

Spring 2007



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President's Message-Sharon Noble MT(ASCP)

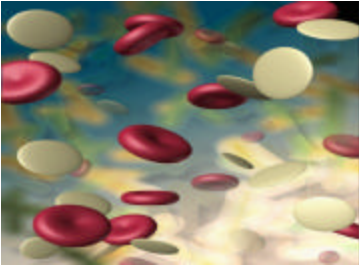
Greetings to each of you. I hope you enjoy Channels and find it useful. We want to include information that is helpful so please feel free to contact us. We would love to have your input.

Our March Spring meeting was held at Natural Bridge State Park. We had about 28 people in attendance and some very good speakers. I want to thank each one of them for the information they presented and a job well done.

Please keep in mind our fall meeting will be a joint session with KSCLS. The dates for this meeting are Tuesday and Wednesday September 11th and 12th at the Louisville East Marriott. There is information on our website for making your room reservations and signing up for the meeting. Our web address is www.kabb.org. This meeting will be filled with many good speakers and it's a good chance to talk to friends you have made over the years. This is also good way to get the CEU's that you may need for the year. We look forward to seeing you there.

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The Year of the Treacherous Kidd

Submitted by Dr. Elpidio Pena: Medical Director for Kentucky Blood Center.
For questions or comments pertaining to this article, please email Dr. Pena at:
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It is only May and that treacherous Kidd has shown its power twice already: The first time during February in a patient with multiple antibodies who was bleeding, and needed an urgent transfusion. An undetected Anti-Jk^a caused an acute hemolytic transfusion reaction. The patient expired hours later from her underlying condition and the transfusion reaction. The second occurrence happened a few days later to a patient in better condition. In this case, it was a 52 year old female with no history of transfusion, but a history of multiple pregnancies. She received three units of red blood cells during surgery and two days after was anemic, jaundiced, with a positive DAT, and the elution showing (guess what?) an Anti-Jk^a.

Given these unpleasant encounters with "Kidd" it is only fair we get to know this blood group a little better. In the following paragraphs we will review the history, biochemistry, function, frequency, and clinical significance of this blood group, but first let's start with the subgroups.

The Kidd blood group is comprised of three antigens: Jk^a, Jk^b, and Jk³. The Jk³ antigen is present in 100% of most populations, so nobody develops antibodies against it. The Jk^a antigen is present in 77% of Caucasians, 92% of Blacks, and 73% of Asians. The Jk^b antigen is expressed in 74% of Caucasians, 49% of Blacks, and 76% of Asians. The most common phenotype in Caucasians is Jk(a+b+), about 50.3%, followed by Jk(a+b-), about 26.3%. The phenotype Jk(a-b-) is rare.

As most blood groups, Kidd was first identified in 1951 when an antibody was produced in a pregnant patient who was antigen negative for Jk^a. Two years later the antithetical Jk^b was identified. The Kidd blood group is a transmembrane glycoprotein, which is coded in chromosome 18. Besides the red blood cell membrane, the group is expressed in neutrophils and kidney cells. The function of this blood group is the concentration of urea through the red blood cell membrane, but the lack of the Kidd glycoprotein does not imply disease.

The antibodies against Jk^a and Jk^b are both clinically significant. They both can cause hemolytic transfusion reactions and hemolytic disease of the fetus and the newborn. The antibodies are mostly IgG, but occasionally can be IgM.

Clinically, these antibodies usually cause delayed hemolytic transfusion reactions or mild hemolytic disease of the newborn. I have seen acute hemolytic transfusion reactions caused by Anti-Jk^a, after all both antibodies are capable of binding complement.

The scope of this article prevents me from discussing the laboratory workup of patients with antibodies against Kidd blood group antigens; but let me finish with the words of Dr. Peter Issitt, one of the great immunohematologists in the world: "The in vitro detection of these two antibodies can be among the more difficult tasks that confront blood bankers."¹ Enough said.

1 Issitt, P and Anstee, D: Applied Blood Group Serology. Fourth Edition. Montgomery Scientific Publications, Durham, North Carolina. 1998



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How Do Non-computerized Transfusion Services Implement ISBT 128?

By: Erwin Cabana, Information Standards Specialist, ICCBBA, Inc., erwin.cabana@iccbba.org

ISBT 128 is an internationally recognized information standard used for identifying and processing blood, tissue, and cellular therapy products. This standard uses rigidly defined data structures that are electronically coded based on the Code 128 barcode symbology, which makes it highly resistant to errors. In addition to being electronically error resistant, *ISBT 128* features a standardized label layout where certain types of information are placed in a specific location on the label. This allows the user to break through language barriers and it also allows the non-computerized user to quickly find, record, and interpret pertinent data. Since many of the key process control features of *ISBT 128* pertain to facilities with computerized systems, a common misconception is that non-computerized facilities have little to prepare for with *ISBT 128* implementation.

Being *ISBT 128* compliant is more than just properly labeling a unit of blood. Compliance is about being able to accommodate that unit at every step of the process through transfusion. When preparing to implement *ISBT 128*, certain major factors must be taken into consideration.

Get approval

Discuss the importance, cost, and time frame with the Medical Director, Supervisors, and hospital administration. Facilities will need to get prior approval from top management, and explaining the details of *ISBT 128* will help gain their full support that is essential for a smooth implementation.

Develop a multi-disciplinary transition team

ISBT 128 will affect many departments in the facility, thus a representative from each affected department should be part of the implementation team to provide insight as to how they will be impacted by the change and to address the specific requirements for their department. The nurses and transfusionists on the floor will need to know where to find specific information located on the new label; the laboratory personnel will need to be familiar with product codes when performing modifications; the Accounting Department will need to understand the products that they will be billing, and medical records personnel will also be affected. A recognized Team Leader should be chosen to spearhead the project.

Register with ICCBBA

Facilities are required to register with ICCBBA if they will be applying *ISBT 128* labels, or if they will be using *ISBT 128* data structures. The registration form can be found on the ICCBBA website as a PDF file that applicants can print, complete, and mail to the ICCBBA office along with their payment. The processing time is currently six to eight weeks. Once the registration is processed, the facility will be notified of their facility identification number (FIN) and can then submit an online request for a password to access the registered user's area.

Determine which *ISBT 128* product codes will be used

For billing purposes, facilities will need to know the *ISBT 128* product codes that correspond to the Codabar product codes that they currently handle. For ICCBBA registered facilities, there is a Codabar/*ISBT 128* map that is available in the registered user's area of the ICCBBA website. For facilities that are not required to be registered, these codes can be provided by their blood supplier.

Preprinted labels

If the facility will be applying *ISBT 128* labels, they will need to order preprinted labels from their label vendor if they do not have a computer system that will generate on-demand labels. Preprinted labels would include Donation Identification numbers for pooled products and product code labels for modifications such as aliquots and irradiated units. It is recommended that they choose a label vendor that is registered and licensed with ICCBBA. A listing of such vendors is available on the ICCBBA website at www.iccbba.org/reg_vendorinfo.html.

Transition period

Can the facility accommodate both Codabar and *ISBT 128* labels? The movement from Codabar to *ISBT 128* will not happen overnight, and naturally there will be a transition period in which a facility will have to accommodate both types of labels. Fresh frozen plasma, for example, can potentially remain in inventory for one year. The facility will have to consider as to how they will handle Codabar products that are already in inventory with incoming *ISBT 128* products.



Attention: 2007 Institutional Members

As part of your membership, you may post your job openings on our website and in our quarterly newsletter. For additional information, please e-mail jobs@kabb.org



JOB OPPORTUNITY: Components Laboratory Manager

The Components Laboratory separates blood components from units of whole blood donated by volunteer blood donors. We are seeking an experienced, self-motivated, healthcare professional to provide effective leadership, management, and oversee efficient day-to-day operations for components production.

The Components Laboratory Manager ensures quality control and compliance with industry standards; writes, updates and analyzes standard operating procedures; meets production goals; validates laboratory equipment; and provides administrative and technical management of the department. The responsibilities also include hiring and retaining competent employees to staff the Components Laboratory 24 hours/7 days a week. Full-time position, 1st shift.

Medical background (MT, MLT, or related field) and 3 years management experience required. Previous blood bank experience with an understanding of component production preferred. Applicants must have working knowledge of Word and Excel; demonstrated skills in staff management/development, budget preparation/monitoring, and organizational skills; ability to think independently and solve problems; and possess excellent communication skills. This challenging opportunity requires a team-player attitude, high energy level, and a dedication to excellence.

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Medical Technologist – University of Kentucky, Lexington, KY

The University of Kentucky Hospital Blood Bank seeks an enthusiastic, highly motivated individual to work evening shift. The hours, from 3pm to 11:30pm, include weekend (night shift), on-call, and holiday rotation. This job requires a Medical Technology background, ability to work under pressure, organizational and data entry skills, the ability to work independently and to work well with others. Minimum requirements are a BS, BHS, or BA in Clinical Lab Sciences or Medical Technology. Experience not required. Salary range 17.64 – 26.69/hour. For more information contact Blood Bank Supervisor at 859-323-6941 or apply on-line at <http://www.uky.edu/HR/UKjobs>, Medical Technologist/Hospital, Requisition No. SM517722.

CASE STUDY CONT.

1. What antibody (ies) appear to be present?
2. What further testing is indicated to prove the antibody specificity?
3. What could be causing the positive autocontrol?
4. What special considerations would you make when selecting blood for this patient?

From the panel, it appears the patient has an Anti-Jk^a. However, the possibility of an Anti-E cannot be ruled out at this time. All other common alloantibodies can be excluded, using the 2 and 2 rule. Next, the patient's serum was tested with a selected cell panel consisting of 2 cells that are Jk^a negative and E positive. Two cells were tested and found negative; therefore, we can exclude the Anti-E.

To confirm the antibody, the patient's cells must be typed for the Jk^a antigen. We know the patient has been recently transfused. Since we have a pretransfusion Blood Bank specimen, we could use that specimen to type for Jk^a. Another option when a pre-transfusion specimen is not available would be to try to harvest the patient's reticulocytes to use for typing by performing a cell separation. Even though, the patient received two packed cells three days prior, we know from the patient's history that he is healthy and should be producing reticulocytes. The cell separation procedure may be accomplished by washing the patient's cells and putting them into capillary tubes. These tubes may be spun down using a microhematocrit centrifuge. The top layer of cells or reticulocytes can be removed from the tubes and typed for the Jk^a antigen.

	Jka Typing
Current Post-Transfusion Specimen	+/- mf
Pretransfusion specimen	0
Harvested Reticulocytes	0

Next, we need to look at the autocontrol. The result is positive with mixed field reactivity. Mixed field results may be seen with two cell populations. Since the patient has been recently transfused, this is a mixture of patient cells and transfused cells. The patient's antibody is reacting with the transfused Jk^a positive cells and not with the patient's Jk^a negative cells.

Additional testing to be performed: DAT and Elution.

DAT				
Anti-IgG, -C3d	+/-mf			
Anti-IgG	+/-mf			
Anti-C3b, -C3d	0v			
ELUTION				
	Last Wash		Eluate	
SCI	0	0v	0	0v
SCII	0	0v	0	1+
SCIII	0	0v	0	1+

The eluate was tested against a panel. An Anti-Jk^a was identified in the eluate. All additional common alloantibodies were excluded in the eluate using a selected cell panel.

Conclusion:

Patient types: O Positive
 Serum antibody: Anti-Jk^a
 Eluate antibody: Anti-Jk^a

The patient should receive Group O, Jka negative red cells.

The patient is experiencing a delayed transfusion reaction due to the Anti- Jk^a. Upon further talking with the patient, he mentioned that he was a blood donor before and after his recovery from the ATV accident. He remembers receiving a letter after his recovery from the center stating that they had identified something in his blood and kept the letter. Later that evening, the patient's wife brings in the letter he was referring to. The letter states the patient has an Anti- Jk^a in his plasma.

The patient continued to recover and was released from the hospital on day 7.

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