Common and Weak Subgroups of Blood Group A

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COMMON SUBGROUPS

• A1 (~80%) and A2 (~20%)
• Diagnostic identification
• Antigens: Relative amount of H antigen present varies
  Biochemical characteristics varies
• Transfusion issues
WEAK SUBGROUPS

- Many different ‘weak’ subgroups
- Antigens: Relative amount of H antigen present varies
  Biochemical characteristics varies
- Diagnostic identification
- Transfusion issues

<table>
<thead>
<tr>
<th>Phenotypes</th>
<th>RBC Antigen Density</th>
<th>anti-H</th>
</tr>
</thead>
<tbody>
<tr>
<td>A_1</td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td>A_2</td>
<td>29%</td>
<td>3+</td>
</tr>
<tr>
<td>A_3</td>
<td>3.6%</td>
<td>3+</td>
</tr>
<tr>
<td>A_x</td>
<td>0.6%</td>
<td>4+</td>
</tr>
</tbody>
</table>
A3 DIAGNOSTIC PRESENTATION

Forward mixed field (dcp) group A with reverse group A
Ax DIAGNOSTIC PRESENTATION

Forward group O, reverse group A

Image: Sims (2016) Ax Diagnostic Presentation
SUMMARY

• Many different subgroups
• ABO discrepancy checklist
• Weak subgroup occurrence
• Transfusion issues

<table>
<thead>
<tr>
<th>Phenotypes</th>
<th>anti-A</th>
<th>anti-AB</th>
<th>anti-H</th>
<th>RBC Antigen Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>A₁</td>
<td>4⁺</td>
<td>4⁺</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>A₂</td>
<td>4⁺</td>
<td>4⁺</td>
<td>3⁺</td>
<td>29%</td>
</tr>
<tr>
<td>A₃</td>
<td>2⁺ mf</td>
<td>2⁺ mf</td>
<td>3⁺</td>
<td>3.6%</td>
</tr>
<tr>
<td>Aₓ</td>
<td>wk/0</td>
<td>2⁺</td>
<td>4⁺</td>
<td>0.6%</td>
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</tbody>
</table>
REFERENCES


QUESTIONS

THANK YOU:
• Sue Finch
• Paul Ellery
• Jon Sims
• Seqirus