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STUDY OF SEROPREVALENCE OF HIV, HEPATITIS B, HEPATITIS C AND SYPHILIS AMONG VOLUNTARY BLOOD DONORS IN A TERTIARY CARE HOSPITAL IN A TRIBAL DISTRICT OF EASTERN MAHARASHTRA

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ABSTRACT

Introduction: Blood transfusion forms an integral part of modern mode of therapy. Transmission of infectious diseases through donated blood is of concern to blood safety. Blood transfusion carries the risk of transfusion-transmissible infections, including HIV, hepatitis. The Indian subcontinent is classified as an intermediate HBV endemic (HBsAg carriage 2-7%) zone and has the second largest global pool of chronic HBV infections.

Materials And Methods: All the voluntary blood donors who attended blood bank of GMCH,Gondia were screened for HIV , HbSAg and Anti-HCV test by ELISA .Test for syphilis was done by RPR.

Results: Seroprevalence of HBsAg,HCV and HIV among healthy blood donors were 0.65%,0.1%,0.04% and 0.02% respectively. Seroprevalence of HBsAg, HCV and HIV among healthy blood donors females is 0 %.

Conclusion :

Proper pre donation screening of blood donor and post donation testing of blood bag should be done to minimize transfusion transmitted disease. We should educate the donors as well as medical staffs and makes awareness about transfusion transmitted diseases, so that we can provide safe blood as much as and to reduce transmitted disease to recipients.

KEYWORDS : Seroprevalence, HIV,HbsAg,HCV,Blood donors

Introduction:

Blood transfusion forms an integral part of modern mode of therapy. Transmission of infectious diseases through donated blood is of concern to blood safety. Blood transfusion carries the risk of transfusion-transmissible infections(TTIs) , including HIV, hepatitis, syphilis, malaria and infrequently toxoplasmosis, and some viral infections like CMV, EBV and herpes. With every unit of blood, there is 1% chance of transfusion-associated problems including transfusion-transmitted diseases [1].

Among the TTIs, hepatitis B (HBV), hepatitis C (HCV), and HIV are the most dreadful. [2] billion people have been infected with HBV and 360 million have chronic infection worldwide and it is the 10th leading cause of death worldwide causing 500000 to 1.2 million deaths per year due to chronic hepatitis, cirrhosis, and hepatocellular carcinoma [2,3].

In Asia and most of Africa, chronic HBV infection is common and in Western countries, the disease is relatively rare [3].

The Indian subcontinent is classified as an intermediate HBV endemic (HBsAg carriage 2-7%) zone and has the second largest global pool of chronic HBV infections [3].The improved screening and testing of blood donors has significantly reduced transfusion-transmitted diseases in most developed countries. This has not been so in developing nations. Poor health education and lack of awareness result in the reservoir of infections in the population. So the present study is conducted to know the seroprevalence of Hepatitis B, Hepatitis C and Human Immunodeficiency Virus in blood bank ,Government Medical College and Hospital, Gondia .

Materials And Methods:

This cross-sectional observational study was done among voluntary blood donors who attended blood bank of GMCH,Gondia during the period of June 2016 to June 2017. In this we included followings : (1) subjects of either sex, (2) age group (in years) - 18 to 60, and (3) subjects otherwise healthy for blood donation.

The screening for HIV was done by ELISA using kits (Erba, India). HBsAg was detected by ELISA (Erba, India). Anti-HCV test was done by ELISA (Erba, India). Test for syphilis was done by RPR (Pathozyme, India).

Results:

Table 1: Seroprevalence of HBsAg,HCV, HIV and Syphilis among healthy blood donors during June 2016 to June 2017

Total number of donors	HBsAg(%)	HCV(%)	HIV(%)	RPR (SYPHILIS) (%)
8569	56 (0.65%)	09(0,1%)	04(0.04%)	02(0.02%)

Seroprevalence of HBsAg,HCV and HIV among healthy blood donors are 0.65%,0.1%,0.04% and 0.02% respectively.

Table 2 : Sex distribution of donors having seroprevalene of HBsAg, HCV and HIV

Total number of donors (n=8469)		HBsAg(%) (n=56)		HCV(%) (n=09)		HIV(%) (n=04)		RPR (SYPHILIS) (%) (n=02)	
Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
8412 (99.32 %)	157 (1.85%)	56 (100 %)	00 (00)	09 (100)	00	04 (100)	00 (00)	02 (100)	00 (00)

Seroprevalence of HBsAg, HCV and HIV among healthy blood donors females is 0 %.

One donor was found positive for HIV,HBV,HCV and Syphilis

Discussion :

Blood transfusion is a significant route of transmission of infectious disease like HBV, HCV, and HIV. These diseases are of great concern because they can cause fatal acute and chronic life-threatening disorders. Risk may be reduced by the vigorous screening of donors and donated blood. Prevalence of HBV, HCV, and HIV among the healthy blood donors or the replacement donors reflects the disease prevalence in the community [4]. Due to limitation in current blood screening practices in developing countries, donation by such individual is a potential threat to recipients [5]. A WHO report states that the viral dose in HIV transmission through blood is so large that one HIV positive transfusion leads to death on an average after two years in children and after three to five years in adults [6]. Blood donation collected in latent period of infection may be infectious despite of negative antibody test [7].

Seropositivity for HIV (0.04%) in the present study was lower than the studies reported from other parts of India [8,9,10]. The seroprevalence of HBsAg among healthy blood donors was 0.65% in the present study. Gupta et al 2004 also reported 0.66% seropositivity of HBV in voluntary blood donors in their study [11]. The seroprevalence of HCV among healthy blood donors was 0.1% in the present study.In different Indian studies, HCV seroprevalence ranged between 0.57 to 1.49%, which was much higher than the present study (0.35%) [11,12,13,14].

Majority of the donors were male (99.32%), similar findings were also found in studies in different parts of India [11,13,14].

Conclusion:

Proper pre donation screening of blood donor and post donation testing of blood bag should be done to minimize transfusion transmitted disease. We should educate the donors as well as medical staffs and makes awareness about transfusion transmitted diseases, so that we can provide safes blood as much as and to reduce transmitted disease to recipient.

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