Full house Rh antibodies-providing blood

Or “Ask the Audience”
Case 1: Transfused patient

- Patient transfused 2 weeks prior
- Rh phenotype mixed field
- Weak DAT+
- Anti-E detected
- Eluate negative
- Hospital historic A+, RCI A+
Phenotype: C, c, E, e, K, ctl (DiaClon) (5011)

Anti-C
50110:5206/20.05/466275
Reaction comment:

Current results

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<thead>
<tr>
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<th>#1</th>
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<tbody>
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<td>Anti-C</td>
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<td>Anti-c</td>
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<td>Anti-E</td>
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<td>Anti-A</td>
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<td>Anti-B</td>
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<tr>
<td>Anti-D VI</td>
<td>+++</td>
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</tr>
</tbody>
</table>

Result

A Rh D positive

AB0: A
Phenotype: [ ]
Rhesus-D: Rh D positive
Kell:

ABS: [ ]
DAT: [ ]
Auto ctrl.: [ ]
Antibodies / other antigens: [ ]

Details...
Would you..?

- A) Select A + E- K-
- B) Select A+ K –
- C) Select A+ C- E- K-
- D) Select A- (CDE-) K-
Case 2: Surgical Patient

- 40 yr old female for surgical procedure
- Patient O+ c-, E-, K- Cw-
- Patient has IAT and enzyme IAT active anti-Cw
- No other alloantibodies detected
Would you select

• A) O+ c-,E-,K- Cw-
• B) O+ c-,E- K- xm comp
• C) O+ K- xm comp
• D) Send to RCI
BSH guidelines state

• 7.10.4. Patients with other Rh antibodies should be additionally matched for C, c, E and e in order to prevent further Rh allo immunisation, provided this does not impede delivery of effective transfusion support

• Our policy is to only select ABO D and K compatible (units are xm compatible) based on table 4… Which only specifies C,D,E,c and e.

<table>
<thead>
<tr>
<th>Rh antibody</th>
<th>Probable genotype/phenotype of patient</th>
<th>Donor red rell (Rh) selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-D</td>
<td>rr (ccddee)</td>
<td>D- C- E- (rr)</td>
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<tr>
<td></td>
<td>r'r (Ceddee)</td>
<td>D- C- E- (rr)</td>
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<td></td>
<td>r''r (ceddee)</td>
<td>D- C- E- (rr)</td>
</tr>
<tr>
<td>Anti-E</td>
<td>R,R₁ (CCDee)</td>
<td>c- E- (R₁R₁)</td>
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<tr>
<td></td>
<td>R,r (CcDee)</td>
<td>E-</td>
</tr>
<tr>
<td></td>
<td>R,r or R,R₀ (ccDee)</td>
<td>C- E- (R₀ or rr)</td>
</tr>
<tr>
<td></td>
<td>rr (ccddee)</td>
<td>D- C- E- (rr)</td>
</tr>
<tr>
<td></td>
<td>r'r (Ceddee)</td>
<td>D- E- (rr)</td>
</tr>
<tr>
<td>Anti-C</td>
<td>R,R₂ (ccDEE)</td>
<td>C- e- (R₂R₂)</td>
</tr>
<tr>
<td></td>
<td>R,r (ccDEe)</td>
<td>C-</td>
</tr>
<tr>
<td></td>
<td>R,r or R,R₀ (ccDee)</td>
<td>C- E- (R₀ or rr)</td>
</tr>
</tbody>
</table>
Same case but patient has additional anti-E

- A) O+ c-,E-,K- Cw-
- B) O+ c-,E- K- xm comp
- C) O+ K- xm comp
- D) Send to RCI
Case 3 : Sickle Exchange

- Sickle patient, no allo antibodies
- Group O+
- Extended phenotype done C-, E-, K-, Fya-b- Jka-
- Exchange units required (HbS-, < 7 days)
Do you…

A) Select O+ K-
B) O+ C- E- K-
C) O- CDE- K-
D) O + C- E- Fya-b- Jka-
E) O- CDE- K- Fya-b- Jka-
BSH Guideline 7.18. Patients with sickle cell disease

• 7.18.3. As a minimum, red cells should be matched for Rh and K antigens.

• 7.18.4. R0 blood should be selected for patients who are R0 if available, otherwise rr.

• Ideal world, issue fully matched red cells.
Case 4: Auto, No No

- AIHA patient
- Multi-transfused
- A RhD+ c-E-K-
- Auto anti-C+e
Case 4: Auto, No No

Would you xm

A) C-,e-,K-
or
B) c-,E-,K-
Ok then….

What if transfusion frequency has increased and patient reportedly haemolysing?

What if not maintaining an increment following trx of c-E-K- units?
Case 5: Must be Nuts?

- Patient requiring urgent 6 unit transfusion out of hours
- A+ E- K-
- RCI identified anti-N active by IAT
- Recommendation is xm compatible, antigen neg not required. (BSH)
- Who would…
Must be Nuts!

Ask for

A) A+ (just order more)
B) A+ N- (See if Hospital services notice)
C) A+ N- Historic (not on the bag but saves me driving into Sheffield, spending an hour typing the bag, you paying an oncall charge, and the patient gets transfused 2 hours faster)....
Case 6: ...And finally!

- Post BMT O+ to A+
- Group: weak dual population with anti-A
- DAT 1+ : IgG and C3d
- BioRad IAT: looks like anti-E with 2+ auto
- Rh phenotype inconclusive but “looks” like c-, E-
- 1 unit O+ c-, E- (R1R1) K- issued as compatible
Getting worse..

- DAT: 5+ IgG, 1+ IgA, 4+ IgM, 1+ C3c, 4+ C3d (control neg)
- IAT 3+ pan reactive
- Non-papainised adsorbtion ..all alloantibodies excluded..
  
  But

- Previous anti-E not detected
- Apparent anti-C appeared.
So... Hb 59 need 2 units asap

A) Issue O+ c- E- K- (but these are 2+ incompatible)
B) Issue O CDE- K- (compatible xm)

Bear in mind, previous anti-E, newly formed anti-C (could be auto or allo)
Patient still showing signs of incomplete engraftment in the ABO group
New information

- Genotype predicts c-, E- K-, advised by consultant
- Anti-C now confirmed as Auto
  So
  A) Switch back to c-, E-, K
  Or
  B) Continue with CDE- K-