



BLOOD BORNE VIRAL INFECTIONS AMONG STUDENT VOLUNTARY BLOOD DONORS IN A TERTIARY CARE HOSPITAL

Medicine

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ABSTRACT

The aim of our study was to determine the current prevalence of blood borne infections among student donors. They represent the younger, educated generation and would be expected to have lower prevalence of such infections than older members of the population.

KEYWORDS

BACKGROUND:

Blood donation drives are frequently conducted in educational institutions, especially universities. A volunteer donor pool has been found to be the safest source of blood worldwide, and this is endorsed by the World Health Organization. In recent years there have been increased public health concerns regarding the safety of blood transfusion with respect to transfusion-associated infections, mainly hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV). The battery of screening tests conducted on donor blood has substantially reduced the risk of transfusion-transmitted diseases, although it has increased the cost of providing safe blood. HBV and HCV are blood borne hepatotropic viruses and are the major causes of chronic liver disease worldwide, particularly cirrhosis and hepatocellular carcinoma. HIV-1 is the most prevalent HIV type throughout the world. HIV-2 has been found primarily in West Africa. The aim of our study was to determine the current prevalence of these blood borne infections among student donors. They represent the younger, educated generation and would be expected to have lower prevalence of such infections than older members of the population. Several infectious diseases are transmissible by blood transfusion, especially viral infections. The most common blood transmitted viruses are hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV). These viruses cause fatal, chronic and life-threatening disorders. The prevalence of these viruses varies by geography and age distribution. The purpose of this study was to establish the current prevalence of hepatitis viruses (B and C) and human retroviruses (HIV-1, 2) among student blood donors at M.B.G.H. Blood Bank, Udaipur.

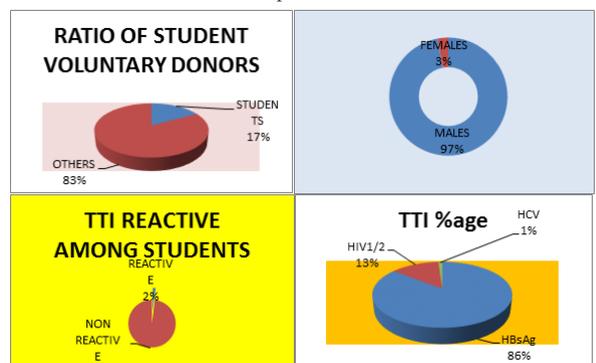
METHODS:

Blood donation campaigns are carried out annually among university students. We carried out a retrospective, record-based study during the academic year 2015-16 among students at blood camps conducted at R.N.T. Medical College, Udaipur, Rajasthan. Age range was 18-27 years. Students were briefed about the benefits of blood donation as well as eligibility to donate blood. Criteria for exclusion of donors were: age < 18 years; history of jaundice, recent fever or chronic disease; anaemia; weight < 50 kg; engagement in high-risk behaviour (e.g. homosexuality, intravenous drug abuse); being immunocompromised; and blood donation within the past 3 months. Volunteer blood donors were carefully selected after complete history taking and physical examination to assess eligibility and to ensure that the donor would not be negatively affected, e.g. become anaemic. The donated units of blood were screened and were discarded if positive for any test. Serum samples were tested for viral markers using commercially-available enzyme-linked immunosorbent assays for hepatitis-B surface antigen (HBsAg), anti-HCV, anti-HIV-1 and anti-HIV-2. Serological markers of HBV, HCV and HIV 1, 2 were studied in 3000 student voluntary blood donors, using commercially available kits, from June 2015 to Oct 2016. The prevalence of confirmed-positive test results of these viruses were evaluated. This study was carried out on volunteer university student blood donors. Application of eligibility criteria excluded those belonging to high-risk groups and those with

chronic diseases. Thus, our findings are peculiar to low-risk, healthy students and cannot be generalized, either to other groups of blood donors or to the general community.

RESULTS:

We carried out a retrospective study on student voluntary blood donors in M.B.G.H. BLOOD BANK, UDAIPUR. Serum samples were tested for HBsAg, anti-HCV, anti-HIV1/2. About 2% of students had ≥ 1 of the diseases tested for. Prevalence of Hepatitis B, HIV1/2, Hepatitis C were 1.02%, 0.16%, 0.013% respectively. Significantly more males than females tested positive for HBsAg. HCV is transmitted primarily through transfusion of blood or blood products, intravenous drug abuse and needle sharing. Other routes of HCV transmission have also been implicated (sexual, vertical and household contacts) which may account for a proportion of the sporadic cases associated with this agent. It is not as infectious as HBV, but up to 80% of infected individuals can become chronically infected and risk serious long-term sequelae, including cirrhosis, liver failure and hepatocellular carcinoma. Anti-HCV was more prevalent in rural than urban students.



CONCLUSIONS:

Volunteer student donors are a good source of safe blood. With proper selection of donors, the number of blood units discarded can be minimized. With a good educational programme infections of HIV and Hepatitis can be minimized among students. With proper selection of donors, university students can be an important source of blood to replenish blood banks with safe blood. Blood donation campaigns should be more actively promoted among these students.

REFERENCES

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