Prevalence of Transfusion Transmitted Disease among Blood Donors in Sree Balaji Medical College and Hospital - A 2 Years Study Report

Dr. Noori Fathima. M1, Dr. B.O. Parijatham2, Dr. R. Govindarajan3

1Post Graduate, 2Professor and HOD, 3Professor Department of Pathology, Sree Balaji Medical college and Hospital, Chromepet, Chennai-600044, Tamil nadu, India

*Corresponding author
Dr. Noori Fathima. M
Email: kasim.fathi@gmail.com

Abstract: The aim of the study was to find out the prevalence of transfusion transmitted infection among blood donors at Sree Balaji Medical College and Hospital. A total of voluntary blood donors were analyzed over a period of 2 years (May 2013 - April 2015). Prevalence of transfusion transmitted infection of total donors were 3356. Prevalance of Hepatitis B positivity was highest 40 cases (1.19%), followed by 11 cases of HCV (0.32%), 8 cases of VDRL (0.23%) and one case of HIV (0.02%). Prevalence was more in male donors. Extensive donor selection and screening procedures will help in improving the blood safety.

Keywords: Hepatitis, Human Immunodeficiency Virus

INTRODUCTION
Blood transfusion is an integral and life saving procedure. Hepatitis B, Hepatitis C, HIV and Syphilis are major public health problem in developing countries. Blood transfusion is a potential route of transmission of these transmitted transfusion disease (TTI)[1]. Screening of blood is now mandatory and is undertaken routinely in blood banks. Transfusion during serologically window period still poses a threat to blood safety in environments where there is high rate of TTIs.

METHOD AND MATERIALS
The present study was carried out in Blood bank at SBMCH . A total of 3356 donors were analyzed for the prevalence of transfusion transmitted infection over a period of 2 years from May 2013 - April 2015. These include replacement donors who donated for ailing patients and were family members, close relatives and friends of the recipients. Basic information regarding age, sex, occupation, no. of previous donations and previous illness was obtained. All samples were screened for hepatitis B surface antigen (hepacard, ELISA), HCV (ELISA), syphilis (RPR), HIV (TRI-Dot, ELISA) were performed.

RESULTS
A total of 3356 donors were studied. Among that, Hepatitis B surface antigen is positive for 40 cases (1.19%), followed by 11 cases of HCV (0.32%), 8 cases of VDRL (0.23%) and one case of HIV (0.02%). Prevalence was more in male donors. Extensive donor selection and screening procedures will help in improving the blood safety.

Table 1: Blood transfusion cases 2013-2014

<table>
<thead>
<tr>
<th>AGE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>Hb’s Ag*</th>
<th>HIV*</th>
<th>HCV*</th>
<th>VDRL*</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20yrs</td>
<td>170</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>21-30 yrs</td>
<td>879</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>31-40 yrs</td>
<td>348</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>&gt;40 yrs</td>
<td>107</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>1504</td>
<td>20</td>
<td>16</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Positive cases*
Table 2: Blood transfusion cases 2014-2015

<table>
<thead>
<tr>
<th>AGE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>Hb’sAg*</th>
<th>HIV*</th>
<th>HCV*</th>
<th>VDRL*</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20yrs</td>
<td>267</td>
<td>9</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>21-30 yrs</td>
<td>985</td>
<td>15</td>
<td>10</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>31-40 yrs</td>
<td>411</td>
<td>13</td>
<td>12</td>
<td>-</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>&gt;40 yrs</td>
<td>129</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>1792</td>
<td>40</td>
<td>24</td>
<td>6</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

Transfusion of blood and its components is lifesaving as well as it has life threatening hazards [2,3].

Our results showed that high positivity for Hepatitis B virus (1.19%), similar results found by Arora et al. [4], Sawke et al. [5] and Chandra et al. [6] which shows 1.7%, 2.9% and 5%.

Seroprevalence of HCV is 0.32 %, which is less compared to other studies such as Kulkarni et al. [7].

This study highlights 0.23% prevalence of syphilis infection, which is high compared to study done by Kulkarni et al. [6] which showed 0.04%.

Seroprevalence of HIV is 0.02% in our study which is in contrast to other studies such as Arora et al. [3], Sawke et al. [5] and Mujeeb et al. [7] which was observed to be 0.3%, 0.5%, and 0% respectively.

Majority of the donors were males, which is comparable to the study done by Kulkarni et al. [7], Rao, et al. [9] and Arora et al.[4].

Conclusion

Transfusion of blood and its components is a double edge weapon as it is a life saving measures and some of the problems as transfusion transmitted disease etc. Hence a safe blood transfusion should be practiced by careful screening of donors and complete serological investigation of collected blood. By doing the complete serology workup of donated blood will find out the possible transfusion transmitted disease and judicial use of transfusion of blood will lead to safe blood transfusion practice.

References

1. Irshad M, Peter S; Spectrum of viral hepatitis in thalassemic children receiving multiple blood blood transfusion .Indian J Gastroenterol 2002;21:183-4