

Abstract #: A-1 Presented by: Ileana Arbona-Ramirez, MD, Staff

Fetal/placental Immune Regulation: Analysis of FOXP3+ Regulatory T cells in Human Gestation

Ileana Arbona-Ramirez, M.D., Rene Ruiz, M.D, Morna J. Dorsey, M.D., M.M.Sc.; Department of Pediatrics, Division of Neonatology, College of Medicine, University of South Florida

Keywords: Tregs, cord blood infants

Objective: In this study the infant's cord blood Treg level will be quantified using Treg extracellular markers (CD4+,CD25+) and intracellular transcription factor fork head box protein 3 (FOXP3+). Also, the Tregs can be further characterized into naturally occurring (naïve cells) characterized by CD45RA marker, memory cells that presents after antigenic exposure and are characterized by CD45RO marker and Tregs of thymic origin characterized by the CD31 marker. It has been noted that the phenotypic characteristics in Tregs may differ between adults and infants, so we will characterize the phenotypic markers seen in the infant's cord blood Tregs. After quantification of the Tregs in infant's cord blood we will observe the relationship between the gestational age and the level of the Tregs and correlate with demographic and clinical data.

Methods: Umbilical cord blood is obtained from placentas from 24 to 42 weeks gestational age at the time of delivery. Infant's with hx of maternal chronic steroid use or maternal HIV were excluded. Then, mononuclear cells are isolated by PBMC-Ficoll separation and Treg markers are identified by fluorescent staining and quantified by flow cytometry. Maternal medical and obstetric history was obtained to correlate with results.

Results: Preliminary data from 17 infants between 35 and 41 weeks gestational age show that Treg cells comprise $5.8\% \pm 0.2$ (m \pm SD) of the umbilical cord blood T cell populations. A significant ($p=0.013$) negative correlation between Treg % and GA. There is a significant decline in Treg / Total T cells with advancing gestation.

Conclusion: Expected outcome: We expect to find a Treg is a discrete population in cord blood that will decrease with advance in gestational age.

Abstract #: A-2 Presented by: Morna Dorsey, MD, Faculty

Elevated IL-8 Levels in Allergic Airways Inflammation is Downregulated Following Aerosolized Brevetoxin Exposure

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Keywords: Asthma, allergy, inflammation, cytokines, red tide **Objective:** We examined cytokine production in patients with pre existing allergic airways inflammation following exposure to aerosolized brevetoxin.

Methods: Using an established method of collection with filter paper cytokines in nasal secretion were examined using cytokine bead array analysis on samples from allergic asthmatic subjects ($n= 57$) and healthy controls ($n= 31$) to establish baseline differences. Samples were collected from allergic asthmatic subjects ($n= 26$) and healthy controls ($n= 13$) before and after one hour of exposure to brevetoxin during a Florida red tide bloom. Ex vivo studies were performed on PBMCs cultured in purified brevetoxin.

Results: Baseline increased IL-8 levels were observed in allergic asthmatic subjects compared to healthy controls ($p= 0.004$). Brevetoxin exposure in allergic asthmatic subjects resulted in decrease in IL-8 ($p = 0.018$), while a trend toward significant decrease was seen in healthy controls. PBMCs in combined LPS and Pbt culture showed significant decreases in IL-8, IL-6, and IL-10 production when compared to LPS culture alone.

Conclusion: Cytokine production within the airway epithelium following brevetoxin exposure does not appear to involve early inflammatory cell recruitment pathways. Pre existing Th2 immune deviation results in more pronounced absence of typical Th1 pro inflammatory response during acute phase of inflammation. Brevetoxin demonstrates anti-inflammatory effects on immune cells. Respiratory symptoms during brevetoxin exposure are not due to increased inflammation.

Research supported by: NOAA OHHI NA05NOS4781248

Abstract #: A-8 **Presented by:** Doris Wiener, MS, Faculty

Effects of Carotenoids on Differential Expression of Scavenger Receptors and Cytokines in Human Monocyte-Derived Macrophage Subpopulations Doris Wiener, Xiaoming Gong, Raju Marisiddaiah, Lewis Rubin, Dept. Pediatrics, College of Medicine, University of South Florida

Keywords: Carotenoid, macrophage, cytokine, scavenger receptor

Objective: Circulating monocytes differentiate into macrophage (M Φ) subpopulations in response to environmental signals. Certain carotenoids, biologically active dietary components, may reduce M Φ oxidant stress, alter the inflammatory response, and lower risk of atherosclerosis in vivo. These observations prompted us to determine the effects of carotene (β -carotene, lycopene) and xanthophyll (astaxanthin, lutein) carotenoid classes on differentiation of cultured normal human monocytes into M Φ s (M1 and M2) phenotypes.

Methods: Monocyte-to-M Φ differentiation was driven by treatment for 6 days with GM-CSF or M-CSF \pm individual carotenoids. M1 M Φ s (+GM-CSF) were activated with LPS + IFN γ ; M2 M Φ s (+M-CSF) were activated with IL-4.

Results: We validated that M1 and M2 cells showed distinct morphologies and expression patterns (qRT-PCR) of scavenger receptors (SR-A, LDLR, CD36, SR-B1) and cytokines (IL-10, IL-12). M1 and M2 markers (CD80, CD163, CD36, CD14 and CD16) and cytokines (PGE2, IL-8, IL-6, IL-10, IL-12, TNF α , IFN γ) were confirmed by flow cytometry. Expression of CD14, CD16, CD163, CD36, and IL-10 was higher in M2 than M1 M Φ s. Lycopene and astaxanthin decreased SRA, CD36 and LDLR mRNA levels in M1 cells but had no significant effect on M2 cells. Lutein also reduced SRA, CD36 and IL-10 expression in M2. Conversely, β -carotene increased M1 and decreased M2 expression of SRA, CD36, IL-10 and IL-12.

Conclusion: In sum, these results show individual carotenoids can regulate M Φ scavenger receptor and cytokine expression. We speculate that dietary components (carotenoids) influence M Φ polarization, thereby altering tissue inflammation and, via scavenger receptors, inhibiting cholesterol accumulation in M Φ -derived atherogenic foam cells.

Research supported by: Pamela and Leslie Muma Endowment

Abstract #: A-10 **Presented by:** Xiaoming Gong, PhD, Faculty

Differential Expression of Carotenoid Metabolism Related Genes in Human Lung Epithelial Cells Xiaoming Gong, Raju Marisiddaiah, Doris Wiener, Lewis P. Rubin Department of Pediatrics, College of Medicine, University of South Florida

Keywords: Carotenoid, metabolism, gene expression, lung epithelial cell

Objective: Epidemiologic studies have shown that dietary β -carotene (BC) and total carotenoids are inversely associated with non-small cell lung cancer (NSCLC) risk. However, in clinical trials, high-dose BC supplementation for chronic smokers has been linked to increased lung cancer risk. Little is known about the carotenoid metabolomic alterations that characterize neoplastic progression.

Methods: Using two human pulmonary cell lines, we determined the expression of genes regulating carotenoid metabolism in normal bronchial epithelial BEAS-2B and lung adenocarcinoma A549 cells. We assayed gene pathways including ALDH1A2, ALDH8A1, CMO1, CMO2, Cyp26A1, Cyp26B1, Cyp26C1, LRAT, RHD5, RHD8, RDH11 ~ 14, RHD16 and SDR16C5 by qRT-PCR.

Results: Carotenoid metabolism-related genes are differentially expressed in BEAS-2B and A549 cells. BEAS-2B cells express high levels of CMO2 and LRAT but not CMO1, Cyp26A1 or Cyp26B1, indicating an active lycopene metabolic apparatus. In contrast, A549 cells highly express CMO1, ALDH1A2, Cyp26A1 and Cyp26B1. In A549 cells, we could detect only low levels of CMO2 and no LRAT expression, implying presence of active BC metabolism. We tested this hypothesis by treating BEAS-2B and A549 cells with lycopene. CMO2 and LRAT expression were increased but there were no effects on CMO1 expression. Finally, immunostaining of NSCLC tissues shows profuse CMO1 staining in the tumors but little in adjacent normal lung.

Conclusion: These findings suggest that specific beneficial effects of carotenoids on lung health may be linked to CMO2-dependence in tissue. A shift to decreased expression of CMO2 and LRAT and increased CMO1 and Cyp26 family genes can alter carotene metabolism and may contribute to lung carcinogenesis.

Research supported by: NIH HD42174, Muma Family Endowment

Abstract #: A-20 **Presented by:** Pilar Brinez, MD, Staff

Folate Protection of Fetal Alcohol Syndrome Related Cardiac Defects by Modulation of Wnt/ β -Catenin Signaling P. Brinez, M.D., M. Serrano, M.D., M. Han, M.D. and K. K. Linask, M.A., Ph.D. USF and All Children's Hospital Children's Research Institute, Department of Pediatrics, 140-7th Avenue South, CRI #2007, St. Petersburg, FL 33702 University of South Florida

Keywords: Folate, Wnt- β -catenin signaling, Fetal Alcohol Syndrome, gene expression, myo-inositol.

Objective: Alcohol (ethanol) consumption during pregnancy is linked to congenital heart defects associated with Fetal Alcohol Syndrome (FAS). Because reports have linked ethanol (EtOH) exposure with Wnt/ β -catenin signaling, we defined whether a similar relationship exists between EtOH and Wnt- β -catenin signaling.

Methods: Exposure of stage 4 chick and quail embryos to 30% EtOH suppressed Wnt/ β -catenin modulated gene expression of Hex (a marker of the primary heart field) and of Islet-1 (a marker for the second heart field) within the cardiogenic crescent. Exposure of pregnant mice similarly during gastrulation to an accepted binge-drinking dose of EtOH on ED 6.75 induced atrioventricular and semilunar valve defects, as determined noninvasively by echocardiography on ED15.5.

Results: We had shown previously that folic acid (FA) supplementation acts by overriding Wnt/ β -catenin inhibition of the induction of cardiac gene expression in the heart fields. Thus, FA, known to protect against neural tube defects, was tested for protective effects against ethanol potentiation of Wnt/ β -catenin signaling during cardiac specification. Culture medium supplementation with FA, with and without myo-inositol, resulted in normal expression of the cardiac markers upon 30% EtOH exposure in the avian model. In the mouse, FA supplementation (10.5 mg/kg) of diet on morning of vaginal plug date or FA in combination with myo-Inositol, resulted in normal valve development (100%) after EtOH exposure on ED6.75, as assessed by echocardiography on ED 15.5.

Conclusion: In conclusion, FA supplementation at a high dose, or in combination with myo-inositol, prevents alcohol potentiation of Wnt/ β -catenin signaling allowing normal gene activation and cardiogenesis

Abstract #: A-34 **Presented by:** Luis Munoz, MD, Staff

Intravenous Ibuprofen Treatment for Patent Ductus Arteriosus in Preterm Infants Does Not Affect Cerebral Blood Flow Velocity Luis Munoz, MD Jane Carver, PhD, Dawn Bruton, RN Stacey Stone, MD, Roberto Sosa, MD and Rajan Wadhawan, MD All Children's Hospital & University of South Florida

Keywords: Ibuprofen and CBF

Objective: Patent ductus arteriosus (PDA) is a common clinical problem in very low birth weight (VLBW) infants. PDA is often treated with medications such as indomethacin or ibuprofen. The effects of indomethacin on systemic circulatory beds have been widely studied, while effects of ibuprofen are largely unknown in this regard. Clinical trials have shown that indomethacin administered within 24 hours of birth is effective in intra-ventricular hemorrhage (IVH) prophylaxis in preterm infants. Ibuprofen, however, does not have this beneficial effect. We propose that the reason ibuprofen may not provide IVH prophylaxis is lack of an effect of the drug on the cerebral vasculature in preterm infants.

Methods: Ongoing prospective study of VLBW infants (<1500g bw) at a level III NICU at All Children's Hospital. Infants are enrolled when they are diagnosed by an echocardiogram as having a PDA needing medical therapy. Doppler ultrasound is used to measure middle cerebral artery blood flow velocity (MCABFV) and ductal size. The measurements are made before and 30 minutes after the administration of the first dose of ibuprofen, and are repeated at the same time intervals with the third dose of ibuprofen.

Results: Preliminary data are available for 15 patients. Mean gestation and birth weight are 25.5 + 1.5 wks and 852 + 258 g, respectively. Interim data analyses indicate that ibuprofen has no effect on MCABFV. For dose 1, the mean pre and post-dose MCA peak systolic velocity was 38.7 +11 and 40.6 +10 cm/sec, respectively (p=0.40). For dose 3, the mean pre and post-dose MCA peak systolic velocity was 39.5 +14 and 40.1 +13 cm/s, respectively (p=0.81).

Conclusion: Preliminary results support the hypothesis that there is no reduction of MCABFV after ibuprofen administration.

Abstract #: A-39 **Presented by:** Heather Agazzi, PhD, Faculty

Racial/Ethnic Disparities in the Identification of Developmental Disabilities and Insurance Status Heather Agazzi, PhD. Pediatrics, COM, USF, Mulubrhan Mogos, MSC, Nurse Research Resident, CON, USF; Jillian Williams, PhD, Clinical Instructor, Child Development, Pediatrics, COM, USF

Keywords: health disparities, developmental disabilities, Autism, Latinos/Hispanics (L/H) **Objective:** We sought to examine racial and ethnic disparities in the recognition of developmental disabilities or delays,

including Autism Spectrum Disorders (ASD) and health insurance status.

Methods: Data were obtained from a population (N = 668) of clinic-referred caregivers of children (0-6 years) with challenging behavior who participated in a group delivered parent training program. By utilizing crude and adjusted odds ratios, we estimated the association between race/ethnicity and caregiver-reported diagnosis status and insurance status of the child, adjusting for caregiver age, educational level, and insurance status (only for the diagnosis analyses). It was hypothesized that the exposure L/H would be a risk factor for not having a diagnosis and for not having health insurance.

Results: Sixty percent of children had a diagnosis, 14.5% had an ASD; and 93% had health insurance (private or Medicaid). In crude analyses, children who were L/H (OR=1.10; 95% confidence interval [CI] = 0.80, 1.52), were more likely than non-L/H children to have a diagnosis. For insurance status, L/H children (OR=0.80; CI = 0.55, 1.14) were less likely than non-L/H children to have health insurance. Similar non-significant results were obtained for adjusted analyses.

Conclusion: Early intervention is often contingent upon a documented delay or diagnosis and is critical to improved long-term outcomes for children with developmental disabilities and ASD and the literature is mixed as to whether there are disparities in diagnosis by race/ethnicity. This information is useful for continuing education for clinicians and pre- service training of medical residents, and psychology and nursing students.

Research supported by: The Children's Board of Hillsborough County

Abstract #: A-44 **Presented by:** Raquel G Hernandez, MD, MPH¹, Faculty

Title: *Parents' Healthy Weight Perceptions and Preferences For Obesity Counseling in*

Preschoolers: Pediatricians Matter Raquel G Hernandez, MD, MPH^{1,2}, Tina L Cheng, MD, MPH^{1,3} and Janet R Serwint, MD^{1,3}. ¹Pediatrics, Johns Hopkins University School of Medicine, Baltimore, MD, United States; ²Pediatrics, University of South Florida College of Medicine, Tampa, FL, United States and ³Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD.

Keywords: Obesity, Preschoolers, Perceptions, Visual Sketches **Objective:** To compare parental report of child body image to perceived healthy weight body image in preschoolers and describe weight-counseling preferences.

Methods: Parents of preschoolers receiving well-child care in an urban pediatric clinic were interviewed and asked to select body images that best resembled: 1) their own child's current weight, 2) a healthy weight preschooler and 3) friend and family report of a healthy weight preschooler. Those indicating that their overweight (age-gender specific BMI $\geq 85^{\text{th}} \leq 94^{\text{th}}$ percentile) or obese (BMI $\geq 95^{\text{th}}$ percentile) child resembled a healthy weight image were considered to misclassify their child's weight. Logistic regression was used to identify predictors of misclassification. Card-sorting exercises explored preferences for weight counseling.

Results: Of the 150 children in our sample, 32.7% (n=49) were overweight or obese. Misclassification occurred in 71.4% (n=35) of parents in this subgroup with some indicating a desire for a heavier child by sketch report. Absence of pediatrician comment on child weight strongly predicted misclassification (OR: 12.3, 95% CI 1.74-87.2). Pediatricians ranked as the most valued weight advisor.

Conclusion: Pediatricians' guidance is highly valued and strongly associated with parental accuracy in classifying child weight. Informing providers that their advice matters may promote more effective clinical discussions surrounding early childhood obesity.

Research supported by: The Thomas Wilson Sanitarium for Children of Baltimore City

Abstract #: A-46 **Presented by:** Jessica Morgan, BA, Staff

A Comprehensive Analysis of Skin-picking in Prader-Willi Syndrome Jessica R. Morgan, B.A. (USF Pediatrics), Eric A. Storch, Ph.D.(USF Pediatrics), Douglas W. Woods, Ph.D. (University of Wisconsin- Milwaukee), Danielle Bodzin, B.S.(USF Pediatrics), and Tanya K. Murphy, M.D.(USF Pediatrics) University of South Florida

Keywords: skin-picking, Prader-Willi Syndrome, children

Objective: The purpose of this study was to gain a comprehensive understanding of skin picking in youth with PWS. Prevalence, frequency, and the nature of skin picking in youth with PWS are addressed (e.g., areas from which children are picking, hours spent picking, antecedents, etc), as well as behavioral correlates of skin-picking.

Methods: Parents of 67 youth (aged 5-19 years) with PWS were recruited to complete an internet-based survey that included measures of: skin-picking behaviors; the automatic and/or focused nature of skin-picking; severity of skin-picking symptoms; anxiety symptomology; developmental functioning; symptoms of inattention, impulsivity, and oppositionality; and quality of life.

Results: Results indicated that skin-picking was endorsed in 95.5% of youth with PWS. Direct

associations of moderate strength were found between skin-picking severity and symptoms of anxiety; impulsivity, inattention, and oppositionality; developmental functioning; and quality of life. Other descriptive data, such as areas picked, cutaneous factors, antecedents, and consequences related to skin-picking are reported.

Conclusion: The prevalence and consequences associated with skin-picking in PWS indicate a greater need for clinician awareness of the behavior and interventions tailored to meet the needs of this population.

Abstract #: A-50 Presented by: Jeannette Reid, MS, Staff

Clinical Correlates and Treatment Response of the Yale-Brown Obsessive Compulsive Scale Auxiliary Items Jeannette M. Reid (Department of Pediatrics, USF), Eric A. Storch (Departments of Pediatrics and Psychiatry, USF), & Tanya K. Murphy (Departments of Pediatrics and Psychiatry, USF)

Keywords: obsessive compulsive disorder; Yale-Brown Obsessive Compulsive Scale; clinical correlates; treatment response; auxiliary features

Objective: The current study examined clinical correlates and treatment response as they relate to auxiliary clinical characteristics (i.e., insight; avoidance; indecisiveness; sense of responsibility; pervasive slowness; pathological doubt; duration of obsession-free and compulsion-free intervals) in 172 adults with OCD.

Methods: A trained evaluator administered the Yale-Brown Obsessive Compulsive Scale and the Anxiety Disorders Interview Schedule for DSM-IV. As well, patients completed the Obsessive Compulsive Inventory-Revised; Beck Depression Inventory-Second Edition; State-Trait Anxiety Inventory; RAND 36-Item Health Survey; and Sheehan Disability Scale.

Results: Results indicated numerous associations between auxiliary OCD features and both depressive and anxious symptoms as well as impaired health and functioning. All auxiliary features, excluding insight, were reduced following cognitive-behavioral therapy. In particular, changes in symptom-free intervals; avoidance; and indecisiveness were most reliably associated with reductions in core OCD features. The lack of a relationship with insight did not come as a surprise, as insight is considered a relatively stable construct in those with OCD.

Conclusion: The present study marks the first known investigation into the clinical import of Y-BOCS auxiliary items in the presentation and treatment of OCD. The above findings offer practical implications regarding the assessment and treatment of patients with OCD.

Abstract #: B-30 Presented by: Raju Marisiddaiah, PhD, Postdoc

Intracellular Accumulation and Metabolism of Lycopene in Human Prostate Cancer Cells Expressing Carotene 9', 10'-monooxygenase (CMO2) Raju Marisiddaiah, Xiaoming Gong, Doris Wiener, Lewis P. Rubin. Department of Pediatrics, College of Medicine, USF

Keywords: Carotene 9', 10'-Monooxygenase 2, High Performance Liquid Chromatography, Lycopene, Metabolism, Prostate Cancer,

Objective: Lycopene has been reported to have protective and therapeutic effects in prostate cancer, but it is unclear if these effects are due to the parent carotenoid or to lycopene metabolites. Carotene 9', 10'-monooxygenase (CMO2) is a putative lycopene cleavage enzyme, possibly producing cell type-specific lycopene metabolites. The range and specificity of CMO2-mediated physiological functions is under active investigation. CMO2 expression is higher in normal prostate tissues than in prostate cancers.

Methods: We (1) determined CMO2 protein and mRNA expression in androgen-sensitive (C4-2) and androgen-resistant (DU-145) human prostate cancer cells and (2) analyzed the accumulation of lycopene and its possible metabolites by HPLC.

Results: After 24h incubation with 1 and 3 μ M lycopene, C4-2 and DU-145 cells accumulated 54 and 87 pmol and 45 and 132 pmol lycopene per million cells, respectively. By 48h, lycopene accumulation was reduced in C4-2 cells and increased in DU-145 cells. These findings are inversely related to CMO2 expression in these cell lines and, therefore, may indicate presence of CMO2-dependent lycopene metabolism. After 72h of lycopene incubation, several lycopene isomers and polar (lycopenoid?) compounds were identified in C4-2 cells.

Conclusion: Our data suggest that lycopene uptake, metabolism and accumulation by prostate cancer cells may depend on androgen status and CMO2 expression. We speculate that CMO2 may, in part, suppress prostate cancer growth by generating biologically active lycopene metabolites. Further studies are required to characterize unambiguous lycopenoids and their functions.

Research supported by: NIH HD42174, Muma Family Endowment

Abstract #: B-49 **Presented by:** Woei Yeang Eng, MD, Resident

A Novel Mutation CHS1 (LYST) Mutation: Osteomyelitis in a Child with Chediak-Higashi

Syndromes W. Y. Eng¹, M. J. Dorsey¹, J. W. Sleasman¹, A. Petrovic¹, W. Westbrook², ¹University of South Florida/All Children's Hospital, St. Petersburg, FL, ²National Institute of Health, Bethesda, MD. Department of Pediatrics, College of Medicine, University of South Florida

Keywords: Novel Mutation CHS1 Chediak-Higashi Syndrome

Objective: Chediak-Higashi syndrome (CHS) is rare, autosomal recessive immunodeficiency disorder characterized by hypopigmentation, neutropenia and risk for hemophagocytic lymphohistiocytosis (HLH). We report a novel mutation in a child with CHS.

Methods: NK cell and cytotoxic lymphocyte functions, expressions of perforin and granzyme B on CD8, NK and NKT cells, and IL-2R expression as well as complete genetic sequencing of CHS1 were performed.

Results: Our patient with oculocutaneous albinism presented with osteomyelitis at the left lumbosacral junction, and MRSA was positive from blood culture. Peripheral blood smear showed absolute neutropenia with giant abnormal cytoplasmic granules in granulocytes, monocytes and lymphocytes. WBC was 6,780/uL with ANC of 678/uL. Absent NK cell and decreased cytotoxic lymphocyte function at 24% (Ref. >35%) were noted. IL-2R expression was elevated at 8288 units/mL (Ref. <2126). Genetic mutation analysis of all 55 coding exons of the CHS1 gene showed a homozygous mutation in exon 49. It is an insertion of an A which causes the introduction of an early stop codon: c.10883-10884insA, p. Tyr3628X. A novel heterozygous insertion in exon 49 of CHS: c.10883-10884insA, p. Tyr3628X was also found in patient's mother. Patient later developed HLH from Epstein-Barr virus infection successfully treated with rituximab and alemtuzumab followed by hematopoietic stem cell transplant (HSCT).

Conclusion: We report a novel homozygous mutation in CHS1 that results in absent NK cell and decreased cytotoxic lymphocyte functions leading to lethal infections and HLH. Early diagnosis and HSCT improved overall survival.

Research supported by: Self-funded.

Abstract #: B-52 **Presented by:** Margarita Hernandez, MD, Resident ***Auditory Brainstem***

Responses in Preterm Infants Margarita Hernandez USF Health Neonatology Dept. Janet Sullivan Neonatology Department, College of Medicine, University of South Florida **Keywords:** Auditory Brainstem Responses Neonate

Objective: The primary objective is to establish means and standard deviations for auditory brainstem conduction time from 34 to 35 weeks PCA and to determine the impact of gestational age (GA), PCA, gender and multiple gestation on this measure of myelination.

Methods: ABRs are performed at 34 and 35 weeks PCA. Subjects are screened for middle ear dysfunction, and wave I latency is measured as an additional index of peripheral hearing status. Informed consent is obtained from the subjects' legal guardians. Measures: 1) Mean level of OAEs at 7 frequencies; 2) Wave I (8th nerve latency) and 3) I-V interpeak latency (ABCT). Subjects: Preterm infants (28 – 34 wks GA) in TGH NICU. Groups: Subjects are divided by GA and PCA, gender and type of gestation (singleton vs. twin). Inclusion criteria: Viable preterm infants (28 to 34 weeks gestation) from Tampa General Hospital's NICU. Exclusion criteria: Major malformations, problems with skin integrity, inconsistency in gestational age estimates, significant brain hemorrhage, indirect hyperbilirubinemia requiring exchange transfusion, chronic lung disease, necrotizing enterocolitis and failed OAE screen in both ears.

Results: Data were analyzed for 16 infants. 1) Gestational age had a significant effect on ABCT at 34 wks ($p < .003$) but not at 35 wks PCA; 2) As expected PCA had a significant effect on ABCT ($p < .001$); 3) ABCTs were longer in males than females at 34 wks but the difference did not reach significance ($p < 0.07$). There were too few males at 35 wks PCA to compare means; 4) Multiple gestation could not be analyzed due to small sample size

Conclusion: Gestational age and gender may temporarily affect ABCT in preterm infants. GA differences may disappear as term is approached

Research supported by: USF Health Neonatology Department

Abstract # : B-67 **Presented by:** Latha Kumaraswamy, MD, Resident

Longitudinal Comparison of Infant Body Composition in Small- (SGA) and Appropriate-for-Gestational Age (AGA) Infants Using Air Displacement Plethysmography (ADP) Latha

Kumaraswamy, M.D, Jane Carver, PhD, MS, MPH, ¹Pediatrics, Nicole Nations, Judy Zaritt, Lewis P.

Rubin, MD, Univ. of South Florida, Tampa, FL

Keywords: Infant body composition body fat Newborn Obesity **Objective:** To use ADP instrumentation for longitudinal assessment of infant body composition and for assessment of the relationship between body composition and anthropometric measurements in infants between 1 and 8 kg.

Methods: SGA infants were matched to AGA infants of a similar gestational age. Infants with significant anomalies were excluded. Body composition and anthropometric variables were measured at hospital discharge and monthly thereafter until subjects reached a body weight of 8 kg.

Results: Demographic data were similar between groups. Preliminary findings show increasing % fat mass and decreasing % fat free mass over time. % fat mass is significantly lower and % fat free mass is significantly higher in SGA infants at the first measurement. Several anthropometric measurements remain lower in SGA infants at the second measurement. However, there were no significant differences found on subsequent measurements.

Conclusion: SGA infants of different gestational appear to catch up to their AGA counterparts in adiposity & anthropometric measurements within 8-10 weeks after birth. On-going studies assess the relationship between body composition and clinical/demographic variables.

Research supported by: Muma Family Endowment, Univ of South Florida

Abstract # B-75 Presenter: Jillian Williams, PhD Postdoc *Outcomes of a Group Behavioral Parent Training Program for Families of Children with Autism Spectrum*

Disorders Jillian Williams, Heather Agazzi, Kathleen Armstrong, Dept. of Pediatrics, College of Medicine, USF **Keywords:** Autism spectrum disorder (ASD), parent training, behavior, development **Objectives:** To investigate the attendance rates, knowledge gains, and consumer satisfaction of caregivers of young children with a diagnosis of ASD who participated in a group-delivered, behaviorally-based parent training program

Methods: Descriptive and analytic methods were used with a population of caregivers of children with challenging behaviors who participated in the HOT DOCS program between 8/06-10/09 and provided information about their child's diagnoses (n=723). The sample was restricted to those participants who indicated their child was diagnosed with ASD at the time of participation (n=124). It was hypothesized that caregivers of children with ASD would demonstrate significant increases in knowledge.

Results: A dependent means t-test showed significant increases in participant knowledge from pre- to posttest, $t(1, 70) = .836, p < .001$. The majority of participants (~99%) reported high levels of satisfaction with various aspects of HOT DOCS.

Conclusion: Access to early intervention has been shown to improve academic, behavioral, and social outcomes for children with ASD (Guralnick, 1997). Most research is on child-focused interventions, limited research is available on parent-focused programs (Boulware et al., 2006). Findings from this research are important in expanding the services available to families with young children with ASD diagnoses. HOT DOCS appears to be a promising early intervention program for families of children with ASD, while maximizing available resources (group format). Future directions include comparing participation and outcomes for families of children with ASD to families of children with no preexisting diagnoses and/or with various other diagnoses who participate in HOT DOCS.

Research Supported by: Children's Board of Hillsborough County

Abstract #: B-81 Presented by: Jason Hangauer, Graduate Student

The Relationship Between Treatment Adherence and Child Behavioral Outcomes in a Parent Training Program

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Keywords: Parent training, treatment adherence, challenging behavior **Objective:** To determine the rate of adherence (i.e., attending & implementation of skills) to a parent training program and whether adherence is related to child behavioral outcomes.

Methods: Parents/caregivers (N=913) of children (M = 42 months) attended a group-administered parent training program. Data were analyzed to determine if participants who adhered to treatment reported greater reductions in challenging behavior. Adherence was operationalized as attendance & rate of weekly implementation of skills. Child outcomes were measured via parent report of behavioral symptoms(externalizing/internalizing). Descriptive analyses of adherence and correlational analyses examining the relationships between adherence and child outcomes were conducted.

Results: Mean attendance at parent-training sessions was 4.3 (SD = 1.7) out of 6. Mean number of days participants reported implementing skills was 16 (SD = 12) out of 35. When 80% is used as a standard of treatment adherence, only 26.4% of participants met criterion. Relationship between adherence variables (attendance & implementation of skills) and child change from pre to post in child outcome variables (internalizing & externalizing T-score change) was investigated. Correlations were small in size and insignificant at .01 alpha.

Conclusion: Treatment adherence is important to establish a functional relationship between a treatment and outcomes (Gresham, 2004). Treatment adherence for a majority of participants was below the 80% criterion used as a standard, but consistent with previous research (e.g., Pettinati et al., 2003). Plausible explanations (e.g., self-report of skill implementation) for the insignificant relationship between these variables will be discussed.

Research supported by: Children's Board of Hillsborough County

Abstract #: B-89 Presented by: Brittany Hasty, BS, Undergraduate

Comparative Immune Factors and Effects of Preterm versus Term Colostrum

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Keywords: Colostrum, sIgA, cytokines, lymphocyte proliferation

Objective: The first objective was to compare key immunological factors in preterm and term colostrum. These factors included a panel of cytokines, chemokines, secretory IgA, and the effects of preterm and term colostrums on lymphocyte proliferation of PBMCs collected from healthy volunteers. A second objective was to investigate changes over time in these key immunological factors in preterm milk.

Methods: Preterm and term colostrum samples were collected on day 1 postpartum and filtered. Cytokines were measured in these samples by a 26-plex Millipore kits on the Luminex 200. sIgA was analyzed through an ELISA technique (ALPCO). PBMCs were collected and then separated by density gradient centrifugation. Lymphocyte proliferation was carried out using a standard tritiated thymidine uptake assay.

Results: Significant differences were found between preterm and term colostrums for G-CSF, IL- α , IL-8, and IP-10. Preterm colostrum sIgA was significantly higher than term colostrum sIgA at day 1 postpartum. Preterm milk sIgA was highest at day 1 and declined over time through 8 days post birth. Several cytokines were correlated with sIgA in preterm milk. The lymphocyte proliferation assay stimulation index (S.I.) was significantly higher in the preterm colostrums samples compared to term colostrums. The S.I. decreased over time in the preterm milk samples through 8 days post birth.

Conclusion: Preterm and term colostrum are uniquely suited to the immune status of infants. Preterm infants are born immunodeficient and human milk provides them with immune boosting factors such as cytokines and secretory immunoglobulins that are both protective and immune enhancing.

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Abstract #: B-98 Presented by: Janet Hess, MPH, Graduate Student

Type of Provider as a Predictive Factor in Planning for Health Care Transition

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Keywords: Children and youth with special health care needs, disabilities, adolescent medicine, health care transition

Objective: To assess type of provider as a predictive factor in planning for transition from pediatric to adult health care among YSHCN ages 12-17 in the U.S.

Methods: In an analysis of the 2005-2006 NS-CSHCN, interview records from parents of 18,198 YSHCN were examined. Provider categories included type of personal doctor (pediatrician, general doctor, specialist, nurse practitioner, physician's assistant) and having doctors who treat only children. Using the MCHB's measurement framework, bivariate analyses were conducted to determine whether type of provider was associated with meeting a composite transition planning outcome and 3 component outcomes: YSHCN received anticipatory guidance from providers about future health care needs and health insurance, and providers encourage YSHCN to take responsibility for their own health care.

Results: Having a pediatrician as a personal doctor or having at least one provider who treats only children significantly reduced the odds of meeting component outcomes for anticipatory guidance

about future health care needs (OR: 0.75 [95% CI: 0.75-0.76], and OR: 0.70 [CI: 0.69-0.70], respectively) and health insurance (OR: 0.74 [CI: 0.74-0.75], and OR: 0.77 [CI: 0.77-0.77]). However, YSHCN with these types of providers were slightly more likely to have met the composite outcome.

Conclusion: This study adds to the body of knowledge concerning MCHB's performance outcomes for transition to adulthood. It also highlights the importance of assessing strength and direction of association between type of provider and each transition service component. Further examination of these relationships will allow us to better understand and improve the degree to which health care providers assist YSCHN and their families in transition planning.