



## 捐血中心已可提供經輻照的血液產品

### 何謂輻照血液產品？

血液中的活性淋巴細胞可使免疫缺陷的病人產生致命的移植物抗宿主反應。

使用經 $\gamma$ -射線輻照處理後的血製品，可滅活血液中的淋巴細胞，從而預防由輸血引起的移植物抗宿主疾病 (Transfusion Associated Graft-Versus-Host Disease)，簡稱 TA-GVHD。

Irradiated  
已經 $\gamma$ -射線



### 輻照血液的制備過程

取收集後 5 天內的血液(全血、紅細胞濃縮血液或血小板)，並將之置於血液輻照儀內，施予強度為 25 Gy  $\gamma$ -射線，維持 5-6 分鐘的照射。

儲存期：- 輻照後的紅細胞只可儲存 14 天；

- 血小板的儲存期則按常規計算，即收集後 5 天內使用。



### 使用輻照血液的指徵

- 兒科/產科
- 胎兒輸血
  - 早產兒/足月新生兒血液置換
  - 先天性免疫缺陷的嬰兒/兒童

#### 急性白血病/骨髓移植

- 異體骨髓移植：於移植前高劑量化療開始，直至預防性治療移植物抗宿主病 (TA-GVHD) 停止或淋巴細胞  $>1 \times 10^9/L$
- 自體骨髓/血幹細胞移植：於自體骨髓/幹細胞收集前七天、移植當中和移植後 3 個月(同時需經全身電療治療者，6 個月內)，應使用經 $\gamma$ -射線處理後的血製品。

其它：- 何杰金氏病 (Hodgkin's disease) 的病人

- 使用嘌呤拮抗劑治療的病人 (Fludarabine, Cladribine, Deoxycoformycin)
- 輸用家庭成員或 HLA 吻合的血液/血小板的病人

### 申請方法

申請醫生於輸血申請單上 (SS-MOD. 260) 注明要求，並簡述原因即可。





## The Blood Transfusion Service is ready to provide Irradiated Blood & Platelets

### Purpose

Viable lymphocytes in blood products can cause fatal graft-versus-host reaction in severely immuno-compromised patients. Lymphocytes can be rendered non-viable by exposure to ionising radiation.

The use of g-ray irradiated blood /blood components will prevent TA-GVHD (Transfusion Associated Graft-Versus-Host Disease).

Irradiated



### Irradiation Procedure

Units of blood products (Whole blood, Red cell concentrate or platelets) are put in an Irradiator for  $\gamma$ -ray irradiation at 25 Gy for 5 to 6 minutes.

Shelf life of irradiated blood products:

- Irradiated RBC/WB: 14 days after irradiation
- Irradiated Platelets: up to their original expiry date.



### Recommendations for the use of g-ray irradiated blood & platelets:

- Paediatric Practice**
- Intrauterine transfusion
  - Intrauterine/neonate exchange transfusions
  - Congenital immunodeficiencies infant/children

#### Acute Leukaemia and transplantation

- I Allogeneic bone marrow transplantation: Patients should receive irradiated blood products from the time of initiation of conditioning chemo/radiotherapy until lymphocytes are  $> 1 \times 10^9/L^{-1}$
- I Autologous bone marrow/peripheral blood stem cell recipients (ABMT/PBSC): Patients should receive irradiated cellular blood products during and for 7 days before the bone marrow/stem cell harvest. Patients undergoing ABMT or PBSC should then receive irradiated cellular blood products from the initiation of conditioning chemo/radiotherapy until 3 months post-transplant (6 months if TBI used).

- Other**
- Patients with Hodgkin's disease at any stage should have irradiated red cells and platelets.
  - Transfusion between family members and transfusion of HLA-selected components.

### Request for irradiated blood / platelets

Requesting physician should fill up the request form (SS-MOD.260) and state briefly the reason.

