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EDITOR'S FOCUS

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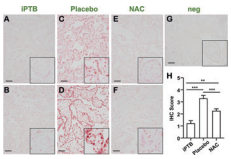
Early Career Investigator

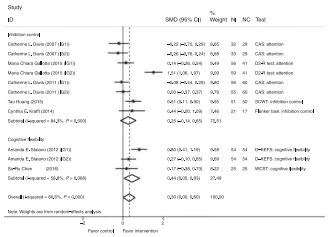
Congratulations to Parvesh Mohan Garg, the Early Career Investigator for January 2021. Dr. Garg is an assistant professor in the Department of Pediatrics at the University of Mississippi Medical Center in Jackson, Mississippi. His achievements are a testimony to the fact that even individuals in resource-limited settings can make dreams come true if they have the right passion and attitude. Dr. Garg obtained his medical degree from Seth G.S. Medical College, Mumbai, India. He then did his pediatric residency at the Icahn School of Medicine at Mount Sinai, New York, and a neonatology fellowship at East Carolina University, Greenville, North Carolina. Dr. Garg is interested in addressing the challenges faced by infants who develop necrotizing enterocolitis (NEC). In this issue he and colleagues report the outcomes of NEC infants who had incomplete resection of necrotic bowel. Dr. Garg's advice to others early in their career: have self-belief and passion, develop critical thinking skills, work hard, collaborate, find good mentors, and persevere. See pages 7 and 164

Antenatal *N*-acetylcysteine therapy for intra-amniotic infection and inflammation



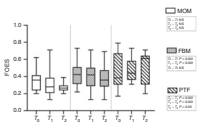
Despite appropriate antimicrobial therapies, intrauterine infection and inflammation contribute significantly to preterm birth and neonatal morbidities. In a single-center randomized control study, Buhimschi et al. observed that antenatal therapy with the multifunctional compound *N*-acetylcysteine decreased several prematurity-related morbidities, including bronchopulmonary dysplasia (BPD), in neonates exposed to intrauterine infection and inflammation. In an accompanying Comment, Jobe points out that most antioxidant therapy clinical trials in neonates have been unsuccessful at decreasing the burden of BPD. However, he acknowledges that antenatal interventions to decrease BPD are still at an early stage of development, and the results of this trial should set the tone for a larger multicenter trial to confirm the beneficial effects of antenatal *N*-acetylcysteine therapy. See pages 176 and 15

Effect of physical activity on the cognitive function of overweight and obese youth



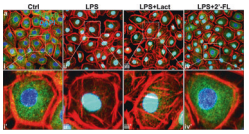
Youth obesity, a major health problem, negatively affects cognitive performance. Although physical activity can mitigate obesity-associated cognitive dysfunction, the effects of physical activity interventions on domain-specific cognitive performance are unclear. Employing a meta-analysis study design, Sun et al. found that enhanced and enriched physical activity interventions impacting adiposity can improve core executive functions and non-executive functions, but not metacognition and academic performance. These findings underscore the importance of physical activity for better cognitive functioning in overweight and obese youth. See page 47

Splanchnic energy expenditure with preterm formula vs. human milk



Mesenteric hemodynamic homeostasis plays a major role in the advancement and tolerance of feeds while avoiding the consequences of hypoxic–ischemic gut damage, including necrotizing enterocolitis. In a prospective cohort study from Italy, Dani et al. compared the effects of mother's own milk (MOM) with those of different formulas on splanchnic hemodynamic measures using near-infrared spectroscopy (NIRS). The authors demonstrate that, compared with MOM, the formulas induced significant splanchnic hemodynamic impairments in infants born between 25 and 31 weeks gestational age. The findings reinforce the notion that MOM is better than formula for vulnerable preterm infants. In an interesting exchange of related correspondence, Embleton et al. highlight the importance of adjusting significant variables and interpretation between study groups before any meaningful conclusions can be made. Dani et al. respond by acknowledging some of their study design limitations and clarifying appropriate adjustment of crucial variables between their study groups and the accuracy of their NIRS measurement methods. See pages 172, 4, and 6

Human milk decreases the burden of necrotizing enterocolitis



Human milk feeding is shown to consistently decrease the incidence and severity of necrotizing enterocolitis (NEC). However, how human milk protects against this disease is unclear. Sodhi et al. describe novel mechanisms through which human milk prevents and mitigates NEC. In their elegant and robust translational study, the investigators used animal models, human intestinal explants, and in silico modeling to determine that the oligosaccharides 2′-fucosyllactose and 6′-sialyllactose, which are present in human milk, are crucial to prevent intestinal inflammatory responses. The related Insights Image presents the authors' key findings. See pages 92 and 249

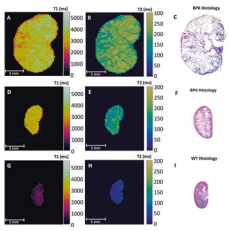
Genetic signatures predict sickle cell disease vasculopathy

Logistic regression analysis for predictors of frequent sickling crisis.

Parameters	Odds ratio (OR)	95% CI for OR		*p* Value
		Lower	Upper	
Hb5% at study	1.041	1.005	1.079	0.025
429T/C gene polymorphism	12.308	1.388	109.097	0.024
374T/A gene polymorphism	6.600	1.621	26.871	0.008
Ferritin (μg/L)	1.003	1.001	1.005	0.012

Early and accurate predictors of vascular disease in patients with sickle cell disease remain elusive. Based on a case–control study from Egypt, Safwat et al. show that genetic phenotyping can be useful for predicting vascular disease in these patients. The investigators demonstrate that polymorphisms in the receptor for specific advanced glycation end products predict vascular dysfunction in this patient population. In the related Insights article, Jaimee Roque describes the significant challenges faced by patients with sickle cell disease and their parents, emphasizing the need for better education of care providers about the disease, advocating for equitable care, and hoping for innovative therapies that align with the concept that prevention is better than cure. See pages 186 and 247

An imaging biomarker for a fatal renal disorder



Biomarkers that inform the progression and therapeutic responses of diseases are crucial for implementing well-designed clinical trials. Medical progress has been stalled for many fatal disorders, such as autosomal recessive polycystic disease (ARPKD), due to lack of sensitive and specific biomarkers. In a translational study, MacAskill et al. used mouse models and human patients to demonstrate that renal magnetic resonance imaging can be a useful imaging biomarker for monitoring disease progression in patients with ARPKD. See page 158