Irradiated Blood Components Guidelines

Who

Medical Staff

Blood Bank Scientists

Division 1 Registered Nursing Staff

Expected Outcomes

That no patient receiving a blood component will acquire Transfusion Associated Graft versus Host Disease (TA-GVHD).

Precautions

Irradiation at the recommended dose **WILL NOT** prevent viral or bacterial transmission and is not a substitute for CMV negative or leucocyte depleted components. Irradiated components have the same risk in causing febrile reactions and HLA alloimmunisation as any other non-leucocyte depleted blood components.

See 'CMV-Negative Blood Components' and 'Leucocyte Depleted Blood Components' guidelines.

Why

Cellular blood components are irradiated to reduce the risk of Transfusion Associated Graft versus Host Disease (TA-GVHD). TA-GVHD is a rare but often fatal complication due to the survival and engraftment of viable donor lymphocytes. The donor lymphocytes damage the bone marrow, skin, liver and other organs.

Irradiation should be continued indefinitely in all eligible recipients apart from infants.

Infants require irradiation for the duration of the initial medical management. There is no necessity to irradiate blood for routine 'top-up' transfusions of premature or term infants unless either there has been a previous intrauterine transfusion or the blood has come from a blood relative, in which case the blood must be irradiated.

Clinical Indications for Irradiated Blood Components

Definite Indication

- Allogeneic and Autologous Bone Marrow/Peripheral Blood Stem Cell
- Transplant recipients
- Congenital Cellular Immunodeficiency Disorders
- Intrauterine transfusions and all subsequent neonatal exchange
- transfusions
- Aplastic anaemia receiving immunosuppressive therapy
- Hodgkin's Disease
- Recipients receiving purine analogues (Cladribine, Fludarabine, Pentostatin) with associated immunosuppression
- All directed donations from blood relatives
- HLA matched single donor platelets
- Granulocyte transfusions

Possible Indication

- T Cell malignancies
- Acute leukaemia or malignancies
- Chronic myeloid leukaemia
- Solid tumours receiving myeloablative chemotherapy
- Long term or high dose steroid therapy
- Antithymocyte globulin
- Solid organ transplant recipients
- Premature infants weighing less than 1200g

No Indication

- AIDS or HIV infection (where none of the above apply)
- Congenital Humoral Immune Deficiency
- Term infants (where none of the above apply)
- Thalassaemia
- Haemophilia

If an adverse event (actual or 'near miss') is associated with the administration of irradiated blood components, document details in the health record and complete an incident report.

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SH Policy	Patient Care	***ACHS***	Continuum of Care
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