Short Communication

Prevalence of ABO & Rh blood groups in patients visiting Malla Reddy Health City, Suraram, Hyderabad

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ABSTRACT:

Background: Blood groups of different people have different antigenic and immune properties, so that, antibodies in the plasma of one blood react with antigens on the surface of the red cells of another blood type. If proper precautions are taken then transfusion reactions can be prevented. ABO and Rh are important. They are likely to cause blood transfusion reactions.

Objectives: Study was carried out to determine the frequency and distribution of ABO and Rh Blood groups in patients visiting Malla Reddy Health City, Suraram, Telangana.

Methods: Study was carried out from Dec., 2015 to May 2016. Comprised of 5000 subjects visiting Pathology Lab. Blood groups were determined by direct agglutination method by using antisera.

Results: Percentage of distribution of ABO blood groups was in order of O (37.90%), B (31.88%), A (21.80%) & AB (8.42%). Percentage distribution of Rh Positive (95.34%) & Rh negative (4.66%).

Conclusion: Commonest blood group in this study was O Rh positive & least common was AB Rh negative.

Key Words: Blood groups ABO, Rhesus (Rh) Rh+, Rh-, Percentage %

INTRODUCTION:

Blood group of different people have different antigenic and immune properties, so that, antibodies in the plasma of one blood react with antigens on the surface of the red cells of another blood type. If proper precautions are taken then transfusion reactions can be prevented.¹ Nearly 700 erythrocyte antigens are described and organized into 30 Blood group systems by the international society of blood transfusion ISBT of which ABO and Rh are important.² They are likely to cause blood transfusion reactions. The discovery of ABO blood group by Karl Landsteiner was an important achievement in the history of blood transfusion that was followed by discovery of Rh (D) antigen.³,⁴ Blood groups are genetically determined and are inherited in a Mendelian fashion and are useful in paternity testing.⁵ ABO and Rh (D) is useful in selecting matched blood during blood transfusion, organ transplantation. They are known to have association with certain diseases like duodenal ulcers, Diabetes Mellitus, Urinary Tract Infections, Rh and ABO incompatibility of newborn.⁶ ABO blood group system classifies Blood groups into four different types A, B, O and AB. Rh system into Rh positive and Rh negative. Frequency of blood groups varies in people belonging to different communities from one population to another.⁷ The success of blood transfusion depends on ensuring the compatibility of the blood types between donor and recipient. Thus the knowledge about the distribution of blood groups at regional level will be helpful in effective management of blood banks and safe blood transfusion services.⁸ They are not only important in relation to blood transfusion and organ transplantation, but also can be utilized in genetic research, anthropology and tracing ancestral relations of humans.⁹, 10, 11 Present study was planned with the aim of determining distribution of A, B, O & AB & Rh Blood groups.

MATERIAL & METHODS:

A cross sectional Study (hospital record based) was carried out in Malla Reddy Health City from Dec, 2015 to May, 2016. 5000 subjects (both males and females) visiting the Pathology Laboratory for routine investigations during study period were included. Permission of Ethical Committee of the Institute and consent of Head of the department of Pathology was taken.

ABO & Rh blood grouping was done by using commercially available antisera monoclonal (ERYSCREEN TM TULIP DIAGNOSTICS LIMITED KIT INDIA). Blood was collected by aseptic precautions. Blood group was determined by direct agglutination method by using antisera. Particulars of each subject were taken in data collection sheet.

Measurement Tools:
Slide method: A drop of commercially available antisera A, B, and D were mixed with a drop of blood sample placed on the slide and examined for agglutination after 2 minutes. Rh blood group was further confirmed under microscope. Blood groups were determined on the basis of presence or absence of agglutination. 

The blood group data was recorded in the proforma, tabulated and analyzed. Percentage of prevalence of various blood groups A, B, AB, O and Rh +ve or Rh –ve was done and results were tabulated.

**Statistical analysis:** The data was entered in Microsoft Excel Worksheet. Proportions were used to analyze the results.

**RESULTS:**

<table>
<thead>
<tr>
<th>Blood group type</th>
<th>Rh +ve</th>
<th>Rh-ve</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1044</td>
<td>46</td>
<td>1090</td>
</tr>
<tr>
<td></td>
<td>(20.88%)</td>
<td>(0.92%)</td>
<td>(21.80)</td>
</tr>
<tr>
<td>B</td>
<td>1525</td>
<td>69</td>
<td>1594</td>
</tr>
<tr>
<td></td>
<td>(30.55%)</td>
<td>(1.38%)</td>
<td>(31.88)</td>
</tr>
<tr>
<td>AB</td>
<td>390</td>
<td>31</td>
<td>421</td>
</tr>
<tr>
<td></td>
<td>(7.80%)</td>
<td>(0.2%)</td>
<td>(8.42)</td>
</tr>
<tr>
<td>O</td>
<td>1808</td>
<td>87</td>
<td>1895</td>
</tr>
<tr>
<td></td>
<td>(36.16%)</td>
<td>(1.74%)</td>
<td>(37.90)</td>
</tr>
<tr>
<td>Total</td>
<td>4767</td>
<td>233</td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>(95.34%)</td>
<td>(4.66%)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

**DISCUSSION:**

The distribution of A, B, O and Rh Blood group varies regionally, ethnically and from one population to other.

<table>
<thead>
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<th>Blood group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rh+ve</td>
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</tr>
<tr>
<td>Rh-ve</td>
<td>233</td>
</tr>
<tr>
<td>Total</td>
<td>5000</td>
</tr>
</tbody>
</table>

The Rh positives were 95.34% and Rh negative were 4.66% as per table 2.

**REFERENCES:**

4. Moollison PL. The genetic basis of the Rh blood group system. Transfusion 1994;34(40);539-41.

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