BLOOD PRODUCT SUPPORT FOR ECLS/VAD PATIENTS

PURPOSE

Good communication between the RCH Blood Bank, Hospital Medical Offers and ECLS Nurse Specialists is the key to obtaining the best possible support from the RCH Blood Bank during the management of ECLS patients.

This document outlines the responsibilities of the Blood Bank Scientists, Hospital Medical Officers and the ECLS Nurse Specialists to facilitate timely provision of blood product support to patients on ECLS/VAD.

RESPONSIBILITY

<table>
<thead>
<tr>
<th>Position</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Medical Officer (HMO)</td>
<td>• Prescribe and document blood product orders per the RCH Blood Transfusion Procedure.</td>
</tr>
</tbody>
</table>
| ECLS Nurse Specialist     | • Place blood product orders per HMO’s prescription in patient’s records.  
                             | • Advise Blood Bank of patient’s expected blood product usage  
                             | • Advise Blood Bank of any planned procedures (chest exploration or decannulation)                                                        |
| Blood Bank Scientist      | • Telephone the ECLS Nurse Specialist twice a day (approx.0900hrs and 1700hrs) to:  
                             |   ◾ Notify what blood products are currently available for the patient.  
                             |   ◾ Advise any supply restrictions impacting blood product availability for the patient.  
                             |   ◾ Advise if new sample for pre-transfusion testing required.  
                             |   ◾ Ensure a weight based ‘ECLS kit’ is available at all times.  
                             |   ◾ Ensure that the blood products reserved for the patient are of the appropriate age.                                                   |

PROCEDURE

1. ECLS PACK

   • To facilitate timely provision of blood products a weight based ‘ECLS Pack’ will be assigned and maintained 24/7 for each ECLS patient by RCH Blood Bank:

<table>
<thead>
<tr>
<th>Blood products issued/reserved</th>
<th>&lt; 10kg</th>
<th>10-30kg</th>
<th>&gt;30kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECLS Pack</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red cells</td>
<td>2 adult +2 paed</td>
<td>2 adult</td>
<td>2 adult</td>
</tr>
<tr>
<td>Platelets</td>
<td>2 paed</td>
<td>2-3 paed or 1 adult</td>
<td>1 adult</td>
</tr>
</tbody>
</table>

2. DAILY COMMUNICATION

   • The Blood Bank Scientist will telephone the ECLS Nurse Specialist twice a day at 0900hrs and 1700hrs (approx.) to:

     ◾ advise what blood products are currently available for the patient and any supply restrictions impacting availability
3. BLOOD PRODUCT SUPPORT

3.1. Transfusion triggers for children on ECLS/VAD

- Haemoglobin <80 g/L
- Platelet Count <80 x 10^9/L unless otherwise advised

3.2. Red Cells

- **ALL ECLS patients** will receive IRRADIATED Red Cells (including all emergency cannulations).
- Note, NON-IRRADIATED Red Cells will be provided if MTP Procedure is activated.

3.3. Age and Type of Blood Products

- Blood Bank Scientists are responsible to ensure that the blood products reserved for the patients are of the appropriate age and in accordance with the weight based ECLS pack.
- Paediatric sized packs (paedi packs) are one adult sized pack (donation) split into four equal volumes of Red Cells, Platelets or Fresh Frozen Plasma (FFP). Use of paedi packs enables us to minimise patient exposure to multiple donors and adhere to maximum hang time for blood products (4 hours).

3.4. Ordering of Blood Products

- The RCH Blood Bank sources blood products from the Australian Red Cross Blood Service. Occasionally, supply restrictions imposed by the Blood Service will impact the inventory supplied to the RCH Blood Bank, especially of platelets. Advise the Blood Bank early if use of additional blood products (especially platelets) is anticipated so that additional products can be ordered from the Blood Service.
- The Blood Bank Scientists will endeavour to maintain a ‘complete’ ECLS/VAD pack for each patient at all times and will advise the ECLS Specialist Nurse if this is not possible due to supply restrictions.
- RCH Blood Bank maintains stocks of Fresh Frozen Plasma (FFP) and Cryoprecipitate (CRYO) - allow 30 minutes for thawing.

3.5. Blood Box

- The Blood Box is a validated container (esky) suitable for short term storage (up to 4 hours) for Red Cells at the point of care.
- The Blood Box is available to store Red Cells for up to 4 hours for ‘just in case’ specific blood requirements at bedside e.g. chest exploration, decannulation or circuit change.

3.6. ASBT Protocol

- The ASBT protocol enables us to omit repeated crossmatching for infants during the first 4 months of life, providing certain criteria are met.
- Once an infant is accepted on the ASBT Protocol, further samples are not required for pretransfusion testing for that admission; blood can be ordered by telephoning the Blood Bank.
3.7 Blood Product Support for ECLS/VAD Patients

FLOW CHARTS

1: Patient commencing ECLS/VAD

Rosella staff:
- Call Blood Bank ext. 55829 to order 1 Red Cell for circuit prime.
- Provide a pre-transfusion sample and request if required.
- Order any additional blood products req’d.
- Send ECLS/VAD Notification form to Blood Bank ASAP.
- Send Green Release Order card to Blood Bank when ready to receive Blood Products.

Blood Bank staff:
- Check if valid pretransfusion sample available & advise caller if sample req’d
- Irradiate and prepare 1 suitable adult Red Cell for circuit prime.
- Irradiated, Emergency, O neg Red Cells will be provided if req’d.
- Receive ECLS/VAD notification & display on Blood Bank white board
- Prepare weight based ECLS/VAD pack
- Additional blood products will be prepared if req’d
- Order additional blood products from the Blood Service if req’d
- Advise ECLS nurse & Haematologist if blood product supply issues exist

2: Daily Maintenance for ECLS/VAD patients

Routine situations..

Rosella staff:
- Discuss patient’s blood product requirements with Blood Bank staff daily at 0900 and 1700 (at least).
- Advise Blood Bank staff of further blood products required.
- Advise Blood Bank staff of any planned procedures for the day which may require blood product support.

Blood Bank staff:
- Call ECLS nurse at approx. 0900 & 1700 hrs to advise blood products available for patient (per weight based ECLS pack).
- Advise ECLS nurse & Haematologist if blood product supply issues exist.

If patient bleeding or requires circuit change or urgent procedure on ward or coming off ECLS....

Rosella staff:
- Advise Blood Bank staff of situation and order additional blood products if required.
- Order Blood Box for 4 hour storage of Red Cells on ward for 'just in case' specific blood requirements.
- Continue to advise Blood Bank of additional requirements if req’d

Blood Bank staff:
- Prepare additional blood products as ordered
- Order additional blood products from the Blood Service if req’d.
- Advise ECLS nurse & Haematologist if blood product supply issues exist

3: Patient off ECLS/VAD

Rosella staff:
- Call Blood Bank ext. 55829 to advise patient has come off ECLS/VAD
- Send ECLS/VAD Notification form to RCH Blood Bank ASAP.

Blood Bank staff:
- Upon receipt of ECLS/VAD notification form confirming patient is no longer on ECLS/VAD, Blood Bank staff will return all blood products reserved for patient to general inventory.
- Remove patient’s name & ECLS/VAD notification forms from Blood Bank white board.