Non-Haemolytic Reactions
What is the role of Antibody Tests?

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Background

• Requests for granulocyte, HLA and platelet antibody testing are received following SFNHTR.
• Reactions ameliorated with plasma-reduced blood components in some.
• If not, guidance available for further investigation and management
Algorithm for investigations of severe non-haemolytic transfusion reactions

Severe febrile non-haemolytic transfusion reaction

Bacterial Contamination

Yes

Contact local blood centre for medical consultant advice

If bacterial contamination likely seek advice from national transfusion microbiology laboratory

No

If temperature rises less than 1.5°C, the observations are stable and patient is otherwise well, give paracetamol. Re-start transfusion at slower rate and observe more frequently

Reaction persists or temperature rises more than 1.5°C

Yes

Contact local blood centre for medical consultant advice

No

Nothing further

Alter specification of component, i.e. plasma-reduced/washed

Reaction persists

Yes

Test for HLA, HNA, HPA antibodies

Positive

Provide better matched products

No

Negative
Aims

• Were guidelines being followed?

• Were results impacting on clinical practice?
Methods

• Retrospective analysis of 2 yrs requests
• Proforma devised - steps in algorithm
• Additional information
  – Medical condition
  – Referring department
  – Referring hospital
  – NHSBT region the request was from
Methods

• Subsequent paper and electronic searches
  – Request forms
  – Results of tests
  – Issue of antigen-negative products
Results

- 104 requests for analysis (one a week)
- In only 7/104 (6.7%) tests lead to subsequent issue of matched products

- 8 specified fever exceeding the threshold
- 2 mentioned paracetamol usage; 3 persistence on stopping transfusion
- 6 documented discussion with an NHSBT Consultant
- 2 stated consideration of bacterial contamination (BC)
- No request forms stated result of trial plasma-reduced products
Results

• Department
  – 50% Haematology directly
  – 20% Blood bank (?department referring)
  – 30% Others (Paeds, O&G, ITU etc)
Referring Region

- North
- South West
- South East

Number of referrals vs Number of hospitals

One, Two, Three, Four, Five, Six, Seven, Eight, Nine, Ten

0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

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## Results

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Number of Requests</th>
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<tbody>
<tr>
<td>Positive screens for HLA-antibodies</td>
<td>49</td>
</tr>
<tr>
<td>HLA-matched products issued</td>
<td>7</td>
</tr>
<tr>
<td>Granulocyte-specific antibodies detected</td>
<td>5</td>
</tr>
<tr>
<td>HNA-matched products issued</td>
<td>0</td>
</tr>
<tr>
<td>Positive platelet immunofluorescence tests</td>
<td>7</td>
</tr>
<tr>
<td>HPA-matched products issued</td>
<td>0</td>
</tr>
</tbody>
</table>
Conclusions

• Little evidence guidance is being followed in the majority of cases

• In only 7 cases (from 104) did test results lead to issue of matched products - the tests impact on the care of very few
Recommendations

• Define “Severe”
  – Life-threatening hypotension or 20mmHg from baseline, and/or hypoxia requiring oxygen support not fulfilling diagnostic criteria for other transfusion complications.

• All suspected cases discussed with NHSBT Consultant before work begun
  – Bacterial contamination
  – Trial of washed products
Recommendations

• Sequential testing for antibodies
  • HLA & HPA then HNA
  • Takes account of frequency of positive findings which alter practice and ability to match products

• Reaudit