



e-Network Forum

CALIFORNIA BLOOD BANK SOCIETY

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Usage of Pooled Platelets vs Pheresis Platelets

You may recall that some e-network members wanted to know if Pooled Platelets or pheresis platelets were being used for transfusion therapy. In addition, the members wanted to know how Pooled Platelets were being leukocyte reduced. Specifically, were Pooled Platelets being leukoreduced at the bedside (as the product are transfused), at the time the product was 'manufactured' prior to being added to a pool, or was the product being leukoreduced in the laboratory/blood center at the time of pooling using a sterile docking device in order to maintain the original expiration date of the product?

To which the following replies were received:

1. **Cedars Sinai (LA)** reported that they have used **ONLY plateletpheresis products** since about 1992.
2. A blood center reported that they provide pre-storage leukocyte reduced platelets that are derived from whole blood **as well as** from platelets, pheresis. Each individual platelet concentrate from whole blood is leukoreduced. **They provide about 57% of their platelets from whole blood and 43% from plateletpheresis. All** of their cellular products are **leukoreduced**. The shelf life isn't affected by the leukoreduction, so the shelf life of each individual product is 5 days. The platelets are leukoreduced with in-line filters. The plateletpheresis platelets are leukoreduced using the Cobe Spectra.
3. **Yale** reported that **100% of their random donor platelet (RDP) concentrates are leukoreduced by the American Red Cross (ARC)**. The platelets are leukocyte reduced before being put into storage, so that each individual platelet concentrate has a five day shelf life. A Medsep bag system is used. They use a 4 platelet unit pool. The latest ARC QC is 9.1×10^{10} platelets in 55 ml per RDP bag. They pool the pre-storage leukocyte RDP at the time of issuance, and these pooled platelets expire in 4 hours after being pooled. It was pointed out that it is a violation of FDA regulations to pool and then store random platelets beyond 4 hours. The pooled platelets are given through a 170u filter set. For more info call Dr Ritch Cable at ARC Farmington, Ct at 860-678-2770.
4. A concerned member commented that **the biggest issue she sees with the sterile dock pooling of platelets is the choice of the pooling bag**. You cannot use a transfer pack. You cannot use a platelet bag that is not cleared for both the volume and platelet/white cell concentration that will be in the pool. You could imagine where the resulting volume would be too small so that the CO₂ loss was excessive and the pH would actually go up during storage.
5. One Center reported that **both pooled and apheresis platelets were being used**. About **half** the patient doses are from pooled platelets and the other half are from pheresis platelets. The pooled platelets are leukoreduced on order by the physician and are prepared at the time of pooling.
6. **99% of the platelets transfused at a prestigious institution in New York state are whole blood derived random donor ABO identical platelets; 1% are apheresis HLA matched**. Leukoreduction of the products is accomplished in the blood bank just prior to issue. This institution will be switching to pre-storage leukoreduction as soon as their suppliers are capable of this.
7. A **centralized transfusion service located within a blood center** reported that there are additional turnaround time issues with pooled platelets. About **90% of the platelet transfusions issued are hemapheresis products**. Of the rest, they generally issue unpooled random platelets to client hospitals; often these are held as "stock" products for the OR. This model relies on each hospital IV Therapy or lab to keep track of any patients requiring leuko-poor and/or irradiated products so that an inappropriate product is not issued to the OR; however most patients requiring these interventions are not surgical (excepting transplant patients) and there is rarely a problem managing the random platelets this way. On occasion they have to pool and filter platelets. This happens less than 10 or 12 times annually, and only when they are experiencing a shortage of pheresis products. In this case they coordinate with the client hospital so that timing is not a problem. They pool by spiking, and filter manually using a PXL8. Every pooled product is QC'ed for % product lost in the process and for residual WBC count. Because they are QC'ing the method (manual

filtration) which has long since been validated, they are able to issue the product prior to the WBC count being done by flow. (In other words, they don't hold the pool until the WBC count is done). They are not able to supply this product (pooled, prefiltered) to any but their local clients, in part due to transportation time and also because some of our outlying customers are in another state and non-licensure of the product becomes an issue. For Idaho, if they had to issue random platelets, irradiated or not, the hospital would have to pool and filter in their own lab or use a bedside filter. Luckily the pheresis inventory is generally such that this has not come up yet.

8. A member pointed out that **using a sterile connecting device when pooling platelets does not mean the original expiration date may be used**. It has been shown that when a bacterially contaminated platelet is pooled with other platelets, the additional plasma allows the bacteria to grow to higher levels. This member did not know if this information has been published, but was stated by someone from the ARCs Holland Laboratory. Someone from the ARC may have more information to share.
9. Another member stated that several years ago she had heard Jim Aubuchon, MD state at an AABB meeting that **pooling platelet units allowed bacteria to grow to higher levels presumably because of the added volume of plasma**. Thus, when platelets are pooled by sterile docking, they do not maintain the 5 day outdate they would otherwise have if they had not been pooled.
10. Finally, it was reported that **100% apheresis platelets are used at CCBC**.

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

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Addenda:

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