-1 is 100 percent. No HIV-2 cases had been reported in our study. This is in concordance with makroo et al [9,10]study in which HIV -1 prevalence was around 0.249 percent in north india and no HIV-2 cases had been reported. But as per Thakral et al and Singh et al study showed, the seroprevalence of HIV -2 was around 0.16 percent and 0.54 percent respectively [11,12].

Conclusion

The prevalence of HIV was 0.125 per cent among the voluntary blood donors from koodapakkam area which is of HIV-1 infection. No HIV-2 case was found among the studied blood donor population. This study concludes that the HIV threat is meagre in this area among the voluntary blood donors.

Note: There is no conflict of interest.

References

1. World Health Organization, Global blood safety initiative, ABSI/GPA/15, May 25,1988.
2. John, T. J., Babu, PG., Pulimood, Bit and Jayakumari, H. Prevalence of human immunodeficiency virus infection among voluntary blood donors. Indian J Med. Res: 1989:89:1
3. JM, Van den Berg H, Dooren LJ, Vossen LM, Kuis W. Goudsmit J. HTLV III/LAV infection in nine children infected with a single plasma donor: clinical outcomes and recognition patterns of viral proteins. J Infect Dis 1986; 154:171-4.
4. World Health Organization. Screening donated blood for transfusion-transmissible infections: Geneva: WHO. 2009. http://www.ncbi.nlm.nih.gov/books/NBK142990.

5. John TJ, Babu PG, Jeyakumari HM, Simoes EAF. Current prevalence and risk groups of HIV infection in Tamil Nadu, India. Lancet 1987;1:160-1.
6. Steinbrook R. HIV in India - A Complex Epidemic. N Engl J Med 2007;356:1089-93.
7. Ministry of Health & Family Welfare, Government of India (1989): Drugs and Cosmetics Act. The Gazette of India. New Delhi: Ministry of Health & Family Welfare; 1989.
8. Moiz B, Ali B, Chatha MH, Raheem A, Zaheer HA. HIV prevelance in blood donors and recipients in Pakistan: a meta-analysis and analysis of blood-bank data. WHO South-East Asia J Public Health 2015;4(2):176–183.
9. Makroo et al. Prevalence of HIV among blood donors in a tertiary care centreof north India: Indian J Med Res 2011 Dec;134:950-53.
10. Makroo RN, Salil P, Vashist RP, Shivlal. Trends of HIV infection in the blood donors of Delhi. Indian J Pathol Microbiol 1996;39:139-42.
11. Thakral B, Saluja K, Sharma RR, Marwaha N. Alogrithm donors for recall of HIV reactive Indian blood donors by sequential immunoassays enables selective donor referral for counseling. J Postgrd Med 2006;52:106-9.
12. Singh B, Verma M, Kotru M, Verma K, Batra M. Prevalence of HIV & VDRL seropositivity in blood donors of Delhi. Indian J Med Res 2005;122:234-6.