Case Studies

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Case 3
Case 3

- An 86-year-old female with chronic myeloid leukaemia (CML) and Hb 8.5g/dl admitted for transfusion in haematology day unit
- Longstanding congestive heart failure. Pitting oedema up to buttocks despite oral diuretics
- Given 2 units of red cells over approximately 5 hours.
Case 3

- On getting up to go home she became breathless, tachycardic (pulse 140 bpm) and hypertensive (BP 192/80), with a reduced O2 saturation of 78%. The jugular venous pressure (JVP) was 5cm raised and she had bilateral basal crepitations.

- The CXR showed bilateral fluffy upper zone shadowing and an enlarged heart
Case 3 - Q

What is the most likely diagnosis? (Select 1 option)

1. TRALI (transfusion-associated lung injury)
2. TACO (transfusion-associated circulatory overload)
3. Chest infection from transfusion
4. CMV pneumonitis
Case 3 - A

What is the most likely diagnosis? (Select 1 option)

1. TRALI (transfusion-associated lung injury) 15
2. TACO (transfusion-associated circulatory overload) 171
3. Chest infection from transfusion 3
4. CMV pneumonitis 2
Case 3

- Clinical diagnosis was TACO
- She was admitted and treated with IV diuretics and oxygen support with continuous positive airway pressure (CPAP), but she continued to deteriorate and died.
Learning Points

• TACO is probably much under-diagnosed and under-reported
• Now 2\textsuperscript{nd} most common cause of transfusion-related death reported to FDA
• Older patients with cardiac and/or renal impairment are at particular risk, but can occur in younger patients (may be more than just fluid overload)
## Learning Points

<table>
<thead>
<tr>
<th></th>
<th>TRALI</th>
<th>TACO</th>
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<tbody>
<tr>
<td>BP</td>
<td>Low or normal</td>
<td>Normal or high</td>
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<tr>
<td>Temp</td>
<td>Normal or high</td>
<td>Normal</td>
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<tr>
<td>PA pressure</td>
<td>Low or normal</td>
<td>high</td>
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<td>Echo</td>
<td>Normal</td>
<td>Abnormal</td>
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<tr>
<td>BNP**</td>
<td>Low</td>
<td>High</td>
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<tr>
<td>Diuretics</td>
<td>Worsen</td>
<td>Improve</td>
</tr>
<tr>
<td>Fluid Load</td>
<td>Improves</td>
<td>Worsens</td>
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</tbody>
</table>

** pre:post-transfusion ratio >1.5 – 80% sens, 90% spec
Learning Points

- Not necessarily large transfusions – of 18 cases of TACO in non-bleeding patients in 2010 SHOT Report, two had 1 or less unit of red cells and fifteen had 2 or less
- This fits with international reports of TACO
Learning Points

- Risk factors include: age > 70, small body size, pre-existing heart failure, chronic renal impairment and hypoalbuminaemia
- Crucial to monitor these patients carefully during transfusion (including rate of Tx)
- Consider: slower transfusion, smaller transfusion (especially in small patients) and diuretic cover