Special requirements in blood transfusion

Blood Transfusion Guideline

NHS Lothian

Purpose

This guideline describes the indications for provision of irradiated and cytomegalovirus (CMV) negative blood components.

Special requirements in blood transfusion

Irradiated Components

For at-risk patients, all red cell, platelet and granulocyte concentrates should be irradiated. It is not necessary to irradiate FFP, cryoprecipitate or fractionated plasma products.

Indications for irradiated components are:

- All intrauterine transfusions
- All exchange or top-up transfusions in infants where there has been a previous intra-uterine transfusion, until 6 months after the expected birth date
- Exchange transfusion, with no previous intra-uterine transfusion: irradiated blood is recommended provided this does not unduly delay transfusion
- Proven or suspected congenital immunodeficiency states (including Severe Combined Immunodeficiency (SCID), Di George's syndrome, Wiskott-Aldrich syndrome, purine nucleoside phosphorylase deficiency, reticular dysgenesis, cell-mediated immunodeficiency (not otherwise classified), primary T lymphocyte immunodeficiencies, adenosine deaminase deficiency, MHC Class I and II deficiency, leucocyte adhesion deficiency, immunodeficiency with eosinophilia, ataxia telangiectasia, chronic mucocutaneous candidiasis)
- All autologous bone marrow or peripheral blood stem cell transplant recipients from start of conditioning until at least three months after transplant (or until at least six months after transplant if total body irradiation has been given). The only exception is patients who have received treatment with daratumumab: in these patients non-irradiated blood components can be transfused if greater than 6 months from transplant
- All allogeneic bone marrow or peripheral blood stem cell transplant recipients from start of conditioning until a minimum of six months after transplant; possibly longer at the discretion of the haematologist e.g. chronic GvHD
- Immune effector cell therapy (IECT) recipients from start of conditioning, indefinitely
- Blood transfused to allogeneic bone marrow or peripheral blood stem-cell donors for 7 days before the harvest and until after the last collection

- Blood transfused to patients undergoing autologous bone marrow harvest for the 7 days before the harvest and until after the harvest
- Blood transfused to patients undergoing autologous peripheral blood stem-cell mobilisation from commencement of the mobilising chemotherapy regimen and until the last collection
- All blood transfused to lymphocyte donors for the 7 days before the harvest
- All blood transfused to patients undergoing autologous lymphocyte collection for the 7 days before the harvest
- Patients with Hodgkin's disease, indefinitely
- Patients with B-cell lymphoma, unclassifiable, with features intermediate between diffuse large B-cell lymphoma and classic Hodgkin lymphoma (a subset of which are also commonly known as 'mediastinal grey zone lymphoma')
- Patients treated with the purine analogue drugs Fludarabine, Deoxycoformycin, Cladribine, Clofarabine and Bendamustine, indefinitely
- All transfusions from first- or second-degree relatives, even if the patient is immunocompetent
- All HLA-matched platelet transfusions, even if the patient is immunocompetent
- All granulocyte transfusions, which must then be transfused with minimum delay
- Patients receiving ALG, ATG, CAMPATH or Alemtuzumab (when given as SACT) indefinitely

Cytomegalovirus (CMV) Negative Components

- Pregnant women antenatally (pre-birth only): if CMV negative components are not readily available and a delay will compromise the mother or baby, CMV random components (i.e. untested) are an acceptable alternative
- Intra-uterine transfusion irrespective of the CMV status of the mother
- All blood transfusions for infants up to 28 days post expected birth date (paedipaks will routinely be CMV negative)
- CMV negative granulocyte components should be provided to CMV negative patients