



e-Network Forum

CALIFORNIA BLOOD BANK SOCIETY

"We help save lives of people who need blood"

Search CBBS Website

Transfusion support with RBC and plateletpheresis units for patients who are post auto/-allo BMT or solid organ transplantation

A blood banker from Vienna, Austria reports that his transfusion service provides transfusion support with RBC and plateletpheresis units for patients who are post auto/-allo BMT or solid organ transplantation. It is his hospital's policy that **all patients are serological screened for CMV antibody** in advance of transplantation. However, **regardless of the results of the CMV screening test**, all transplant patients receive only plateletpheresis units that have been obtained from **donors who have tested negative** for CMV antibodies, despite the fact that 100% of the plateletpheresis units have been leukocyte reduced. In contrast, **RBC units are NOT screened for CMV antibodies, although all of the RBC units are leukocyte reduced**. This transfusion policy is continued post transplantation, even for patients who are CMV-antibody positive. The inquiring blood banker is curious to learn what policy is followed in other centers.

In response to the above, the following replies have been submitted.

1. **A blood banker from Germany** reports that his facility has been using leukocyte-reduced blood products routinely since October 2001, when 'universal leukoreduction' became policy. He adds that recently their BMT unit has been **convinced not to use CMV-seronegative units any more**, because in their practice, leukocyte depletion is an accepted method to prevent CMV transmission. As a consequence they have abolished CMV testing of their donors.
2. **A blood banker from a University Medical Center in the Netherlands** carries out about 35 allogeneic stem cell transplantations for adults and 30 for children per year. All cellular blood products are irradiated beginning at 14 days before transplantation (or, where appropriate, at the start of stem cell mobilization for "rescue" purposes). All cellular products are leukocyte reduced, plasma is deep frozen for at least 6 months before use (**plasma before being frozen is leukocyte-reduced by filtration**). The responding blood banker's center has **three categories of stem cell transplant patients that receive cellular products derived from CMV seronegative* blood donors**, beginning 14 days before transplantation. (In each case the donor and recipient are both CMV seronegative.)
 - **Adult** recipients of **matched unrelated** stem cells
 - **Child** recipients of **matched unrelated** stem cells
 - **Child** recipients of a **HLA-haploidentical** stem cells

(The responding blood banker added that the **only other indication for (leukocyte-reduced) CMV-seronegative products** in their practice is for "allogeneic" **intrauterine** erythrocyte or platelet transfusions.)

***CMV antibody testing methods:** Recipients are seronegative in a commercial IgG-anti CMV Elisa test. Blood donors are seronegative in a latex agglutination test.

3. **A blood banker from New York** reports that his facility has used leukocyte reduction as their method of CMV risk reduction for **all blood components** for quite a few years now. The incidence of post-transfusion CMV infection, as far as he can tell, is so close to zero as to be unmeasurable. The New Yorker says that his facility does **no CMV antibody testing whatever at this point**.

ADDENDA May 24, 2002

4. **A university medical center in Northern California** is reported to have the following policy with respect to special "cellular" blood components administered to their pre- (i.e., beginning as soon as the patient is identified as a candidate) **and** post-(for the lifetime of the recipient/patient) solid organ and progenitor cell transplant patients:
 - **All progenitor cell transplant patients** (both autologous and allogeneic) receive only CMV-seronegative, prestorage leukoreduced RBC and platelet components, **regardless** of their CMV serostatus. Apparently, the hem/onc physicians believe, based upon a review of their own

specialty's literature, that this is the most effective means for preventing both new and reactivated CMV infections.

- **All kidney transplant patients** also receive only CMV-seronegative, prestorage leukoreduced RBC and platelet components, **regardless** of their CMV serostatus. This does not, by the way, have much impact on the CMV-seronegative supply, since local kidney transplant patients don't often receive RBC transfusions.
- **Only CMV-seronegative liver and heart transplant patients** receive CMV-seronegative RBC and platelet components. CMV-seropositive patients receive CMV-seropositive or CMV-untested units. As in the first 2 groups above, all units - regardless of the patient's CMV-serostatus - are prestorage leukoreduced.

The only instance when leukoreduced "cellular" components are used in lieu of CMV-seronegative ones is when a patient requires **very rare** units, and only CMV-positive/untested blood is available. Then, the transplanters (as well as all transfusing physicians in our community) will accept leukoreduced, "CMV-safer" blood as an alternative.

5. **A blood bank physician in Minnesota** reports that his facility performs more than 200 stem cell transplants a year and **all transfused cellular blood components are leukocyte-reduced (prestorage) and irradiated**. They **also irradiate plasma**, mainly because there are so many WBCs present (even in thawed FFP), sometimes (in the opinion of the responding blood banker) as many as a unit of unfiltered whole blood. **Since the move to prestorage filtration of RBC, the plasma produced is very low in WBC** and they might soon forego irradiation of the plasma (but not the red cells and platelets). **They do not provide blood from CMV-antibody-negative donors except to CMV-negative recipients of GRANULOCYTES**. The responding blood banker reports that for **solid organ transplants**, his facility uses only components that are prestorage leukoreduced. **They do not provide CMV-negative components for those patients**. Despite all blood being leukocyte-reduced, some patients develop HLA antibodies and they are considering double filtration to see if that makes a component less immunogenic. The real issue, in the opinion of the responding blood banker, is **whether the solid organ recipient needs irradiated blood**. They do not provide irradiated blood products for solid organ transplant recipients unless there is a request by the patient's physician and the blood bank physician has approved it.

Please submit comments to the [e-Network Forum](#).



[Printable PDF of this page](#)

Ira A. Shulman, MD
CBBS e-Network Forum Editor & Moderator

The e-Network Forum is supported by the California Blood Bank Society (CBBS) and endorses collegial discussion among blood banking and transfusion medicine professionals. However, the CBBS does not necessarily endorse the specific views and opinions expressed in the forum. The forum is not intended as a substitute for medical or legal advice and the content should not be relied upon for any medical or legal purposes. Readers should make their own determinations as to: (i) what constitutes appropriate medical, technical, and administrative practices, and (ii) how best to comply with laws and regulations relevant to their questions. For the latter, they should consider consulting, as to any medical matters, a qualified physician, and, as to any legal matters, an attorney familiar with related state and federal laws. The user of the forum, by accessing same, assumes all risks arising out of such use and releases CBBS and their respective members, directors, officers and agents from and against any loss, damage, claim or liability arising out of such use of the forum.

Posted: May 23, 2002

Addenda: May 24, 2002