ABSTRACT... drmayubkhan@hotmail.com  
Objective: To know the prevalence of ABO and Rhesus blood groups. 
Design: Observational cross sectional study. Setting: Blood transfusion Center Tehsil Headquarter Hospital Liaquatpur. 
Subjects and Methods: The data of blood donors from 2001 to 2003. Results: Total numbers of donors studied were 1389. The commonest ABO blood group was O present in 44.56% (CL 41.97% - 47.20%) followed by B in 32.54% (CL 30.13% - 35.06%), A in 20.88% (CL 18.82% - 23.10%) and AB in 2.02% (CL 1.39% - 2.91%) donors while 90.35% (CL 88.68% - 91.80%) donors were Rh +ve and 9.65% (CL 8.20% - 11.32%) were Rh -ve. The commonest ABO +ve group was O +ve present in 40.03% (CL 37.48% - 42.69%) followed by B +ve in 30.31% (CL 27.95% - 32.78%), A +ve in 18.21% (CL 16.27% - 20.34%) and AB +ve in 1.8% (CL 1.21% - 2.66%) donors. The most common ABO -ve was O -ve present in 4.54% (CL 3.56% - 5.77%), A -ve in 2.66% (CL 1.93% - 3.66%), B -ve in 2.23% (CL 1.57% - 3.17%) donors. Conclusion: Blood group O is the commonest ABO blood group and 90.35% are RH +ve in this area. 
Key Words: ABO blood group, Rhesus blood group, Prevalence, Blood donors
INTRODUCTION
In human beings, 19 blood groups systems with more than 200 antigens have been identified. In clinical practice common blood groups are ABO and Rh. The gene for ABO group is present on chromosome 9 while for Rh system it is on chromosome 1. The Rh system is one of the most polymorphic of the human blood groups. More than 40 different antigens have been identified, five are common known as D, C, c, E and e.

The study of blood grouping is very important as it plays an important role in genetics, blood transfusion, forensic pathology and may have some association with diseases like duodenal ulcer, diabetes mellitus, urinary tract infection, Rh incompatibility and ABO incompatibility of newborn.

As blood group determination is important in clinical practice it was felt to know the prevalence of different blood groups in this area.

SUBJECTS AND METHODS
It is an observational cross sectional study. The data was collected from the record of Blood Transfusion Center Tehsil Hospital Liaquatpur. The blood groups of donors of either sex presenting from Jan 2001 to December 2003 were studied.

The blood samples were collected by finger prick in most cases but occasionally by venepuncture. ABO and Rh blood groupings were done by agglutination test using anti-A, anti-B and anti-D human sera. The donors with more than once entered in the record were included once for the study.

The Graph pad software computer program was used for statistical calculations. 95% confidence intervals was taken to define normal range.

RESULTS
Total donors included for the study were 1389. Table-I shows the details of prevalence of ABO blood grouping.

<table>
<thead>
<tr>
<th>Blood group</th>
<th>Donors screened</th>
<th>Prevalence (%)</th>
<th>Confidence limits (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>290</td>
<td>20.88</td>
<td>18.82% - 23.10%</td>
</tr>
<tr>
<td>B</td>
<td>452</td>
<td>35.54</td>
<td>30.13% - 35.06%</td>
</tr>
<tr>
<td>AB</td>
<td>28</td>
<td>2.02</td>
<td>1.39% - 2.91%</td>
</tr>
<tr>
<td>O</td>
<td>619</td>
<td>44.56</td>
<td>41.97% - 47.20%</td>
</tr>
</tbody>
</table>

Table II. Rhesus Blood Grouping

<table>
<thead>
<tr>
<th>Rhesus blood group</th>
<th>Total donors</th>
<th>Prevalence (%)</th>
<th>Confidence limit (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ve</td>
<td>1255</td>
<td>90.35</td>
<td>88.68% - 91.80%</td>
</tr>
<tr>
<td>-ve</td>
<td>134</td>
<td>9.65</td>
<td>8.20% - 11.32%</td>
</tr>
</tbody>
</table>

Table III. ABO and Rhesus Blood Distribution

<table>
<thead>
<tr>
<th>Blood group</th>
<th>Total donors</th>
<th>Prevalence (%)</th>
<th>Confidence limits (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A +ve</td>
<td>253</td>
<td>18.21</td>
<td>16.27% - 20.13%</td>
</tr>
<tr>
<td>B +ve</td>
<td>421</td>
<td>30.31</td>
<td>27.95% - 32.78%</td>
</tr>
<tr>
<td>AB +ve</td>
<td>25</td>
<td>1.8</td>
<td>1.21% - 2.66%</td>
</tr>
<tr>
<td>O +ve</td>
<td>556</td>
<td>40.03</td>
<td>37.48% - 42.69%</td>
</tr>
<tr>
<td>A -ve</td>
<td>37</td>
<td>2.66</td>
<td>1.93% - 3.66</td>
</tr>
<tr>
<td>B -ve</td>
<td>31</td>
<td>2.23</td>
<td>1.57 - 3.17%</td>
</tr>
<tr>
<td>AB -ve</td>
<td>3</td>
<td>0.22</td>
<td>0.04% - 0.67</td>
</tr>
<tr>
<td>O -ve</td>
<td>63</td>
<td>4.54</td>
<td>3.56% - 5.77%</td>
</tr>
</tbody>
</table>

DISCUSSION
In this study, the commonest ABO blood group was O followed by B and A. Most of the studies in Pakistan gave the same general pattern of prevalence while other studies showed B to be the most prevalent blood group. But non of the studies showed A to be the most common. International studies showed the same pattern. But other studies showed O to be the most
prevalent, followed by A and only one study\textsuperscript{19} showed equal prevalence of O and A. Blood group B was the most prevalent in one study\textsuperscript{26} while another study\textsuperscript{21} showed A to be the most prevalent.

In this study 90.35\% donors were Rh+ve and 9.65\% Rh-ve. The other Pakistani studies\textsuperscript{4,5,10,11,22,23} showed a prevalence of Rh-ve 4.5\%-10.77\% while international studies\textsuperscript{13-21,24} showed a prevalence of 3.33\%-5.5\%.

The survey carried out in the population of different cities of Pakistan (Larkana, Jamshoro, Hyderabad, Karachi) and in different ethnic groups (Abro, Noohani and schedule cast Hindus) showed there was no constant pattern except the general fashion of blood group distribution i.e. the O group had the highest frequency, A and B were in the mid and AB blood group was the least of all\textsuperscript{25}. The prevalence of blood groups was different in different racial/ethnic groups of USA\textsuperscript{26} and different races living in Nairobi\textsuperscript{27}. Majeed et al\textsuperscript{12} and Hussain et al\textsuperscript{12} also showed different blood groups in different ethnic groups. It may be the reason to have different blood grouping at different parts of world.

In conclusion, general pattern of ABO and Rh blood grouping in this area is nearly same as in other parts of Pakistan.

REFERENCES


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Today’s lesson; effects tomorrow