Managing irradiated Red Cell inventory to prevent release of older units to patients at risk of hyperkalemia

A transfusion medicine physician in New York wonders how other institutions handle their irradiated RBC inventory to avoid transfusion of excessively high potassium loads to adult patients with underlying conditions that might make them at risk of hyperkalemia. For example, the New Yorker relates that hyperkalemia resulting from use of irradiated red cells older than 7 days post-irradiation has caused hyperkalemia and death in **adult** recipients (Inaba S et al. Transfusion 2000;40:1469-1474).

What, if any, measures are transfusion services taking to avoid transfusing irradiated red cells between 7 and 28 days post-irradiation in settings where significant hyperkalemia might occur for an adult transfusion recipient, such as rapid transfusion or for adult patients with renal failure? The problem (or lack thereof) with transfusion-induced hyperkalemia in neonates has been discussed previously on this forum.

The following responses were submitted.

ADDENDA June 25, 2002

1. **A transfusion medicine physician from the Chicago area** reports that in his opinion, at **institutions with irradiators** the routine should be not to irradiate blood products until the day the products are issued. This approach would cover the great majority of patients with disorders requiring transfusion, including children. For **institutions that do not have the capability to irradiate products just before their use**, he is of the opinion that for adults, using a >7 day post irradiation RBC unit in emergencies is unlikely to cause harm, however, in infants and small children, he is concerned that there is a real risk, and such should be avoided unless there is no alternative. One approach would be to saline-wash such RBC units. He concludes with the opinion that it is the responsibility of the blood bank physician to alert the patient's physician when the product has a potential for causing hyperkalemia.

Please submit comments to the e-Network Forum.

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

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Posted: June 20, 2002

Addenda: June 25, 2002