



Perinatal Gazette

Newsletter of the Regional Perinatal Center
Westchester Medical Center



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NICU High Risk Module

The *Neonatal Intensive Care (NICU) High Risk Module* is the first module of the web based Statewide Perinatal Data System to be introduced statewide. It is currently in use by the Regional Perinatal Center (RPC) and all Neonatal Intensive Care Units in the Central New York and the Northeastern New York Regions. On January 6, 2003, members of the Statewide Technical Assistance Team provided training to the staff at Westchester Medical Center. The Neonatal Intensive Care Units in our region will receive training in the upcoming months. In preparation for this training, any individual who will enter data or run reports from the module **MUST** obtain an account for the Health Provider Network (HPN). This will allow access to the secure server in Albany where the data will be stored. A member of the RPC at Westchester will contact you regarding this application. This form must be signed by the HPN Coordinator for your institution, as well as yourself, and be notarized. It may take several weeks for all of the applications to be processed so please submit your application as soon as possible after you are contacted by the RPC.

If you have any questions, please contact the DOH Team at
(914) 493-8590 at Westchester Medical Center

SAVE THE DATES

HOW TO IDENTIFY, WORK WITH AND REFER SUBSTANCE-ABUSING WOMEN

A two-day training for doctors, nurses, health educators,
social workers, case managers
and other health care and human service professionals.

March 3 and 4, 2003
9 am – 4 pm

Newburgh Courtyard by Marriott Route 84 and 17K,
Newburgh Presenters:

Christina Hale, MA, CASAC, CPP
Orange County STOP DWI Administrator
Director of Education and Training
Alcoholism and Drug Abuse Council of Orange County

Ruth Bowles, Information & Referral Specialist
Alcoholism and Drug Abuse Council of Orange County
12 CASAC (Credentialed Alcoholism and Substance
Abuse Counselor credits available)

For more information and/or a registration form, contact

Stephanie Sosnowski
Maternal-Infant Services Network of Orange, Sullivan
and Ulster Counties
200 Route 32 PO Box 548
Central Valley, NY 10917
845-928-7448 ext. 15 <mailto:stephanie@misn.us>

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Fetal Middle Cerebral Artery (MCA) Doppler Flow Velocity: A New Tool for Management of Red-Cell Alloimmunization

Maternal alloimmunization refers to the development of maternal antibodies as a result of the stimulation of paternally derived fetal antigen that is foreign to the mother. All pregnant women with positive antibody screens should determine whether the particular antibody could cause fetal hemolytic anemia. Although anti-D immune globulin has been widely used for the prevention of RhD alloimmunization, fetal hemolytic anemia other than RhD alloimmunization continues to occur as the lack of the prophylaxis of these red-cell antigens.

In order to detect fetal anemia, traditionally, invasive procedures are performed either by amniocentesis for the measurement of amniotic fluid bilirubin level or cordocentesis for the direct determination of fetal hematocrit. However, both procedures may precipitate transplacental hemorrhage and exacerbate sensitization. A 2.7% fetal death rate has been reported for the cordocentesis in these patients. Although amniocentesis is less invasive, the accuracy in interpreting amniotic fluid bilirubin is questionable before 27 weeks of gestation and the bilirubin concentration is poorly correlated with fetal anemia in Kell antigen alloimmunization.

Over the past two decades, research has been focused on the development of non-invasive methods, specifically ultrasonographic assessment to predict fetal anemia and at risk for immune hydrops. The most promising technique is the Doppler flow velocimetry. Umbilical vein and artery, fetal aorta, main splenic artery and middle cerebral artery (MCA) have been investigated in predicting fetal anemia in red-cell alloimmunization.

The author and his ex-colleagues reported the peak systolic velocity (PSV) of main splenic artery or MCA can precisely predict fetal anemia in red-cell alloimmunization. However, the best tool for the clinical practice would be the measurement of PSV of MCA. The reasons for selecting MCA are 1) fetal cerebral arteries respond quickly to hypoxemia, 2) strong dependence of brain tissue on oxygen, 3) easily visualized and 4) low intraobserver and inter-observer variability's. Furthermore, we recently developed a formula for predicting the fetal hemoglobin using the MCA.

The clinical advantages for using MCA are 1) a non-invasive procedure, 2) normative MCA velocities from 15 to 42 weeks are established, 3) can be applied to Kell antigen sensitization, 4) excellent predict values (100% negative predict value and 65% positive predict value as well as 100% sensitivity.

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Using MCA as a new tool in the prediction of fetal anemia should be strictly limited to red-cell alloimmunization without previously undergoing intrauterine transfusion.

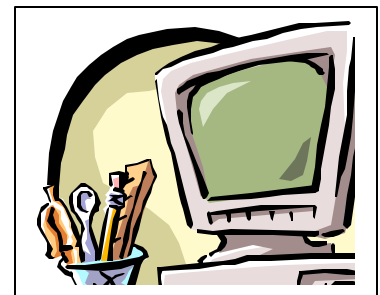
Currently, it would be inappropriate to use this new tool in predicting fetal anemia in pregnancies complicated by non-alloimmunization, hemoglobinopathy, trauma or infections. More research in these indications is warranted.

Recently, our data indicate the positive and negative predictive values for fetal anemia in parvovirus infection can be as high as 94.1% and 93.3%, respectively (Am. J. Obstet. Gynecol. 2002, Nov. 187:1290-3). Managing red-cell alloimmunization patients with serial measurements of MCA can also be as early as 15 weeks. If the value is normal, we follow-up patients in two to four weeks. If it is abnormal, we discuss with patients cordocentesis and possible intrauterine transfusion.

For more information or referral for management of red-cell alloimmunization using this new tool, please contact (914) 347-1154, the Prenatal Diagnostic Center at Westchester Medical Center, 19 Bradhurst Avenue, Suite 2700, Hawthorne, NY 10532.

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Regional Perinatal Collaboration: Perinatal Forum, Database, and Quality Assurance

Benchmarking

Understanding the types of evidence available and the potential issues involved with each type allows a healthcare worker to incorporate the best evidence into practice to maximize the quality of care. This is also called *quality improvement*. One important tool for *quality improvement* when good evidence might not be available is *benchmarking*. *Benchmarking* was an industry tool borrowed by medicine and is the process of comparing one's performance to that of others. This leads to the eventual investigation of reasons for differences in performance for similar scenarios. Prior to initiating a site visit to observe differences, a specific question or set of questions must be formulated after embarking on internal studies. *Benchmarking* can become part of a collaborative process found in groups like the Vermont Oxford Network or the Regional Perinatal Center.

Perinatal Database

Another potential aspect of collaboration is the state perinatal database (SPDS). The state initiative is rooted in Title V, a state-federal partnership in maternal child health. Through the formation of a state-wide database centered by regional perinatal centers, data analysis and outcome measurement can be done with the goal of *quality improvement* and *quality assurance*. Databases in general may use either *primary data* (data collected for the main purpose of research or quality analysis) or *secondary* (data collected for non-research activity, such as *administrative data*). *Administrative data* is often related to billing with important subtypes being ICD-9 codes and DRG's. These subtypes are not always ideal for research as they may not, for example, reflect severity or timing of disease. More importantly, the interpretation of the data must be done carefully; a statistical relationship does not establish causation.

The *NICU module* of the state perinatal database will be in place as of early 2003. This portion of the database addresses neonatal outcomes by examining minimal maternal demographic data (more will be in the obstetric module in the near future), whether the infant or mother was transferred, severity of the infant's initial course, and infant's issues during the hospital course by systems. The perinatal database will allow a regional collaborative data-driven effort to improve quality of care of mothers and infants.

Perinatal Forum

On October 24th, our first Regional Perinatal Forum was held in the afternoon after a morning CME conference entitled "Prenatal Diagnosis, the Environment and Nutrition in the New Healthcare Model". One important subject discussed in both the morning and afternoon sessions

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was the state perinatal database and database management strategies. A database is an important way to derive evidence for clinical practice. However, it is important to realize that evidence can be derived in many forms. The gold standard is a *randomized control trial* where many biases are controlled for by randomly assigning the study population to either the control or study interventions. Other types of evidence include the *systematic review*, *case control study*, *cohort study*, and *cross-sectional study*. In evaluating or designing a trial, it is important to keep in mind potential biases and carefully calculate the *sample study size* large enough (with adequate *power*) to calculate a difference between groups. Other types of evidence include the *systematic review*, *case control study*, *cohort study*, and *cross-sectional study*.

Future perinatal forums will reflect regional collaborative efforts. Such efforts will occur between regional perinatal affiliates and local Perinatal Networks to address local public health issues, such as rates of breastfeeding and access to prenatal care in the first trimester. By identifying regional public health issues and those local resources available to address these issues, we hope to positively affect maternal and neonatal outcomes.

Regional Quality Assurance

Through Collaboration at such Regional Perinatal Forums, we are able to help focus our specific goals and improve quality of care. Another aspect of this collaborative effort will center on regional quality assurance conferences with the goal of discussing challenging cases among local peers to determine better ways to treat future cases. Such conferences will be held quarterly for each regional cluster of local affiliates and offer an opportunity to review regional statistics including special outcomes of interest to the specific region. A best practices portion will also be included at these conferences to allow the members of the cluster of affiliates to present successful practice guidelines to be implemented in the region as well as discuss future strategies.

Regionalization of perinatal care in New York State allows opportunities for both public health and perinatal outcome improvement. Through collaboration in perinatal forums, databases, and regional quality assurance conferences we have a chance to positively impact the future of perinatal care in our own region.

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**Pediatric Grand Rounds
WIHD, Baird Auditorium
January 2003
8:00 AM**

1/15 “Role of the Pediatrician in the Assessment of Learning Disabilities/Differences”.

Paul Yellin, MD
Clinical Associate Professor of Pediatrics
NYU School of Medicine

1/22 “Childhood Idiopathic Thrombocytopenic Purpura (ITP): Observations from two decades of NYMC-WMC experience.

S. Jayabose, MD
Professor of Pediatrics New York Medical College/WMC

1/29 “Pediatric Dermatology Update: Atopic Dermatitis”

Richard J. Antaya, MD. FAAP, FAAP
Assistant Professor, Dermatology and Pediatrics
Director, Pediatric Dermatology
Yale University, School of Medicine

2/5 Pediatric Surgery – topic pending

2/12 Pediatric Gastroenterology - topic pending

2/19 Pediatric Psychology – topic pending

2/26 Pediatric Adolescent Medicine – topic pending

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We are interested in providing you with a newsletter that is relevant and of interest to you. Please contact us with perinatal topics you would like to see addressed.

For a copy of our newsletter or to be placed on our mailing list contact us by phone or e-mail.

Please see below the NYMC neonatal web site address to locate other issues of The Gazette:

<http://www.nymc.edu/neonatology>

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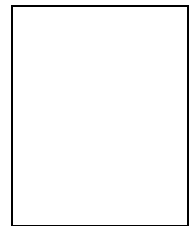
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