Clinical Guidance on Use of Irradiated Blood Components

All blood components containing viable lymphocytes can potentially cause fatal Transfusion-Associated Graft-versus-Host-Disease (TA-GvHD). Irradiation is therefore relevant for **red cells, platelets, whole blood & granulocytes.**

Indications for irradiated blood components (if in doubt seek expert advice)

Always check for currency as new therapies are introduced

Allogeneic haemopoietic stem cell transplant and harvest

- from commencement of conditioning chemoradiotherapy
- continue while patient receives graft-versus-host disease prophylaxis
- allogeneic blood transfused to stem cell donors 7 days prior to or during harvest

Autologous bone marrow or stem cell harvest and transplant

- during and for 7 days before bone marrow / stem cell harvest
- from initiation of conditioning chemo / radiotherapy until 3 months post-transplant (6 months if total body irradiation was used)

Hodgkin lymphoma for all ages, at any stage of the disease, for life

All severe T lymphocyte immunodeficiency syndromes (diagnosed or suspected)

- start as soon as diagnosis suspected, in uncertainty, consult clinical immunologist
- high index of suspicion is required in infants and children with cardiac anomalies, dysmorphic features, craniofacial abnormalities, hypocalcaemia and lymphopenia

Patients receiving specific agents:

Purine analogue drugs (fludarabine, cladribine, and deoxycoformicin / pentostatin) and new and related agents (e.g. bendamustine and clofarabine) – all protocols

- indefinitely for treated patients

Alemtuzumab (MabCampath®, Lemtrada®) (anti-CD52) plus others

- review as new potent immunosuppressive drugs and biologicals are introduced

Specific types of blood products:

Human Leucocyte Antigen (HLA)-selected / matched components

- all components even if patient is immunocompetent

Transfusions from 1st- or 2nd-degree relatives

- all components even if patient is immunocompetent

Granulocytes for recipients of any age

Intrauterine and subsequent transfusions; neonatal exchange transfusion:

Intrauterine transfusions (IUT)

- including all subsequent transfusions post-delivery until 6 months after expected date of delivery (40 weeks gestation)

Neonatal exchange transfusions (ET)

- previous IUT or donation from a 1st- or 2nd-degree relative
- other ET cases provided this does not unduly delay transfusion

Neonatal alloimmune thrombocytopenia (NAIT)

- IUT of platelets and any subsequent transfusion of red cells or platelets until 6 months after expected date of delivery (40 weeks gestation)

⚠ Treating / prescribing clinician must ensure the transfusion laboratory and patient / family are aware of need for irradiated blood components; document this in the alert section of medical record and all transfusion requests and relevant prescriptions.

The above indications are taken from the SA Health Clinical Guidance document at inside.sahealth.sa.gov.au/ and as contained in the tool at http://www.optimalblooduse.eu/app/

BloodSafe