ARTICLES OF INTEREST – August, 2018

Outcomes of preterm infants treated with hypothermia for hypoxic-ischemic encephalopathy

To assess the impact of therapeutic hypothermia (TH) on outcomes in preterm infants, the authors conducted a retrospective cohort analysis of 30 infants treated with TH for HIE (median 35 weeks and weight 2575 g). They report that of the 18 surviving infants (69.2%) with follow up data; 7 had moderate to severe NDI (38.9%) and mean cognitive, motor and language composite BSID III scores of 84, 83, and 78, respectively. Death or moderate to severe NDI occurred in 11/22 (50%) infants with known outcomes. The authors conclude that large randomized trials on efficacy and safety are needed given the high incidence of complications and the combined outcome of death and NDI in this population.

Human and bovine colostrum for prevention of necrotizing enterocolitis: a meta-analysis

Human and bovine colostrum (HBC) administration has been linked to beneficial effects on morbidity and mortality associated with necrotizing enterocolitis (NEC). In this meta-analysis, the authors sought to determine the effectiveness and safety of HBC for reducing NEC, mortality, sepsis, time to full-feed and feeding intolerance in preterm infants. The authors found that bovine or human colostrum has no effect on severe NEC, mortality, culture-proven sepsis, feeding intolerance, or length of stay. Additional research focused on the impact on enteral feeding may be needed to confirm the findings on this outcome.

Anemia of prematurity and cerebral near-infrared spectroscopy: should transfusion thresholds in preterm infants be revised?

This cohort study included 68 infants born ≤30 weeks EGA who were evaluated with weekly cerebral regional oxygen saturation and clinically obtained hemoglobin values (collected within the previous 7 days). The authors found that for transfusion-naïve infants, cerebral regional oxygen saturation critically decreased below two standard deviations (<55%) at a hemoglobin of 9.5 g/dL (AUC 0.81, p < 0.01).
Does duration of caffeine therapy in preterm infants born ≤1250 g at birth influence neurodevelopmental (ND) outcomes at 3 years of age?
This study evaluated 488 infants with BW <1250g who were treated with caffeine and followed up at 3 years corrected age. Infants were divided into three groups: early cessation (≤14 days of caffeine treatment), intermediate cessation (15-30 days), and late cessation (>30 days). After controlling for risk factors, the authors found no statistically significant association between caffeine duration and neurodevelopmental impairment.

Comparison of safety and efficacy of methadone vs morphine for treatment of neonatal abstinence syndrome: a randomized clinical trial
In a multicenter, randomized trial at 8 newborn units in the US, 117 infants with neonatal abstinence syndrome were randomized to methadone or morphine and the primary outcome of length of hospital stay (LOS) was evaluated. Methadone, compared to morphine, was associated with a 14% reduction in LOS (average of 2.9 days less in hospital) and a 16% reduction in length of drug treatment (average of 2.3 days less of treatment). Assessment of longer-term outcomes is ongoing.

Does red blood cell irradiation and/or anemia trigger intestinal injury in premature infants with birth weight ≤ 1250 g? An observational birth cohort study (PDF)
This study is a prospective, multicenter observational cohort study of infants with a birth weight ≤ 1250g to examine the effect of both RBC unit and recipient factors on the physiologic perturbations that cause NEC. Specifically studying post-irradiation storage time and metabolomics of RBC transfusions, the authors compared infants with NEC to closely matched non-NEC controls and explored the implications of severe anemia leading to NEC development.

Early treatment versus expectative management of patent ductus arteriosus in preterm infants: a multicentre, randomised, non-inferiority trial in Europe (BeNeDuctus trial) (PDF)
A multicenter, randomized, non-inferiority trial is being conducted in NICU’s looking at preterm infants (GA < 28 weeks) with an echocardiographic confirmed PDA with a transductal diameter of > 1.5 mm. Early treatment (between 24 and 72 h postnatal age) with a cyclooxygenase inhibitor will be compared with expectant management. Primary outcome is composite mortality and/or NEC and/or BPD.

OTHER NOTEWORTHY PUBLICATIONS – August, 2018

*Pediatrics*
Health of infants after ART-treated, subfertile, and fertile deliveries  
High blood pressure at early school age among extreme preterms  
Drinking or smoking while breastfeeding and later cognition in children  
Out-of-home care and subsequent preterm delivery: an intergenerational cohort study  
Factors associated with refusal of intramuscular vitamin k in normal newborns  
Visual and hearing impairments after preterm birth  
Placental abruption and child mortality
Heterotaxy syndrome and intestinal rotation abnormalities
Maternal alcohol use during lactation and child development
Stress as a link between childhood trauma and preterm delivery

Journal of Pediatrics
50 years ago in the Journal of Pediatrics: Trisomy 13 (D1) syndrome: studies on parental age, sex ratio, and survival
New findings in congenital cytomegalovirus infection: the spectrum from asymptomatic to symptomatic infection
50 years ago in the Journal of Pediatrics: oral polio immunization of the newborn infant; a possible method for overcoming interference by ingested antibodies
Factors associated with timing and adverse outcomes in patients with biliary atresia undergoing Kasai hepatopancreatoenterostomy
Attitudes surrounding the management of neonates with severe necrotizing enterocolitis
Assessing ethics knowledge: development of a test of ethics knowledge in neonatology
Outpatient pharmacotherapy for neonatal abstinence syndrome
Sildenafil and retinopathy of prematurity in preterm infants with bronchopulmonary dysplasia
Increased fracture risk with furosemide use in children with congenital heart disease
Risk factors for early dialysis dependency in autosomal recessive polycystic kidney disease
Association between furosemide exposure and patent ductus arteriosus in hospitalized infants of very low birth weight
The erythropoietin promoter variant rs1617640 is not associated with severe retinopathy of prematurity, independent of treatment with erythropoietin
Risk factors, geographic distribution, and healthcare burden of symptomatic congenital cytomegalovirus infection in the United States: analysis of a nationally representative database, 2000-2012
Concurrent hearing, genetic, and cytomegalovirus screening in newborns, Taiwan
Valganciclovir is beneficial in children with congenital cytomegalovirus and isolated hearing loss
Pediatric Research
Neonatal sepsis leads to early rise of rare serum bile acid tauro-omega-muricholic acid (TOMCA)
The premature infant gut microbiome during the first 6 weeks of life differs based on gestational maturity at birth
Characterization and origin of heme precursors in amniotic fluid: lessons from normal and pathological pregnancies
Neonatal autonomic function after pregnancy complications and early cardiovascular development
Prospective plasma proteome changes in preterm infants with different gestational ages
Antenatal/early postnatal hypothyroidism increases the contribution of Rho-kinase to contractile responses of mesenteric and skeletal muscle arteries in adult rats
Mannose-binding lectin and mannose-binding protein-associated serine protease 2 levels and infection in very-low-birth-weight infants
Heme oxygenase-1 deficiency promotes severity of sepsis in a non-surgical preterm mouse model
Neonatologist performed echocardiography (NPE)

Archives of Disease in Childhood - Fetal & Neonatal Edition
N Improved pregnant women’s understanding of research information by an enhanced informed consent form: a randomised controlled study nested in neonatal research
Analysis of unsuccessful intubations in neonates using videolaryngoscopy recordings
Trainees success rates with intubation to suction meconium at birth
Respiratory adaptation in term infants following elective caesarean section
Care bundles to reduce central line-associated bloodstream infections in the neonatal unit: a systematic review and meta-analysis
Effect of a smaller target range on the compliance in targeting and distribution of oxygen saturation in preterm infants
Sensory exposure of neonates in single-room environments (SENSE): an observational study of light
Always a burden? Healthcare providers’ perspectives on moral distress
Outcomes of oxygen saturation targeting during delivery room stabilisation of preterm infants
Chest compression during sustained inflation versus 3:1 chest compression:ventilation ratio during neonatal cardiopulmonary resuscitation: a randomised feasibility trial
One-year outcomes following surgery for necrotising enterocolitis: a UK-wide cohort study
Tobacco, alcohol and illicit drugs during pregnancy and risk of neuroblastoma: systematic review
Antimicrobial resistance in UK neonatal units: neonIN infection surveillance network
Validity of neurodevelopmental outcomes of children born very preterm assessed during routine clinical follow-up in England
Retrospective cohort analysis on pancreatic enzyme substitution in very low birthweight infants with postnatal growth failure
Comparison of infant heart rate assessment by auscultation, ECG and oximetry in the delivery room
Case of membranous oesophageal atresia
Clinical aspects of incorporating cord clamping into stabilisation of preterm infants

**Journal of Perinatology**

**August**

Emergency release uncross-matched packed red blood cells for immediate double volume exchange transfusion in neonates with intermediate to advanced acute bilirubin encephalopathy: timely but insufficient?

A directory for neonatal intensive care: potential for facilitating network-based research in neonatology

Prediction of preterm birth with and without preeclampsia using mid-pregnancy immune and growth-related molecular factors and maternal characteristics

Second trimester serum cortisol and preterm birth: an analysis by timing and subtype

Effects of maternal obstructive sleep apnea on fetal growth: a case-control study

Prenatal consultation: perspectives on training, relevance, and utilization among pediatric subspecialty program directors

Severe maternal morbidity and related hospital quality measures in Maryland

Impact of neonatologist availability on preterm survival without morbidities

Inadequate iron stores in early term neonates

Epidemiology of patient monitoring alarms in the neonatal intensive care unit

Targeted neonatal echocardiography (TNE) consult service in a large tertiary perinatal center in Canada

Bronchopulmonary dysplasia: effect of altitude correction and role for the Neonatal Research Network Prediction Algorithm

Neonatal outcomes of extremely preterm infants exposed to maternal hypertension and cigarette smoking
Association between sedation–analgesia and neurodevelopment outcomes in neonatal hypoxic-ischemic encephalopathy

NICU management and outcomes of infants with trisomy 21 without major anomalies

A randomized controlled trial: does coaching using video during direct laryngoscopy improve residents’ success in neonatal intubations?

The amount of supervision trainees receive during neonatal resuscitation is variable and often dependent on subjective criteria

Outcomes of hypoxic respiratory failure at birth associated with previable rupture of membranes

Factors affecting neurodevelopmental outcome at 2 years in very preterm infants below 1250 grams: a prospective study

Opinions of Israeli neonatologists about life and death decisions in neonates

National trends in neonatal extracorporeal membrane oxygenation in the United States

Quality improvement initiative to improve inpatient outcomes for neonatal abstinence syndrome

July

Does maternal chorioamnionitis have to equal antibiotics in an asymptomatic infant?

Dispute between physicians and family on surgical treatment for an infant with ultra-short gut syndrome: the perspective of an Ethics Committee

Finding the right treatment for neonatal abstinence syndrome: is this the right time?

Prenatal counseling and parental decision-making following a fetal diagnosis of trisomy 13 or 18

Differences in prenatal aneuploidy screening among African–American women with hemoglobin S variants

The relative effects of patient and hospital factors on postpartum readmissions

Impact of antenatal corticosteroids in preterm neonates based on maternal body mass index

Cost effectiveness of vitamin C supplementation for pregnant smokers to improve offspring lung function at birth and reduce childhood wheeze/asthma

The window of improved neonatal respiratory compliance after rescue antenatal steroids

Reduced oxygen concentration for the resuscitation of infants with congenital diaphragmatic hernia

Association of admission temperature and death or adverse neurodevelopmental outcomes in extremely low-gestational age neonates

Resource utilization patterns using non-invasive ventilation in neonates with respiratory distress syndrome
Exploring parent expectations of neonatal therapeutic hypothermia
Informed consent for a neonatal clinical trial: parental experiences and perspectives
https://www.ncbi.nlm.nih.gov/pubmed/29795451
Patterns of acute bilirubin encephalopathy in Nigeria: a multicenter pre-intervention study
Early NT-proBNP levels as a screening tool for the detection of hemodynamically significant patent ductus arteriosus during the first week of life in very low birth weight infants
Do preterm infants with a birth weight ≤1250 g born to single-parent families have poorer neurodevelopmental outcomes at age 3 than those born to two-parent families?
Accuracy of the Bayley-II mental development index at 2 years as a predictor of cognitive impairment at school age among children born extremely preterm
Trends in the neurodevelopmental outcomes among preterm infants from 2003–2012: a retrospective cohort study in Japan
Introduction to quality improvement tools for the clinician
Reducing time to initiation and advancement of enteral feeding in an all-referral neonatal intensive care unit
https://www.ncbi.nlm.nih.gov/pubmed/29740193

**Neonatology**

Head ultrasound in neonatal hypoxic-ischemic injury and its mimickers for clinicians: a review of the patterns of injury and the evolution of findings over time
Cardiac valve annulus diameters in extremely preterm infants: a cross-sectional echocardiographic study (PDF)
https://www.karger.com/article/pdf/488387
Reduced prevalence of severe intraventricular hemorrhage in very preterm infants delivered after maternal preeclampsia
The so-called “protective effect” of preeclampsia on perinatal brain damage
Gestational age and the cord blood lipidomic profile in late preterm and term infants
Hemolysis and glucose-6-phosphate dehydrogenase deficiency-related neonatal hyperbilirubinemia
Maternal intrapartum antibiotic administration and infantile colic: is there a connection?
Assessing the surgical experience to identify risk factors associated with severe retinopathy of prematurity and laser intervention
Neonatal phototherapy: a novel therapy to prevent allergic skin disease for at least 5 years
Survival of immunoglobulins from human milk to preterm infant gastric samples at 1, 2, and 3 h postprandial
MRI changes in the thalamus and basal ganglia of full-term neonates with perinatal asphyxia (PDF)
https://www.karger.com/article/pdf/489159
Language exposure of preterm infants in the neonatal unit: a systematic review
Risk factors for necrotizing enterocolitis: a prospective multicenter case-control study (PDF)
https://www.karger.com/article/pdf/489677

**American Journal of Perinatology**

Body mass index change between pregnancies and risk of spontaneous preterm birth

Surfactant treatment threshold during NCPAP for the treatment of preterm infants with respiratory distress syndrome

Provider awareness, understanding and use of NICHD Neonatal Research Network outcomes estimator

Association between hemoglobin levels in the first 3 days of life and bronchopulmonary dysplasia in preterm infants

Vaginal fluid inflammatory biomarkers and the risk of adverse neonatal outcomes in women with PPROM

Center variation in the delivery of indicated late preterm births (PDF)

Quantitative, noninvasive assessment of patent ductus arteriosus shunt flow by measuring proximal isovelocity surface area on color doppler mapping in very low-birth-weight infants
https://www.ncbi.nlm.nih.gov/pubmed/27057768

Continuous positive airway pressure versus mechanical ventilation on the first day of life in very low-birth-weight infants (PDF)

Association between peripherally inserted central venous catheter insertion site and complication rates in preterm infants

**Journal of Neonatal-Perinatal Medicine**

Universal newborn hearing screening using A-TEOAЕ and A-ABR: the experience of a large public hospital

Pleuro-pericardial communication due to pigtail catheters in extreme preterm infants: diagnosis and intervention

Erb’s palsy complicating a case of annular pancreas

Extravasation of total parenteral nutrition into the liver from an upper extremity peripherally inserted central venous catheter
https://www.ncbi.nlm.nih.gov/pubmed/29689743

Microsurgical repair of neonatal iliac artery injuries with saphenous vein grafts
https://www.ncbi.nlm.nih.gov/pubmed/29689742

**Maternal Health, Neonatology and Perinatology**

Recent trends, risk factors, and disparities in low birth weight in California, 2005–2014: a retrospective study
Neoreviews
Neonatal hypotonia
http://neoreviews.aappublications.org/content/19/8/e445
The placenta and neurodevelopment in preterm newborns
http://neoreviews.aappublications.org/content/19/8/e456
Neonatal hydrocephalus
http://neoreviews.aappublications.org/content/19/8/e467
Case 1: Scrotal swelling in a term infant
http://neoreviews.aappublications.org/content/19/8/e478
Case 2: Acute respiratory distress, hypoxia, and pulmonary hypertension in the nursery
http://neoreviews.aappublications.org/content/19/8/e481
Case 3: Ambiguous genitalia in a newborn
http://neoreviews.aappublications.org/content/19/8/e485
Strip of the Month: A catastrophic fetal intracranial hemorrhage
http://neoreviews.aappublications.org/content/19/8/e493
Fluctuant mass on an infant’s scalp
http://neoreviews.aappublications.org/content/19/8/e490
A case of neonatal thrombocytopenia and seizures: diagnostic value of hyperpigmentation
http://neoreviews.aappublications.org/content/19/8/e502

JAMA Pediatrics
Association of early introduction of solids with infant sleep: a secondary analysis of a randomized clinical trial
Association of gestational age at birth with symptoms of attention-deficit/hyperactivity disorder in children
Association of cesarean delivery with body mass index z score at age 5 years
Association of gestational diabetes and type 2 diabetes exposure in utero with the development of type 2 diabetes in first nations and non-first nations offspring
https://www.ncbi.nlm.nih.gov/pubmed/29889938
Developmental coordination disorder and its association with developmental comorbidities at 6.5 years in apparently healthy children born extremely preterm

BMC Pediatrics
Maternal and child patterns of Medicaid retention: a prospective cohort study (PDF)
Review of guidelines on expression, storage and transport of breast milk for infants in hospital, to guide formulation of such recommendations in Sri Lanka (PDF)
Early intervention program for very low birth weight preterm infants and their parents: a study protocol (PDF)
Illness recognition and appropriate care seeking for newborn complications in rural Oromia and Amhara regional states of Ethiopia (PDF)
Mobility may impact attention abilities in healthy term or prematurely born children at 7-years of age: protocol for an intervention controlled trial (PDF)

Neonatal hypothermia and associated factors among neonates admitted to neonatal intensive care unit of public hospitals in Addis Ababa, Ethiopia (PDF)

The impact of Docosahexaenoic Acid supplementation during pregnancy and lactation on Neurodevelopment of the offspring in India (DHANI): trial protocol (PDF)

A post-mortem population survey on foetal-infantile end-of-life decisions: a research protocol (PDF)

The cut-off levels of procalcitonin and C-reactive protein and the kinetics of mean platelet volume in preterm neonates with sepsis (PDF)

Twin-to-twin transfusion syndrome neurodevelopmental follow-up study (neurodevelopmental outcomes for children whose twin-to-twin transfusion syndrome was treated with placental laser photocagulation) (PDF)

LyTONEPAL: long term outcome of neonatal hypoxic encephalopathy in the era of neuroprotective treatment with hypothermia: a French population-based cohort (PDF)

**Pediatric Critical Care Medicine**

Involvement of parents in the care of preterm infants: a pilot study evaluating a family-centered care intervention in a Chinese neonatal ICU

Neurologic outcomes after extracorporeal membrane oxygenation: a systematic review

Settling the score in pulmonary hypertension?

**New England Journal of Medicine**

Sequencing of circulating cell-free DNA during pregnancy

Labor induction versus expectant management in low-risk nulliparous women

Esophageal atresia and tracheoesophageal fistula

Epilepsy profile in infants with congenital zika virus infection

**Lancet**

Autism spectrum disorder

**JAMA**

Perinatal marijuana use and the developing child
https://www.ncbi.nlm.nih.gov/pubmed/30014136
Effect of cell-free DNA screening vs direct invasive diagnosis on miscarriage rates in women with pregnancies at high risk of trisomy 21a randomized clinical trial
Noninvasive prenatal genetic screening using cell-free DNA
Stigmatizing language about neonatal abstinence syndrome
Stigmatizing language about neonatal abstinence syndrome
Stigmatizing language about neonatal abstinence syndrome
Stigmatizing language about neonatal abstinence syndrome

**BMJ**
Trial of Viagra for fetal growth restriction is halted after baby deaths.

**Pediatric Infectious Disease Journal**
Update on neonatal herpes simplex epidemiology in the Netherlands: a health problem of increasing concern?
Effect of rotavirus vaccination on acute diarrheal hospitalizations among low and very low birth weight US infants, 2001–2015

**Pediatric Cardiology**
Developmental origin of the cardiac conduction system: insight from lineage tracing (PDF)
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6096846/pdf/246_2018_Article_1906.pdf
Fetal and postnatal echocardiographic diagnosis of Ebstein anomaly of the mitral valve
Characterization of the placenta in the newborn with congenital heart disease: distinctions based on type of cardiac malformation (PDF)
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6096845/pdf/246_2018_Article_1876.pdf
Impact of fetal somatic growth on pulmonary valve annulus z-scores during gestation and through birth in patients with tetralogy of Fallot
Mechanisms of trabecular formation and specification during cardiogenesis
The genetic landscape of hypoplastic left heart syndrome

**Pediatric Neurology**
Xenon combined with hypothermia in perinatal hypoxic-ischemic encephalopathy: a noble gas, a noble mission
Outcomes after acute symptomatic seizures in children admitted to a neonatal neurocritical care service
**Obstetrics and Gynecology**
Association between attempted external cephalic version and perinatal morbidity and mortality  

Institutional protocols for vaginal preparation with antiseptic solution and surgical site infection rate in women undergoing cesarean delivery during labor  

Zika virus infection among pregnant women and their neonates in New York City, January 2016–June 2017  

ACOG Committee Opinion No. 745 Summary: Mode of term singleton breech delivery  

**American Journal of Obstetrics & Gynecology**
The vaginal eukaryotic DNA virome and preterm birth  

Neonatal and fetal growth charts to identify preterm infants <30 weeks gestation at risk of adverse outcomes  

Modulation of nuclear factor-κB signaling and reduction of neural tube defects by quercetin-3-glucoside in embryos of diabetic mice  

Noninvasive estimation of fetal lung maturity with magnetic resonance spectroscopy  

**Seminars in Pediatric Surgery**
Preface: The NEC Society  

Necrotizing enterocolitis: pathophysiology from a historical context  

Enhancing NICU parent engagement and empowerment  

Changing the paradigm of defining, detecting, and diagnosing NEC: perspectives on Bell's stages and biomarkers for NEC  

The science and necessity of using animal models in the study of necrotizing enterocolitis  

Development of the necrotizing enterocolitis society registry and biorepository  

Human milk and necrotizing enterocolitis  
https://www.ncbi.nlm.nih.gov/pubmed/29275815

Probiotics and necrotizing enterocolitis  

Anemia, red blood cell transfusions, and necrotizing enterocolitis  

Neurodevelopmental considerations in surgical necrotizing enterocolitis  

Stem cell therapy in necrotizing enterocolitis: current state and future directions  
BASIC SCIENCE SELECTIONS
Effects of hypoxia-ischemia and inotropes on expression of cardiac adrenoceptors in the preterm fetal sheep

Effects of lactoferrin on neonatal pathogens and bifidobacterium breve in human breast milk

Plasma proteomics reveals gestational age-specific responses to mechanical ventilation and identifies the mechanistic pathways that initiate preterm lung injury

Early airway microbial metagenomic and metabolomic signatures are associated with development of severe bronchopulmonary dysplasia

Effects of leptin on neurocognitive and motor functions in juvenile rats in a preterm brain damage model

ADDITIONAL JOURNAL SELECTIONS
Volume-targeted ventilation: one size does not fit all. Evidence-based recommendations for successful use
Keszler M. *Arch Dis Child Fetal Neonatal Ed*.

Energy and fat intake for preterm infants fed donor milk is significantly impacted by enteral feeding method

Correlation of neonatal abstinence syndrome with risk of birth defects and infant morbidity

Carbohydrate supplementation of human milk to promote growth in preterm infants

Oxidative stress and bronchopulmonary dysplasia
Wang J & Dong W. *Gene*.

Ancestry and genetic associations with bronchopulmonary dysplasia in preterm infants
Xenon as an adjuvant to therapeutic hypothermia in near-term and term newborns with hypoxic-ischaemic encephalopathy
Rüegger CM, Davis PG, & Cheong JL. Cochrane Database Syst Rev.

The optimization of home oxygen weaning in premature infants trial: design, rationale, methods, and lessons learned

Visual function and fundus morphology in relation to growth and cardiovascular status in 10-year-old moderate-to-late preterm children

Mesenchymal stem cells for severe intraventricular hemorrhage in preterm infants: phase i dose-escalation clinical trial

Continuous glucose monitoring (CGM) in very low birth weight newborns needing parenteral nutrition: validation and glycemic percentiles