**GUIDELINES FOR THE USE OF SPECIAL BLOOD COMPONENTS**

**Introduction**

All blood components are leucocyte depleted and contain <5x106 leucocytes per unit of red cells or adult therapeutic dose of platelets.

*Requirement for special blood components may cause a delay in provision. In a life-threatening emergency obtaining appropriate components must not jeopardise the immediate care of the patient.*

|  |  |  |
| --- | --- | --- |
|  | **IRRADIATED COMPONENTS**(RBC, PLATELETS, GRANULOCYTES**)** | **CMV NEGATIVE**(RBC, PLATELETS, GRANULOCYTES)  |
| Allogeneic bone marrow or stem cell donors | **Y:** Donors should receive irradiated blood components 7 days prior to and during the harvest | **N** |
| Allogeneic bone marrow or stem cell transplant | **Y:** From start of initiation of conditioning chemotherapy or radiotherapy. Continue until all of the following criterial are met: *1. >6 months have elapsed since date of transplant* *2. The lymphocyte count is more than 1 x109/l**3. The patient is free of active chronic GvHD**4. The patient is off all immunosuppression* | **N** |
| Patients (adult and paediatric) undergoing bone marrow OR peripheral blood stem cell collections for future autologous re-infusion  | **Y**: Patients should receive irradiated cellular blood components for 7 days prior to and during the bone marrow/stem cell harvest  | **N** |
| Autologous bone marrow transplant/stem cell transplant | **Y**: From initiation of conditioning chemo/radiotherapy until 3 months post-transplant (6 months if total body irradiation was used in conditioning) unless conditioning, disease or previous treatment determine indefinite duration, e.g. previous diagnosis of Hodgkins Lymphoma/ purine analogue TX | **N** |
| Chimeric antigen receptor t-cell (car-t) therapy | **Y:** For 7 days prior to harvest and for 3 months post infusion unless conditioning, disease or previous treatment determine indefinite duration, e.g. previous diagnosis of Hodgkins Lymphoma/ purine analogue TX | N |
| All donations from HLA matched donors or first or second-degree relatives (even if the recipient is immunocompetent) | **Y** | **N** |
| Patients treated with purine analogue drugs (fludarabine,cladribine,bendamustine, pentostatin) | **Y:** Requirement is lifelong | N |
| Patients with or with a history of Hodgkin’s lymphoma | **Y:** Requirement is lifelong | N |
| AlemtuzumabAnti-thymocyte globulin | **Y:** For duration of treatment only when used in haematology patients or patients with rare immune disorders (not required for MS or vasculitis)  | **N** |
| Severe T cell immunity syndromes | **Y** | **N** |
| Intrauterine transfusions  | **Y** | **Y** |
| Exchange transfusions in neonates | **Y** | **Y** |
| Top up transfusions in neonates | **Y:** For transfusions within 6 months of the expected date of delivery in neonates who have had an IUT or Exchange transfusion.  | **Y:** In neonates up to 28 days post expected date of delivery |
| Pregnant women | N | **Y:** For non-urgent transfusions, not including during delivery  |
| Granulocyte transfusions  | **Y** | **Y:** For CMV -ve recipients |
| Platelet transfusions | **Y**: Platelets transfused in utero to treat alloimmune thrombocytopaenia and top up platelet transfusions until 6 months after the expected date of delivery | **N** |

**Selection of Blood Components for Women of Child-bearing Potential, (<50 years)**

Women of child-bearing potential who are Rh D negative must only receive Rh D Negative blood components. For all women in this group C, E, & K negative red cells will be crossmatched. For Rh D positive women K negative, c, E negative units will be crossmatched if there are any in stock.

**Selection of Blood Components for elective transfusion during pregnancy**

In addition to the requirements stated above for women of childbearing potential and any other requirements, CMV negative red cells should be issued for elective transfusions. This does not apply to red cells requested to cover delivery.

**Sickle Cell Disease (SCD) and Thalassaemia**

Alloimmunization risk with these patients is high. Patients with these conditions should be phenotyped as fully as possible before their first transfusion. The blood sample should be fully phenotyped to include C, c, E, e, Cw, K, k, Jka, Jkb, Fya, Fyb, S, s. Red cells for transfusion should be matched with the patient for ABO, D, C, c, E, e, and K and be HbS negative for SCD. Antigen matching is not required for other antigens unless the patient has an antibody.

**Selection of Platelets**

The indications of **apheresis platelets** (collected from single donor) are for:

* Patient require HLA/HPA matched platelets
* Patients with platelet refractoriness
* Patients with neonatal alloimmune thrombocytopenia (NAIT)
* Patients under 1 years of age (STTx adds this automatically to the patient record)

The indications of **pooled platelets** (collected from the whole blood donation of 4-6 donors) are for:

* Any patients not included above for apheresis
* paediatric patient with recurrent reactions may be moved to pooled platelets on advice from haematologist or paediatrician

**Selection of blood for chronically transfused patients**

All new Haematology, Renal and Oncology (including paediatric) patients should be Rh and K typed prior to their first transfusion and receive Rh and K matched units.

**Patients receiving Daratumumab (DARA) (Anti-CD38), Isatuximab (Anti-CD38) and CAMELLIA (Anti-CD47)**

Daratumumab (anti-CD38), Isatuximab (anti-CD38) and CAMEILLA (anti-47) can be used as a treatment for patients with multiple myeloma. Patients receiving these treatments should have a full phenotype prior to starting on the treatment. This should include Rh (CcEe), K, k, Jk (a and b), Fy (a and b), MNSs. Antigen negative requirements for Rh (CcEe) and K must be added to the STTx record, as per chronically transfused patients. These treatments interfere with the IAT antibody screen and compatibility testing and so crossmatching will be performed at RCI.

**Washed Blood Components**

Used for patients with recurrent moderate/severe reactions to blood components after discussion with a consultant haematologist. These patients should be investigated for IgA deficiency

**Patients with HLA and HPA antibodies**

These patients should have platelets that are HLA or HPA matched following discussion with a consultant haematologist.