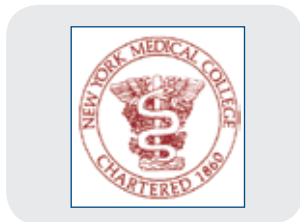


The Perinatal Gazette

Newsletter of the Regional Perinatal Center Maria Fareri Children's Hospital at Westchester Medical Center



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Hyperthyroidism in Pregnancy

Hyperthyroidism complicates 0.2 % of pregnancies. Ninety percent of cases are due to Grave's Disease, which is an autoimmune disorder associated with the presence of circulating thyroid stimulating antibodies. Some of the signs and symptoms of hyperthyroidism include tachycardia, weight loss, heat intolerance and systolic flow murmurs. Because of the hyperdynamic state of pregnancy, some of these signs may be overlooked or mistaken as normal physiologic changes of pregnancy. Confirmation of the diagnosis can be made by measuring FT4 and FT3 levels, which are elevated. Pregnancy does not appear to worsen the course of hyperthyroidism.

The major risk to a pregnant woman with hyperthyroidism is the development of thyroid storm. The incidence is highest in teens and young adult women. It is more likely to occur when there is some precipitating factor such as infection, surgery, trauma or Diabetic Ketoacidosis. It can also be brought about by either aspirin use or abrupt discontinuation of thyroid medication. Thyroid storm is characterized by hyperpyrexia, which may exceed 40 degrees Celsius. Tachycardia is usually out of proportion to the fever and can even lead to high output cardiac failure along with atrial fibrillation. Other symptoms include dyspnea, diarrhea, vomiting, abdominal pain and various CNS manifestations such as seizures and psychosis.

There are no differences in thyroid function tests that will distinguish hyperthyroidism from thyroid storm. In essence,

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New Guidelines for Infant Hearing Screening

BACKGROUND

Three in 1000 infants born in the United States have permanent hearing loss. Infants who spend a prolonged amount of time in the neonatal intensive care unit (NICU) are at even higher risk of not only peripheral hearing loss, but of retrocochlear and/or central auditory processing deficits. The literature has supported the advantages of early identification and treatment. Children who are identified prior to or during the language-learning period develop better oral language skills and are more successful academically.

The Joint Commission for Infant Hearing (JCIH), a committee whose members include representatives from the fields of pediatrics, otolaryngology, audiology and deaf education, has advocated for early identification of infant hearing loss since 1970. In 1972, the Committee published the first "High Risk Register for Hearing Loss". They recommended audiological testing of infants with 1) a family history of hearing impairment, 2) a congenital infection known to be associated with hearing loss such as toxoplasmosis, syphilis, rubella, cytomegalovirus, and herpes, 3) craniofacial anomalies, 4) birth weight less than 1500 grams and/or 5) hyperbilirubinemia at a serum level high enough to require exchange transfusion.

In subsequent publications, the JCIH recommended testing of infants with a history of bacterial meningitis, severe asphyxia, Apgar scores of 0-4 at one minute or 0-6 at five minutes, prolonged mechanical ventilation (> 5 days), the presence of stigmata associated with genetic syndromes known to include hearing loss and the administration of multiple courses of ototoxic drugs. The Committee also recommended audiological surveillance of all infants who are at risk of late onset or progressive hearing loss, those who have a history of recurrent otitis media or those whose parents/caregivers express a concern about the child's hearing.

In the late 1980s and early 1990s, two objective methods of assessing auditory status became clinically available. First, auditory brainstem response testing (ABR) assesses the integrity of the auditory system from the cochlea through the eighth cranial nerve and low auditory brainstem pathways.

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it is critical hyperthyroidism with end organ damage. The mortality rate is up to 25% even in cases that are appropriately managed.

Complications in pregnancy include an increased risk for preterm labor, severe preeclampsia, heart failure, spontaneous loss and abruption. Fetal effects may include prematurity, small for gestational age neonates, intrauterine fetal demise and neonatal thyrotoxicosis.

The appropriate therapy of a patient in thyroid storm involves rapid intervention with supportive measures such as intravenous fluid, electrolyte replacement and antipyretics for the hyperthermia. The medical management includes high doses of propylthiouracil and or tapazole. Esmolol or propranolol should be given to reduce adrenergic over activity. Dexamethasone may also be given to decrease thyroid hormone release and peripheral conversion of T4 to T3. Thyroid storm will usually resolve within 24 hours. Therapy for hyperthyroidism is best begun prior to pregnancy. Patients should be counseled that therapy will need to be continued during pregnancy along with serial thyroid function studies. Potential perinatal risks also need to be reviewed as well.

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WESTCHESTER MEDICAL CENTER WELCOMES DR. SMITH AS SECTION CHIEF OF MATERNAL FETAL MEDICINE.

Dr. James Smith, M.D., attended Carroll College in Helena, Montana, and completed medical school at St. Louis University. He completed residency at the Naval Medical Center in Portsmouth, Virginia, and fellowship in Maternal Fetal Medicine at the University of New Mexico. He has practiced in Virginia and Colorado, and has served as clinical faculty at Stanford University. Dr. Smith is certified in Obstetrics and Gynecology with special qualification in Maternal and Fetal Medicine, and has served as an examiner for the American Board of Obstetrics and Gynecology. He has also served in several administrative and academic positions in his professional career. Dr. Smith enjoys skiing, playing guitar, jazz and blues music, running, and pinot noir wine, but not necessarily in that order. He and his wife Melanie have two daughters.



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Second, otoacoustic emission (OAE) testing assesses the integrity of the cochlea outer hair cells. Correlation with behavioral test results, obtained as the child matures, has been high.

In 1994 the JCIH endorsed early hearing evaluation and detection of hearing deficits by 3 mos. post discharge and intervention by age 6 mos. In 2000 JCIH endorsed hospital based screening programs to utilize OAE &/or ABR testing on a Pass/Fail basis. Follow-up testing should occur within 4 weeks of discharge for those babies that fail screenings.

2007 POSITION PAPER

By 2005, American hospitals screened 95% of babies for hearing loss. Recent data support the improvement in speech and language development and academic achievement when hearing loss is identified within the recommended guidelines. Despite these advances, recent evidence suggests that current test procedures may fail to identify those children with mild or late onset or progressive hearing loss. In addition, current protocols may miss children with neural hearing loss, or auditory neuropathy/dyssynchrony. Although many of these children have normal peripheral hearing, the literature suggests that these children are at risk of having difficulty learning through the auditory modality.

The Committee's 2007 position paper recommends OAE testing for those babies discharged from the well baby unit or those discharged from the NICU within five days of life. JCIH recommends separate protocols for infants discharged from the NICU after five days of life. Recognizing that it can often be difficult for hospital personnel to identify those risk factors associated with auditory neuropathy/dyssynchrony the Committee has recommended ABR testing for all infants discharged from the NICU after five days of life. In addition, any child who is at risk of having auditory neuropathy/dyssynchrony should receive an ABR screening.

Infants with a NICU stay longer than 5 days or those with risk factors for hearing loss, as delineated in the 1972 High Risk Register and subsequent statements (as outlined above) should receive an audiologic evaluation at 24-30 months of age to rule out the possibility of progressive or late onset hearing loss, even if they have passed their infant hearing screen. Early or more frequent monitoring is recommended for those infants with risk factors that have a high association with progressive or late onset hearing loss, such as CMV, a culture positive post-natal infection associated with sensori-neural hearing loss, a genetic syndrome associated with progressive hearing loss, a neurodegenerative disorder, trauma, chemotherapy, familial hearing loss and when there is caregiver concern.

Infants who fail an OAE or ABR screening should be re-screened within one month of the initial test. Any infant, who fails an ABR screen or an OAE re-screen, should receive a comprehensive audiologic evaluation.

Guidelines for audiological diagnosis and habilitation include tone specific ABR threshold testing to obtain auditory threshold at discrete frequencies, click evoked ABR testing to rule out auditory neuropathy/dyssynchrony, diagnostic OAE

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Westchester Medical Center

More about:

Frank A. Manning M.D., MSc(OXON), FRCS, FACOG

received his MD degree from the University of Manitoba. He did a rotating internship at the University of Southern California and a residency in Obstetrics & Gynecology at the University of Manitoba. He was awarded a scholarship to University of Oxford where he studied fetal physiology and obtained a Masters degree. He then moved to the University of Southern California to join the Division of Maternal Fetal Medicine.

While in California Dr. Manning successfully completed his examinations and obtained his Board Certification in Obstetrics & Gynecology and in the sub-specialty of Maternal-Fetal Medicine. In 1979 he returned to the University of Manitoba to create the Division of Maternal-Fetal Medicine there. He became Head of the Department of OB/GYN & subsequently Director of Obstetrics & Gynecology for the Province of Manitoba. He was promoted to full Professor with tenure. In 1996 he moved to Columbia University as a tenured Professor & Director of the Division of Maternal Fetal Medicine. In 2002 Dr. Manning moved to Albert Einstein University as a professor and member of the Division of Maternal Fetal Medicine. In 2005 he became Chair of the Department of OB/GYN at New York University Downtown Hospital and Professor at New York University School of Medicine. In February of 2008 he joined the Department of Obstetrics & Gynecology at New York Medical College as the Assistant Director of the Division of Maternal-Fetal Medicine.

Dr. Manning has published more than 160 peer reviewed clinical/research articles, more than 150 abstracts, more than 100 invited submissions and several books including standard textbooks in Ultrasound in Obstetrics & Gynecology and in Fetal Medicine. He has lectured throughout the world and has received honorary degrees, medals, certificates of recognition, and admission to learned societies from Universities in Canada, the United States, England, Italy, Chile, Brazil, Australia, India the Philippines and others.

Dr. Manning is credited for developing the Fetal Biophysical Profile, a standard test for evaluation of fetal health. He did the original work on amniotic fluid volume measurements and the value of this observation in assessing fetal health. He was among the world's first to perform fetal surgery and was President of the Fetal Medicine and Surgery Society and the Registrar of the Fetal Surgery Registry. He is considered a world expert in obstetric ultrasound and fetal medicine. He is married (Ann) and has three grown daughters.



Continued from pg. 2- Hearing Screening

testing, 1000 Hz tympanometry and behavioral audiologic testing at developmentally appropriate intervals. When an auditory disorder is diagnosed, the audiologist should fit hearing aids and/or make a referral for early intervention services by six months of age.

Audiologists from the Speech and Hearing Clinic at Westchester Medical Center have been performing infant hearing screenings since 1997, four years before required by New York State. We screen over 1200 infants a year, approximately four percent of who are referred for outpatient re-screening. All infants receive OAE screening and those infants who are at risk of progressive or late onset hearing loss or those infants at risk of having auditory neuropathy/dyssynchrony are referred for outpatient ABR testing.

Mindy Schmelzer, AuD, CCCA

Supervisor of Audiology, Westchester Medical Center

CONGRATULATIONS!

Dr. Johanna Calo for winning best Pediatric Poster Presentation at the 31st Annual Scientific meeting of the New York Perinatal Society. Dr. Calos' work is centered around the question: "Are single nucleotide polymorphisms of superoxide dismutase associated with bronchopulmonary dysplasia?"

Dr. J. Chelala (Putnam Hospital) and Dr. G. Mendoza (Good Samaritan Hospital) for making the cut as neonatology "top doctors" in the Hudson Valley Magazine survey!

KUDOS!

Dr. Heather Brumberg, M.D. M.P.H., FAAP will serve as an official AAP Liaison to the CDC/APHA "Building a Successful Tracking Network" meeting on May 8-9, 2008 in Washington DC.

SAVE THE DATE

Advancing Perinatal Health: Quality in Every Step

New York State Perinatal Association

JUNE 5 & 6, 2008

Crowne Plaza Albany
Albany, NY

Plenary Speaker: Edmund LaGamma, MD, Chief, Division of Newborn Medicine, Director Regional NICU, Maria Fareri Children's Hospital at Westchester Medical Center

On the Frontier of Infant Brain Development: Thyroid Hormone Supplementation

Workshop Speaker: Heather Brumberg, MD, MPH, FAAP, Assistant Professor of Pediatrics & Clinical Public Health, Director of Regional Perinatal Health Programs, The Regional NICU, Maria Fareri Children's Hospital at Westchester Medical Center

Family Centered Care in the NICU
Questions? Call (877) 268-5072

CONGRATULATIONS

Hudson Valley Magazine Recognizes Jenny Simmons as a Top Nurse in the Region

Hudson Valley Magazine asked professionals at local hospitals, private practices, schools, nursing homes and health care facilities to nominate nurses who have gone above and beyond the call of duty at work and in their communities for its Excellence in Nursing Award. Westchester Medical Center is proud to announce that Jenny Simmons, R.N., a nurse in the Neonatal Intensive Care Unit at Maria Fareri Children's Hospital at Westchester Medical Center, has been recognized as a top 20 finalist for the award. Hudson Valley Magazine honored Jenny and the many other outstanding nurses who have made a difference in their community at a celebratory dinner during the National Nurses Week in early May. Jenny is also profiled in the May issue of the magazine.

Jenny has been a nurse in the NICU at Maria Fareri Children's Hospital for 15 years. During her time here, she has taken it upon herself to ensure that the families of the smallest patients at Westchester Medical Center are tended to with care and compassion. In the NICU, Jenny goes that extra mile by volunteering to serve as an interpreter for her patients' Spanish-speaking families. She consistently takes the time to make sure that her patients' diagnoses and care are understood by those closest to them. She carefully explains to families how to care for their premature baby both at the hospital and once they have been welcomed home.

Outside of the hospital, Jenny shares her life with her husband and three children. She is actively involved in community projects that have benefited from her knowledge of nursing. She is currently the Coordinator of a program called Stork's Nest, which partners with the March of Dimes. The program provides prenatal classes at the Peekskill Hudson Valley Health Care Center, and through a grant from the March of Dimes, provides a brand new car seat to each attendee as an incentive to receive education about prenatal care.

Additionally within her community, Jenny provides educational opportunities for men, women, young people and children through presentations about HIV prevention, domestic abuse, hypertension in African-Americans, influenza and premature birth. She has also volunteered with a charity project to fill backpacks with school supplies and gift them to elementary school students who otherwise would have gone without these supplies. Recently, Jenny also facilitated a workshop at Mercy College to assist female teens in their preparation for college as part of the STEP and CSTEP Programs.

Jenny handles her responsibilities with grace and kindness, volunteering in her community, assisting her fellow nurses, and acting as a support person to colleagues and patients' families.

WE ARE VERY PROUD AND CONGRATULATE JENNY ON SUCH A WONDERFUL ACHIEVEMENT!

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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 Perinatal Gazette:

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



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