

FALL 2006



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President's Message-DONNA RATLIFF^{MT(ASCP)}

Greetings to all!

KABB held our Fall meeting September 16, 2006 at Cumberland Falls State Resort Park. We would like to thank the attendees. Without you we would not be able to have KABB meetings. Our Education Committee did a wonderful job. The presentations were interesting and informative. We would also like to thank our presenters for the great job they did.

The KABB Spring meeting will be Saturday March 10, 2007 at Natural Bridge State Park, Slade, KY. The cost for the room is \$59.95. Our Fall meeting will be held jointly with KSCLS at Marriott East in Louisville, KY. The dates are September 11 and 12, 2007. The cost for the room is \$79.95. Additional information can be found on our website at www.kabb.org as meeting plans continue.

JOB OPPORTUNITIES

CKBC(Lexington, KY), a non-profit, community-based blood center seeks an individual to oversee and ensure daily production requirements are met, conduct performance evaluations, review component production records, participate in continuing education, and perform training. Assist in maintaining, filing, and storing Component Lab records, writing, updating, and analyzing procedures for Components Lab Standard Operating Procedures. Assist in ensuring all components are accounted for on a daily basis. Ensure Quality System Essentials are implemented for the Components Lab. Full time, M-F, 2nd shift (2 – 11 pm). High School diploma or equivalent, MLT or MT, and experience in supervisory capacity required. Previous experience in component production or experience in any health care occupation preferred. Competitive salary, comprehensive benefits include health/dental/life, LTD, paid vacation/holidays, EAP, 403(b) retirement savings plan, and pension plan. Please send cover letter and resume to: CKBC, Attn: HR 330 Waller Avenue, Lexington, KY 40504 or jobs@ckbc.org .

CKBC is a drug-free and EOE.

www.ckbc.org

If anyone would like to advertise a job opening in the state please e-mail the request to dnsthacker@netzero.net . Before I put them in Channels I will call to verify the position is still available. Listings will depend on available space.



HOW TO RULE IN AN ANTIBODY, Richard Oreskovic, MT (ASCP)

SBB Blood Bank Supervisor for Spectrum Laboratory Network at Holston Valley Medical Center in Kingsport, TN.

Background

We are taught that we must presume that an antibody exists in plasma until it can be conclusively ruled out. Once an antibody is identified, not much attention is paid to *proving* (at least statistically) that the antibody is really there. Statistically speaking, there must be a probability of less than 1 in 20 ($p \leq .05$) that the reaction pattern on a panel came about due to chance, and not due to a true antibody pattern. For example, let's say you tested plasma against six cells, three of which were D-pos and reacted, and three of which were D-neg and did not react. A statistical test called factor analysis shows that you have identified anti-D at [$p = .05$]. It means that the chance of this reaction pattern arising from chance (and not anti-D) is exactly 1 in 20 (.05). It is this statistical test that gave us the "3-positive/3-negative rule." Therefore, if you have at least three antigen-positive cells that react and at least three antigen-negative cells that do not react, the antibody is said to be conclusively identified. If you are following this, read on...it gets better.

If the factor analysis equation is applied to a panel of seven cells, and *two* antigen-positive cells react while *five* antigen-negative cells do not react, the antibody is also conclusively identified. In fact, this pattern yields an even lower probability that the pattern arose from chance. Therefore, if we follow the "2-positive/5-negative rule," the antibody is also conclusively identified.

These rules are easy to follow when you have a single antibody, but you must use some caution with multiple antibodies. Suppose you have an obvious anti-K and anti-C. You must apply the "ruling in" rules to each antibody. So the questions to ask are:

1. Do I have at least two K-pos/C-neg cells that react?
2. Do I have at least two K-neg/C-pos cells that react?
3. Do I have at least five K-neg/C-neg cells that do not react?

If the answer to all three questions is yes, then both anti-K and anti-C are conclusively identified. Note that the questions do not ask about K-pos/C-pos cells. That's because if such a cell reacted, we would not necessarily be able to say which antibody caused the reaction. So we cannot consider those cells.

Case study

A patient presents with a positive antibody screen. An antibody identification panel is performed

Conclusion

This appears to be anti-D and anti-C. There are a bunch of cells that reacted, but a few of them are D-pos/C-pos (#1, #2, #11), so we can't use those for ruling in either antibody.

There were two D-pos/C-neg cells (#3 and #4) that reacted, but there was only one D-neg/C-pos cell (#5) that reacted. There are five D-neg/C-neg cells that did not react.

Anti-D is already conclusively identified (ruled in) using the 2-pos/5-neg rule. We still need one more D-neg/C-pos cell to react to satisfy the 2-pos/5-neg rule. Only then can we rule in anti-C.

RECOMBINANT FACTOR VIIa

Power point presentation by Richard Oreskovic, MT (ASCP) SBB Blood Bank Supervisor for Spectrum Laboratory Network at Holston Valley Medical Center in Kingsport, TN.

What is it?

- Derived from cultured baby hamster kidney cells
- Manufactured under the trade name NovoSeven by Novo Nordisk Pharmaceuticas
- Supplied by pharmacy in a bottle with lyophilized powder that is reconstituted with water
 - Once reconstituted, factor VIIa has a half life of 3 hours
 - Administered intravenously as a bolus injection
- FDA-approved uses: Hemophilia A and B inhibitors, acquired inhibitors (eg, anti-factor VIII) and congenital factor VII deficiency
 - Acceptable to Jehovah's witnesses

Case Report 1:

- 44-year-old male hit by train while attempting suicide
 - On admission, hgb 3.0, PT 22.2 , PTT 89.8
- After thoracotomy, heavy pulmonary bleeding continued
- 1 dose rFVIIa given, after which bleeding slowed to 30 mL/hr
- 2nd dose given 12 hours later, after which bleeding stopped

Case Report 2:

- 25-year-old male shot at close range in the abdomen
- taken directly to OR for exploratory laparotomy, which led to explosive blood loss and infusion of 54 RBCs, 41 FFP, 3 platelet doses
 - 36 hours after incident, 1 does rFVIIa given and bleeding promptly stopped

Case Report 3:

- 44-year-old female shot in the face, chest, and leg
- Taken to OR for exploratory laparotomy, splenectomy, and other procedures
- Transfused with 48 RBCs, 45 FFP, 5 platelet doses, and 7 cryoprecipitate
 - 1 dose rFVIIa given in ICU, with prompt cessation of bleeding

Case Report 4:

- 24-year-old female stabbed 6 times
- on admission, systolic blood pressure 40mm Hg, arterial pH 6.97, Hgb 7.0
- Hypothermic postoperatively (93.2F) with signs of coagulopathic bleeding
- 1 dose of rFVIIa given, and all external; signs of bleeding stopped almost immediately

How NovoSeven works:

- appears to induce coagulation only at the site of the vascular injury, reacting with exposed cell-bound tissue factor to trigger platelet activation
- best when given right after platelet and fibrinogen (cryoprecipitate) infusion

Adverse Effects:

- Serious adverse events in less than 1% of treated patients
 - DIC
 - Thrombosis
 - Myocardial infarction

Dosage:

- Doses ranging from 60 – 144 ug/kg cited from published case studies
- A single dose most often cited, but dose can be repeated as necessary

Cost:

- About \$10,000 per ug/kg dose, or about \$1,400 per mg
- Rapid correction of traumatic coagulopathy can reduce transfusion requirements, ventilator days, and the need for dialysis
- Recombinant factor VIIa is felt to be too expensive to give in a futile fashion to patient with unsurvivable trauma

Performance of Quality Control for Nageotte White Blood Cell Counting



www.unitedpharma.org

White Blood Cell (WBC) counting via the Nageotte hemocytometer has been in use since 1992* as a means of process control to monitor the effectiveness of leukoreduction of blood products. This method can be very subjective, and there are several steps in the procedure that, if not performed correctly, can cause the process to go out of control.

The use of stable controls to monitor accuracy and precision of an analytical method is required for laboratory testing. Controls for WBC counting via the flow cytometric method have been available for a number of years. Until only recently has there been a control available that can be used for the Nageotte WBC counting method.

R & D Systems, Inc. has two quality control (QC) products to monitor flow cytometer and Nageotte chamber methods for measuring residual WBC in leukoreduced blood products: R&D LeukoReduced RBC™ Control for red cells and R&D LeukoReduced PLT™ Control for platelets. WBC target values are 2.0 WBC/μL and 20.0 WBC/μL. The WBC concentration mean and range for each level are provided for both the Nageotte and the flow cytometric methods.

These controls are packaged in 3mL pierceable screw cap tubes. They have a 75-day closed vial shelf life. Open vial stability is 30 days or 21 thermal cycles (uses), whichever comes first.

The controls can be easily incorporated into your work scheme. They are tested in the same manner as blood products used for transfusion purposes. Check this product out for performing Nageotte WBC counting QC.

**Masse M, Naegelen C, Pellegrini N, et. al. Validation of a simple method to count very low white cell concentrations in filtered red cells or platelets. Transfusion. 1992 Jul-Aug;32(6):565-71.*



SBB LAST CHANCE REVIEW

Feb. 17-18, 2007 SBB "Last Chance" Review for Specialist in Blood Banking registry exam. Gulf Coast Regional Blood Center, Houston, TX. This program is designed for individuals preparing to take the American Society for Clinical Pathology's Board of Registry examination for Specialist in Blood Banking. It can be quite helpful as a preview of study areas or as a final review for those ready to take the test. Participants may be graduates of a CAAHEP-accredited SBB program or taking the exam under the special eligibility category. Physicians who are preparing for the Board examination in Blood Banking may and individuals wishing a refresher in blood banking can also benefit from this program. Contact Clare Wong, 713-791-6201, cwong@giveblood.org.



Kentucky Association of Blood Banks

KENTUCKY ASSOCIATION OF BLOOD BANKS

www.kabb.org

2007 Renewal Notice

Name: _____

(Please print legibly)

Affiliation: _____

Address of correspondence: _____

Telephone: () _____

Fax: () _____

E-mail: _____

Would you prefer to receive mailings & publications via your e-mail address? _____

List any address/name change:

(Please indicate change)

Change of address _____

Change of name _____

2007 Dues: \$15.00 if submitted on or before January 1, 2007
 \$17.00 if submitted after January 1, 2007
 \$10.00 Student

Make checks payable to: **Kentucky Association of Blood Banks**

Remit payment to: Angie McCowan-Bailey
 c/o KABB Membership
 320 Southbrook Drive
 Nicholasville, KY 40356

Please indicate if you are willing to assist with additional KABB activities, such as:

- Committee Participation
- Hold an Office
- Be a Speaker
- Submit small article for CHANNELS newsletter
- Help edit newsletter

Do you have suggestions for future topics for future meetings and/or Channels? _____

TRANSFUSION MEDICINE WORD SEARCH

BY SHARON NOBLE

Z A A N T I B O D Y Z P K L N X Q
A D I G T Z D T L Z R M O T H E R
L E T M E R X K N E W P K M E Y R
L Z N L E N A R G G T P Z W C T D
O I L Y V N O N J K L L L Q N I R
A T C F X B A T S X G W L M A L D
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A V L T H W J D H Y V P Z P Q N K
P L J K D O O L B D R O C K F I R

FIND THE WORDS BELOW:

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CORD BLOOD
GENOTYPE
HAPLOTYPE
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NEWBORN
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c/o Danny Thacker
7437 Pin Oak Circle
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