



PREVALENCE OF HIV AND HEPATITIS VIRUS IN BLOOD DONORS IN ACHARYA SHRI CHANDRA COLLEGE OF MEDICAL SCIENCES AND HOSPITAL.

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ABSTRACT **AIM:** The present study was undertaken with an aim to investigate the sero prevalence of HIV and hepatitis in blood donors. **Introduction:** Blood transfusion constitutes of an important part of patient care, as up to 10% of hospitalized patients are transfused. But unsafe blood transfusion have the potential to transmit a diversity of infections to blood recipients. These infections could be due to viruses, bacteria, protozoans, and/or prions. Viral agents include human immunodeficiency virus (HIV), Hepatitis B virus (HBV) and Hepatitis C virus (HCV). **Material And Methods:** The present study was undertaken with an aim to investigate the sero-prevalence of HIV and hepatitis in blood donors. This is a cross sectional study of 200 blood donors in of Acharya shree Chandra college of medical sciences and hospital with age ranging from 18 to 49 years from time period October 2023 to March 2024. **Result:** Out of 200 donors, only 18 were positive for hepatitis. (13 male and 5 female). Also 8 out of 200 were positive for HIV, out of which 8 were male and 1 was female. **Conclusion:** It is necessary to estimate the prevalence of infections in the donor community using more sensitive and specific tests than the early tests used.

KEYWORDS : Blood donors, sero prevalence of hepatitis, sero prevalence of HIV, blood transfusions

INTRODUCTION

Medicine has made a significant progress in understanding circulation in the past years. For many years, medicine believed in the "four humors" and used bloodletting as a treatment. In the 1600s, William Harvey demonstrated the functioning of the circulatory system. Soon after that, scientists became interested in transfusion. Dr. Philip Syng Physick is known to carry out the first human blood transfusion in 1795, also, the first transfusion of human blood for treating hemorrhage was in England in 1818 by Dr. James Blundell.[1]

Blood transfusions comprise an important part of patient care, as up to 10% of hospitalized patients are transfused. [2].

They have been the cornerstone of life support since the introduction of the ABO classification in the 20th century. The physiologic goal of transfusion is to restore adequate tissue oxygenation when the demand is exceeding.(3)

But at the same time, unsafe blood transfusion has the potential to transmit a diverse group of infections to blood recipients. These infections could be due to viruses, bacteria, protozoans, and/or prions [4]. Viral agents include human immunodeficiency virus (HIV) [5], Hepatitis B virus (HBV) and Hepatitis C virus (HCV) [6]. Bacterial pathogens include among others, Yersinia, Pseudomonas, Klebsiella and Staphylococcus [7]. The example of protozoan infection is plasmodium species and Babesia microti infections which can be transmitted through blood transfusion [8]

Blood transfusion practices worldwide have been stressing on the safety and protection of human life. Infections such as HIV, HBV, HCV are of the greatest concern because of their prolonged viraemia and carrier or latent state [9]

The first transfusion transmitted infection was Syphilis in the 1930s. Since then, numerous infectious agents associated with blood transfusions have been identified.[10] Although it was not known then that the agent of transmission for hepatitis was virus, transfusion transmission of hepatitis has been recognized since the 1940s.[11] The ease of transmission of HIV via blood transfusion became more appreciated, especially with the spread of HIV in the 1980s.[12]

WHO strategy for universal safe blood transfusion places an emphasis on the development of a well-coordinated blood transfusion system with an exclusive collection of blood from VNRDs, quality-assured donor testing, evidence-based use of BT practices, development of universal quality and monitoring metrics[13]

The WHO has recommended donor screening of HCV through anti-

HCV antibodies by rapid diagnostic immunoassay in resource-limited countries or a combination of HCV antigen-antibody immunoassay (EIA/CLIA). Samples reactive by CLIA/EIA are to be further confirmed by nucleic acid amplification technology (NAT), which is the gold standard for HCV diagnosis. For HBV, blood donors should be screened using a highly sensitive and specific HBsAg immunoassay (EIA/CLIA).[14]

MATERIALS AND METHODS

This is a cross sectional study of 200 blood donors in of Acharya shree Chandra college of medical sciences and hospital with age ranging from 18 to 49 years from time period October 2023 to march 2024.

All the general information about the case including name, age, date were registered.

AIM: The present study was undertaken with an aim to investigate the sero prevalence of HIV and hepatitis in blood donors.

RESULT

A Total of 200 donors presenting at the blood bank of Acharya shree Chandra college of medical sciences and hospital were considered.

A detailed history of the donors was taken.

We studied the sex distribution, age, donation status, marital status, blood group, educational status, seropositivity of hepatitis and HIV and sex wise distribution of seropositivity.

The tabular form of the data is given below:

Table 1: Showing Sex Wise Distribution Of Blood Donors.

Sex	Number Of Donors	Percentage
MALE	146	73%
FEMALE	54	27%
TOTAL	200	100%

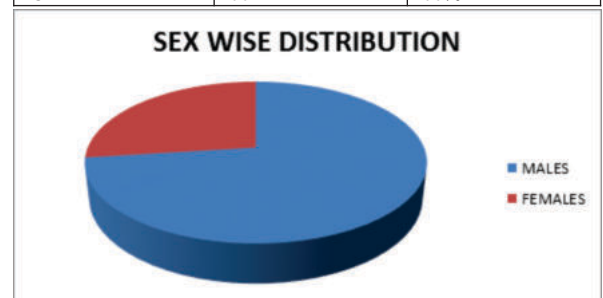


Table 2: Showing Distribution Of Blood Donors According To Age Groups.

Age Group (years)	Number Of Donors	Percentage
18-25	67	33.5%
26-33	86	43%
34-41	42	21%
42-49	05	2.5%
TOTAL	200	100%

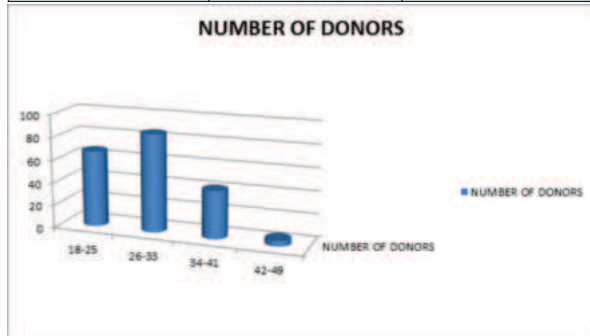


Table 3: Showing Donation Status Of Blood Donor.

Donation Status	Number Of Donors	Percentage
FIRST TIME	66	33%
REGULAR	134	67%
TOTAL	200	100%

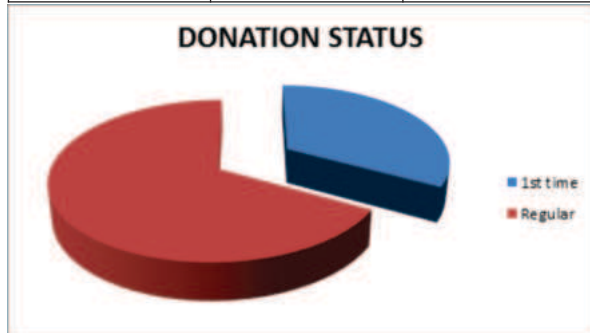


Table 4: Showing Marital Status Of Blood Donors.

Marital Status	Number Of Donors	Percentage
SINGLE	58	29%
MARRIED	142	71%
TOTAL	200	100%



Table 5: Showing Distribution Of Blood Donors According To Educational Status.

Educational Status	Number Of Donors	Percentage
LITERATE	176	88%
ILLITERATE	24	12%
TOTAL	200	100%

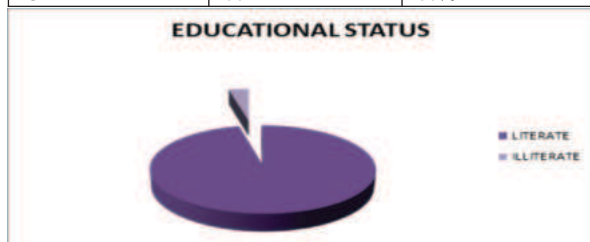


Table 6: Showing Blood Group Distribution Among Blood Donors.

Blood Group	Number Of Donors	Percentage
O	72	36%
A	46	23%
B	54	27%
AB	28	14%
TOTAL	200	100%

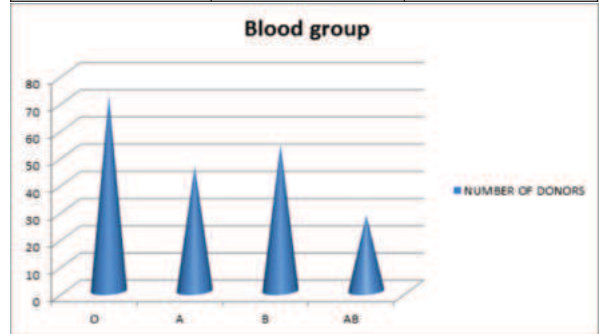


Table 7: Showing Seropositivity Of HIV And Hepatitis B In Blood Donors.

Total Samples	HBsAg Seropositivity		Anti-HIV 1 / 2 Seropositivity	
	Number Of Donors	Percentage	Number Of Donors	Percentage
200	18	09%	08	04%

Table 8: Showing Sex Wise Distribution Of Seropositive Patients

SEX	Number Of Donors	Seropositive For Hbsag	Seropositive For Hiv
MALE	146	13 (6.5%)	07 (3.5%)
FEMALE	54	05 (2.5%)	01 (0.5%)

DISCUSSION

Blood donation is a noble practice of saving the life of millions of people. Donating safe and adequate blood can save atleast three lives .[15]

An effective and well-organized screening program and a good quality system are very essential for provisioning safe blood bags to patients and meeting the transfusion requirements.[16]

An effective, well-organized screening program and a good quality system are essential for provisioning safe blood bags to patients and meeting the transfusion requirements.

Proper testing and screening of these Transfusion transmitted infections among blood and platelet donors permits an assessment of the blood donor population to ensure safety of the collected donations. It has become necessary to estimate the prevalence of such infections in the donor community using more sensitive and specific tests than the early tests used. [17].

The battery of screening tests conducted on donor blood has substantially reduced the risk of TTIs, although it has increased the cost of providing safe blood . Proper pre-donation selection of donors, followed by serologic testing for infectious pathogens, including HBV, HCV and HIV is also necessary [18].

In the above study we saw that out of total 200 donors, 146 were male and 54 were females. The most common age group of donors was between 26 to 33 years. Also, in the study , we found out that 67% of the donors were those , who had been donating blood on regular basis. Also, 71 %of them were married. On looking into the educational status of the patients, it was known that 88% of the donors were literate. On blood grouping , the most common blood group in 200 donors was O and the 2nd most common blood group was B.

Finally we saw that , out of 200 donors , only 18 were positive for hepatitis.(13 male and 5 female).

Also 8 out of 200 were positive for HIV ,out of which 8 were male and 1 was female.

CONCLUSION

The study titled Prevalence of HIV virus and hepatitis virus in blood

donors in Acharya Shree Chandra college of medical sciences and hospital was conducted in 200 blood donors presenting at the blood bank from October 2023 to march 2024. In the study, it was found that the number of donors detected as positive for hepatitis virus, that is 9% were more than the number of patients detected as HIV positive (4%). Also, most of the patients diagnosed as hepatitis or HIV positive were male. It is necessary to estimate the prevalence of infections in the donor community using more sensitive and specific tests than the early tests used.

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