

WFBH Neurology Residents' Newsletter Summer 2013

Many Neurology residents here at WFBH are involved in research and quality improvement issues, in addition to clinical duties. This newsletter aims to highlight the achievements of our residents – from the clinic to the research lab, from national and international meetings to the committee room.

Focus on Status Epilepticus:

Meagan Bailey, Laura Bishop,

Robert Bolen & Jane Boggs, MD

Drs. Bailey, Bishop, Bolen and Boggs (AKA – The Four B's) are currently involved in a retrospective study looking at treatment of status epilepticus in our facility over the past six months. By evaluating trends and outcomes, these inquisitive investigators will help shape the future treatment of SE. According to Dr. Bailey, this study aims to “evaluate the barriers that have led to delayed care for SE patients in the past so that we can try to improve upon this in the future.” For more information, please contact any of the physicians listed above.

International Maternal Newborn Stroke Registry

Dr. Mariana Ciobanu and Dr. Cheryl Bushnell

The incidence of peripartum maternal stroke is about 34 per 100,000 deliveries in the U.S. and the incidence of perinatal (28 weeks gestation to 28 postnatal days) infant ischemic stroke is 67 per 100,000 live births in Canada. Because no existing stroke databases have enrolled both maternal and neonatal stroke cases, prospective standardized data on the incidence and causes of peripartum/perinatal stroke are scant. Since pregnancy and delivery confer a highly significant increased risk for both maternal and infant strokes, there are likely to be as yet undiscovered interactions among maternal and infant characteristics in the pathogenesis of both stroke subtypes.

Dr. Ciobanu and Dr. Bushnell, have started a pilot ‘International Maternal Newborn Stroke Registry’ (IMNSR) in 4 international sites that will, for the first time, form a collaborative network of pediatric and adult stroke neurologists, neonatologists, and obstetricians, to collect and analyze novel data on the prevalence and risk factors for maternal and newborn stroke. This pilot phase will also establish the capacity to enroll matched maternal/newborn controls. The aims of this bold study are as follows:

Aim 1: To develop an international registry of mother-infant dyads in which one member or both has experienced perinatal stroke. They will match maternal/neonatal controls to each case pair.

Aim 2: To collect pilot data on possible risk factors and imaging for maternal and neonatal strokes across various race-ethnicities and international geographic regions.

Aim 3: To establish a repository of plasma and DNA from maternal and neonatal stroke patients and their respective pairs, as well as controls, for analysis of genotypes and biomarkers in future studies.

Telomere length in ALS - Drs. Grear and Caress

Telomeres are chromatin structures comprised of long nucleotide repeats (TTAGGG) that are present at the end of eukaryotic chromosomes. They function, along with a host of telomere-specific and accessory proteins, to protect the chromosome end from being recognized as a DNA break; thus, inhibiting telomere fusions, recombination and genomic instability. However, as the DNA replication machinery is unable to replicate terminal DNA at chromosome ends, telomeric sequence is lost with each round of replication.

In humans, telomeres are several kilobases in length and the length is inversely proportion to age. Telomere shortening is accelerated with cardiovascular disease, infection, smoking and obesity. Drs. Caress and Grear are currently involved in a research project to evaluate telomere length in ALS. They will use PCR-based methods to quantify telomere length in 60 ALS patients and 60 controls to determine if a difference exists. The second phase of the study plans to evaluate the rate of disease progression relative to telomere length.

Recent Resident Publications:

Lovan, A, Haq, I & N Balakrishnan. Diagnostic Challenges in Movement Disorders: Sensory Ataxia Neuropathy Dysarthria and Ophthalmoplegia (SANDO) Syndrome. *BMJ*. Accepted for publication July, 2013.

Grear, KE and CB Bushnell. Stroke and pregnancy: Clinical presentation, Evaluation, Treatment and Epidemiology. *Clin Ob Gyn*. 2013; 56: 350-359.

Acute Stroke Trials:

POINT – Reynolds - TIA (ABCD score ≥ 4) or Minor ISC (NIHSS ≤ 3) and randomize within 12 hours of symptom onset

CLEAR-III - Tucker - IVH with 3rd and 4th ventricles occluded w/blood with SOC IVC placement

ATACH – II Tucker - BP treatment (SBP > 180 prior to antihypertensive treatment) in ICH – IV Cardene and randomization initiated within 4.5 hours of symptom onset

CLOTBUSTER – Bushnell - t-PA in acute ISC stroke SOC study with headframe. Headframe worn during t-PA administration for 120 mins with NIHSS completed at 120 min mark.

REMEMBER to use Dr. Arnan's AMAZING APP to help determine eligibility!!!

Accepted Abstracts for upcoming meetings:

OFFICE SYSTEM MODIFICATION INTERVENTION MODEL TO PROMOTE THE EVIDENCE-BASED CARE OF CHILDREN WITH ADHD IN A RURAL PEDIATRIC PRACTICE to be presented at the International Congress of Pediatrics in Melbourne, Australia (24-29 of August) - **Dr. Mariana Ciobanu**

History of Child Neurology in Moldova

Grefe A, **Ciobanu M**, Railean A, Railean G | Wake Forest University Baptist Medical Center, North Carolina, United States, and State University of Medicine and Pharmacy Nicolai Testemitanu, Chisinau, Moldova EPNS meeting in Brussels 25-29 September 2013