Use of Irradiated Blood Components

Applicability
This document applies to all AHS Laboratory Services and laboratories administered by Covenant Health.

Purpose
This policy provides direction for the processes and procedures to effectively aid in the selection of irradiated cellular blood components for appropriate patients in Alberta.

Background
To reduce the risk of Transfusion Associated Graft Versus Host Disease (TA-GVHD) in immunocompromised recipients, some patients must be transfused with cellular blood components that have been irradiated.

It is critical to identify to the Transfusion Service any patients falling into the above category, so appropriate blood products are provided. The physician and patient care units have the primary responsibility of identifying these patients. Physician and patient care units are also responsible for notifying the Transfusion Service when irradiated cellular blood components are no longer required.

Policy
Orders for irradiated blood components that fall outside of the indications listed in the table below will be assessed by a Pathologist/Transfusion Medical Director on a case by case basis. The following table is based on international guidelines, and represents a minimum standard. Transfusion services and individual physicians may choose to irradiate products for additional patient groups based on local transfusion committee recommendations.

<table>
<thead>
<tr>
<th>Patient Types</th>
<th>Irradiated Blood Component Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetus/Neonate receiving intrauterine or exchange transfusion (including top up transusions following intrauterine or post natal exchange)</td>
<td>Yes</td>
</tr>
<tr>
<td>Neonates / Pediatrics with cardiac malformations</td>
<td>Yes*</td>
</tr>
<tr>
<td>All neonates not captured in above Patient Types</td>
<td>As required per local procedures</td>
</tr>
<tr>
<td>Suspected or confirmed (T cell) congenital immune deficiency (i.e. Wiskott-Aldrich, Di Georges, SCID)</td>
<td>Yes</td>
</tr>
<tr>
<td>Autologous bone marrow or stem cell transplant patient (from start of conditioning)</td>
<td>Yes**</td>
</tr>
<tr>
<td>Allogeneic bone marrow or stem cell transplant patient (from start of conditioning)</td>
<td>Yes</td>
</tr>
<tr>
<td>Patients treated with purine analogs (e.g. fludarabine, cladribine, deoxycoformycin, clofarabine), bendamustine, as well as alemtuzumab (anti -CD52) and anti-thymocyte globulin</td>
<td>Yes</td>
</tr>
</tbody>
</table>
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Effective Date: 10 Feb 2014

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(Authorized individuals are: lab personnel designated in their zone/program or provincial role to produce print copies)

<table>
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<tr>
<th>Patient Types</th>
<th>Irradiated Blood Component Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients receiving HLA matched platelets</td>
<td>Irradiated platelets (other components do not require irradiation unless patient falls into one of the other listed Patient Types)</td>
</tr>
<tr>
<td>Patients receiving granulocyte transfusion</td>
<td>Irradiated granulocytes (other components do not require irradiation unless patient falls into one of the other listed Patient Types)</td>
</tr>
<tr>
<td>Directed donation recipients</td>
<td>Yes</td>
</tr>
<tr>
<td>Patients with Hodgkin’s Disease</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* Irradiated products will be provided until T Lymphocyte immunodeficiency syndrome has been excluded.

** In the absence of other indications as listed above, autologous bone marrow or stem cell transplant patients require irradiated components for 1 year post transplant.

**Responsibility**

Transfusion Medicine Network is responsible for:
- reviewing the use of irradiated blood components policy at minimum every 2 years and revising as necessary.

Laboratory Directors, Managers, and Supervisors are responsible for:
- ensuring that the transfusion service meets the policy requirements outlined above, as a minimum, for the provision of irradiated blood components.
- ensuring staff are familiar with the policy and procedures surrounding the use of irradiated blood components
- monitoring the utilization of irradiated blood components for appropriateness.

Zone Clinical Department Heads are responsible for:
- familiarity with the Transfusion Medicine Network policy on the use of irradiated blood components.
- communicating and educating clinical colleagues on the appropriate use of irradiated blood components.

Laboratory Personnel are responsible for:
- familiarity with the Transfusion Medicine Network policy on the use of irradiated blood components.
- following local procedures and processes when orders that fall outside of the policy are received.
- appropriately recording blood component requirements when notified by physician and patient care units.

Physician and patient care units (clinical staff) are responsible for:
- notifying the Transfusion Service of the requirement for irradiated cellular blood components
- notifying the Transfusion Service when irradiated cellular blood components are no longer required.
Reference

Determining Patients’ Blood Product Eligibility, CLS policy I 3.2.2

2 21 Irradiated Blood Components: Criteria and Processing, Edmonton zone RTMBPS00221UAR


Canadian Standards for Transfusion Medicine

British Journal of Haematology © 2010, 152, 35-51