Peterson's Press

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UP FRONT

Platelet Refractoriness

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Platelet refractoriness is the repeated failure to obtain satisfactory response to platelet transfusion. A variety of immune and nonimmune conditions can account for inadequate platelet response, and usually the reasons are multifactorial. Nonimmune causes are by the far the most common: They include splenomegaly, fever, sepsis, disseminated intravascular coagulation, infection, bleeding, graft-versus-host disease, and medications, particularly vancomycin, sulfonamides and heparin. Immune causes, specifically human leukocyte antigen (HLA) antibodies should be considered after nonimmune possibilities are ruled out.

The occurrence of two or more consecutive platelet transfusions with a lower response than expected should raise a concern for platelet refractoriness. After a platelet apheresis unit or a six-unit pool of whole blood derived platelets, an increment of 30,000-50,000 platelets/μL is expected. A post-transfusion platelet count at 10-60 minutes is critical to evaluate the response. Objectively, a corrected count increment (CCI) of less than 5-10×10^9/l after at least two to three platelet transfusion episodes suggests platelet refractoriness.

$$CCI = \frac{\text{Post-Transfusion Platelet Increment } (10^9/l) \times \text{Body Surface Area } (m^2)}{10^{11} \text{ Transfused Platelets}}$$

The presence of HLA class I antibodies is the most common immune reason for platelet transfusion refractoriness and accounts for 30-40% of all cases. HLA antibodies result from exposure to leukocytes in transfused blood products, transplantation, or pregnancy. Screening for HLA class I antibodies is performed via a variety of methods, including lymphocytotoxity testing and enzyme-linked immunosorbent assay (ELISA). Platelet transfusion refractoriness can be caused by an antibody to a specific HLA antigen, but it usually occurs due to mutiple antibodies. The panel reactive antibody (PRA) represents the percentage of individuals with whom the patient's HLA antibodies react; a PRA result of >20% suggests HLA alloimmunization. Once the blood bank confirms a diagnosis of HLA platelet refractoriness, HLA-matched platelets can be used. Depending on the patient's phenotype and product availability, products may not be easily accessible.

When an immune cause is suspected, it is important to involve the blood bank medical director in order to proceed efficiently. The above tests to determine an immune cause for platelet refractoriness and to obtain the appropriate platelet product may take several days, a significant concern if the patient is actively bleeding. ABO-compatible and "fresh" platelets (ie, stored for less than 48 hours) are associated with a significant improvement in post-transfusion CCI and should be used while diagnosis and workup are in progress. Platelet products available for treatment include HLA-matched platelets (once HLA phenotype is known), crossmatched platelets (used for both diagnosis and treatment), or HLA antigen negative platelets (if antibody specificity is known). An important part of the support of the refractory patient is to transfuse platelets to control hemostasis rather than to obtain a desired platelet count.

Crossmatched platelets (where donor platelets are mixed with patient plasma to determine if compatible) may be obtained more quickly than HLA matched platelets. In addition, crossmatched platelets can be used both for diagnosis and treatment, as antibody detection is inherent to its testing process; in some institutions this may provide faster turnaround time. Crossmatched products have been shown to have a longer survival post-transfusion than unmatched platelets. Crossmatched platelets are typically available within several hours, whereas HLA-matched platelets may take several days to obtain. Another benefit of crossmatching as compared to providing HLA-matched platelets is the potential larger pool of compatible donors.

A newer strategy for managing alloimmunization is antibody specificity prediction (ASP). The HLA specificities of the recipient's alloantibodies are determined, and the patient is transfused with platelets from donors lacking those HLA antigens. The main advantage of the ASP method is associated with the increase in the availability of

NEWS AND NOTES

donors. As new techniques and therapies are developed, the available donor population will continue to expand and thus improve the options for patients with platelet refractoriness.

New ABN Form Required Jan 1

In May 2011, CMS released an updated version of the Advance Beneficiary Notice of Noncoverage (ABN) (form CMS-R-131), which will replace the 2008 version of this form. The 2011 version contains no substantive changes from the 2008 version of the notice and was approved by the Office of Management and Budget. The 2008 and 2011 ABN notices are identical except that the release date of "3/11" is printed in the lower left hand corner of the new version. The ABN is used by all providers, practitioners, and suppliers paid under Medicare Part B, as well as hospice providers and religious non-medical healthcare institutions (RNHCIs) paid exclusively under Part A.

ABNs issued after Sun Jan 1, 2012 that are prepared using the 2008 version of the notice will be considered invalid.

You'll find the new ABN on our website, www.petersonlab.com, under "Billing" on the top menu bar.

Are you Ready for EP23?

If you feel like you're drowning in an ocean of Quality Control regulations—get ready for the next wave!

CLSI has released a new standard, EP23, titled "Laboratory Quality Control Based on Risk Management: Approved Guideline." The document provides guidance based on risk management for laboratories to develop quality control plans tailored to the particular combination of measuring system, laboratory setting and clinical application of each test. The document is available from CLSI for $200. Copyright protection prevents us from purchasing the document to share with you.

At this time, the Kansas Clinical Laboratory Scientists-CLIA Program (aka Ruby and Connie) are being briefed on CLIA's EP23 enforcement policy. We expect the topic to be presented at the 2012 KSCLS/Wheatlands CLMA Annual conference.

2012 KSCLS/Wheatlands CLMA Conference Set

The date and location for the KSCLS/ Wheatlands CLMA Annual Conference have been announced. The conference will be held May 2-4, 2012 at the Wichita Marriot Hotel (9100 Corporate Hills Drive). Maureen is on the program committee - EP23 will be suggested as a conference topic. If you have other suggestions, please let her know (mjensen@petersonlab.com).

New Default HPV Test

Peterson Laboratory Services is always searching for tests/test methods that will provide your patients the highest quality care. It is a rare opportunity when a new test with higher sensitivity and higher specificity can be offered at a lower cost than older methods.

We have replaced the older HPV by ISH testing method with HPV Polymerase Chain Reaction (PCR) Select as our default HPV test. You may choose between Hybrid Capture (HC), PCR Select or PCR Complete at any time, for any patient. If no method is selected on the requisition (in the absence of an existing agreement), PCR Select will be performed. See the attached HPV Method Comparison brochure. As always, feel free to call if you have questions.

Kansas health information Network Update

KHIN is moving ahead! We first introduced the KHIN initiative in this newsletter last summer. Since that time, Peterson Laboratory Services has agreed to interface to this statewide patient registry. KHIN's goal by 2016 is to achieve state-wide use (75% of the population) with 80% of providers participating).

KHIN is a collaboration of organizations led by the Kansas Medical Society, the Kansas Hospital Association, the Wichita Health Information Exchange, and *e*Health Align in Kansas City. The KHIN health exchange will provide instant access to a patient's medical history on a subscription basis, enabling physicians to make more informed treatment decisions and avoid duplicate tests, adverse drug reactions, etc. For information or to subscribe to KHIN, go to www.khinonline.org, or call 877-520-5446.

PLS Supports Your Professional Organizations

2011 KS Hospital Assn Meeting Exhibit

Each year, PLS staff participate in statewide meetings of the Kansas Hospital Association, Kansas Medical Group Managers Association, Kansas Society of Clinical Laboratory Science and Wheatlands Clinical Laboratory Management Association. Peterson Laboratory is proud to support your professional organizations.

Remember When?

Five years ago this month, Peterson Laboratory Services, P.A., discontinued clinical laboratory testing services to concentrate on anatomic pathology services. Remember?

Terry Hepner, MT, on Beckman Access II Immunoassay Analyzer, 2004

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