



Comparative study of Blood bank donor infected with HIV & Hepatitis B infection and Prevalence coal field area Dhanbad, Jharkhand

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Abstract

Blood transfusion is an important component of health care and millions of lives are being saved each years through this procedure.^{1,2} in Jharkhand scores of peoples visit blood bank of various hospital and other blood donation center to donate blood. Today very important role play blood banks and saving humans lives .Blood bank collected blood from donors, performing screening test and separated in to components stored, and prepared for transfusion to recipients.^{3,4} After blood is drawn, screening tests are also performed for evidence of donor infection with Hepatitis viruses B and C, human immune deficiency viruses (HIV) 1 and 2. Blood bank In the case of reactive screening result, confirmatory testing should be performed to identify infected blood donors should be informed. This study focus on screening test reactive donors Prevalence to HIV and Hepatitis B infection coal field area dhanbad, Jharkhand.

Materials and Methods: All Study was done at the department of Microbiology PMCH Dhanbad from December 2018 to December 2019 with the help of blood Bank PMCH, dhanbad. This study collected approximately 1195 blood donor's blood sample. This study is done with the name, address, and any other contacts of the Person will be kept secret.

Sample Collection: The blood donor's blood samples collected to be PMCH blood Bank and within one hours transporting Microbiology dept. lab.

Blood Screening Test: Blood screening test examination used Rapid test kits HIV and Hepatitis B.

Keywords: Blood screening, Hepatitis B, HIV, and Reactive.

Introduction

Blood transfusion is an important component of health care and millions of lives are being saved each years through this procedure.^{5} In the Jharkhand state scores of peoples visit blood banks of various hospitals and other blood

donation centers to donate their blood. Today blood banks play a very important roles in saving human lives.^{6,7} Blood banks collects blood from various donors, performing screening test and separates blood components and store them in cold chain with the help of refrigerator and

prepared them for transfusion to recipients.^(8,9) After blood is drawn, screening tests are also performed for evidence of donors infection with Hepatitis viruses B and C, human immunodeficiency viruses (HIV) 1& 2. blood bank In the case of reactive screening result, confirmatory testing should be performed to identify infected blood donors and should be informed to donors. This study focus on screening test reactive donors Prevalence to HIV and Hepatitis B infection coal field area of dhanbad district of Jharkhand.

Age and Sex Predilection of Donors: In this study all Downers of both genders who were more than 18 years of age were included.

Statistical Analysis: All Data were analyzed with standard statistical method, percentage were computed for all variables results were presented in the form of table and column.

Result

In our study of a total number of 1195 Blood donor’s Blood samples were collected and thoroughly investigated by the Microbiology standard procedure in the Department of

Microbiology of the Patliputra Medical Collage and Hospital Dhanbad. In this Study we found that the total number of Male donors were 875(73%) and Total number of female donors were 241 (**According to Table 1**). In the age groups of 18 to 33 the total number of Hepatitis- B positive were 10, (59%) and the age group 34 to 48 total number of Hepatitis B positive were 03(18%) and the age group of 49 to above total number of Hepatitis -B positive were 04(23%), in our study we have found that the total number of HIV Reactive blood donor samples were 09, in the age group of 18 to 33 the total reactive blood samples were 02 (22.7%) and the age group of 34 to 48 the total number of reactive blood samples were 04(44%), In the last age group of 49 to above, the total number of HIV reactive blood samples were 03(33.3%). In this study this shows that the infection of Blood donor samples Hepatitis B is much higher than HIV. In this study we have found that the highest numbers of HIV reactive blood donors in the age group of 34 to 48 and the age groups of 18 to 33 is the highest Hepatitis B positive blood donor’s (**According to Table 2 & 3**).

Table 1 Age and Sex wise distribution among total Blood Donor Samples

Total Number of Blood Donor Samples.	Gender.				Age Group.					
	Male.	Total %	Female.	Total %	18 to 33	Total %	34 to 48	Total %	49 to above.	Total %
1195	875	73%	320	27	486	41.4%	455	38%	254	20.6%

Table 2 Total Number of Blood Donor Samples HIV test & Confirmatory Test

Total Number of Blood Donor Samples.	HIV test.							Hepatitis B.		
	1 st HIV test			2 nd Confirmatory Test		3 rd Confirmatory Test		Rapid kit Test.		
	Combs Test.		Total %	Merils Rapid Kit Test.		Aids scan Rapid kit Test.		Rapid kit Test.		
	Reactive	Non-Reactive		Reactive	Non-Reactive	Reactive	Non-Reactive	Positive	Negative	Total %
1195	09	1186	0.7	09	00	09	00	17	1178	1.4

Table 3 Total HIV Reactive Blood Samples & Total Hepatitis Positive Blood Samples Age Wise distribution

Total HIV Reactive Blood Samples.	Age Group distribution.						Total Hepatitis Positive Blood Samples.	Age Group distribution .					
	18 to 33	Total %	34 to 48	Total %	49 to above.	Total %		18 to 33	Total %	34 to 48	Total %	49 to above	Total %
09	02	22.7	04	44	03	33.3	17	10	59	03	18	04	23

Discussion

Human blood is used for the prevention and treatment of various life threatening diseases. The blood transfusion has been subject to contamination with different human pathogens that may induce a wide variety of risk, especially transfusion such as HIV and Hepatitis B. HIV and Hepatitis B virus transmitted through sexual contact and same injection use by persons.⁽¹⁰⁾ Because of these shared mode of transmission, people at high risk for HIV infection and also risk for HBV infection.⁽¹¹⁾ The result of this study have demonstrated the endemicity and occurrence of significant levels of HIV and Hepatitis B infection in blood donors in dhanbad district of Jharkhand. In this study 0.7% Prevalence of HIV and Hepatitis B virus and 1.4 was reported. The study suggests that we should improve our blood banks screening test techniques and recommend the measures like public awareness of the infection of HIV and Hepatitis B virus.

Conclusion

HIV and hepatitis B are public health problem in the world. The HIV patients in the whole world approximately about 2.5 to 3.0 million worldwide according to (WHO). Hepatitis B virus infection and HIV infection caused nearly a million deaths worldwide. In the whole world, more than 257 million people live with HBV infection according to (WHO). This study focus on HIV 1, & HIV 2, and Hepatitis B Prevalent among blood donors from Coal field area of dhanbad district of Jharkhand.

Declaration: This study is done with the name, address, and any other contacts of the Person will be kept secret.

Duration of study: One Year.

Acknowledgments: This Research study is permitted by:

Institutional Ethics Committee, Patliputra Medical Collage, Dhanbad.

IEC PMCH Register by: (The Central Drugs Standard Control organization) Director General of Health Services, Ministry of Health & Family Welfare, Government of India.

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