

EDITOR'S FOCUS

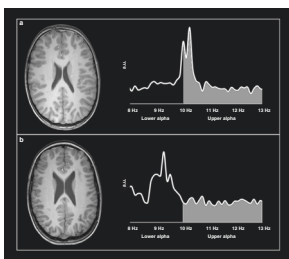
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Early Career Investigator



Congratulations to Silvia Martini, the Early Career Investigator for June 2022. Dr. Martini received an honors degree in medicine from the University of Bologna and subsequently worked in the Rosie Hospital in Cambridge, UK. She designed a research proposal to investigate noninvasive neuromonitoring in preterm infant and continued this research in her PhD and postdoctoral work. Dr. Martini has mentored students and trainees and advises them to ask questions and to appreciate the value of teamwork. In this issue, she and colleagues report a study of nephrotoxic drugs in preterm infants. Changing patterns of urinary biomarkers during ibuprofen and amikacin administration indicated underlying pathophysiological effects on renal function. Urinary cystatin C was elevated with amikacin treatment, and ibuprofen increased urinary osteopontin and neutrophil gelatinase-associated lipocalin. Urinary biomarkers are inexpensive and noninvasive and offer potential for serial monitoring of renal function. See pages 1635 and 1715

Use of MRI and EEG techniques to assess long-term motor outcome after preterm birth



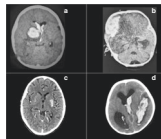
Relationships between motor outcome and brain volumes, diffusion tensor imaging, and brain function in preterm-born children at school age were evaluated by van't Westende et al. Electroencephalography showed that ventricular volume and brain activity have an independent relationship with motor outcome in preterm-born children at school age. The authors suggest that there is a lasting interplay between structure and function that underlies adverse motor outcome and that ventricular volume and brain activity (relative A2 power) are independently associated with motor outcome. See page 1874

Congenital heart disease and autonomic dysfunction linked to brain injury



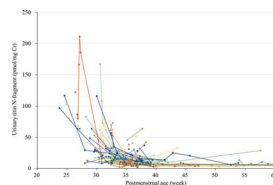
Schlatterer et al. found that autonomic dysfunction, as measured by heart rate variability (HRV), in early transition is associated with preoperative brain injury in neonates with critical congenital heart disease. HRV may act as an early biomarker for brain injury in these infants. Further investigation of HRV as a biomarker for brain injury risk may lead to advances in neuroprotection. In an accompanying Comment, Shah and Brumberg describe the lifetime health care needs of patients with critical congenital heart disease and the disparities in access to health care and insurance coverage. (Photo: GOLFX/Getty.) See pages 1723 and 1636

Stroke and mortality in pediatric critical care patients with COVID-19



The mortality among pediatric patients with COVID-19 in Peru is higher than that reported in other countries. In a case-control study, Coronado Munoz et al. found that the mortality among pediatric patients with COVID-19 was associated with comorbidities. Patients with COVID-19 without comorbidities who presented with hemorrhagic and ischemic strokes had a significantly higher mortality than those with acute COVID-19. See page 1730

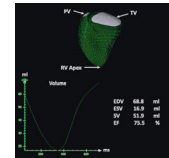
Assessment of catabolic state via urinary titin N-fragment



Fukushima et al. describe the higher catabolic state in infants, especially in those born preterm. Catabolic state was exponentially elevated after birth in 219 infants, as shown by 414 urinary titin measurements. After birth, urinary levels of titin N-fragment exponentially declined, and the maximum level within a week was associated with the time to return to birthweight in preterm infants. It also correlated with creatine kinase in full-term

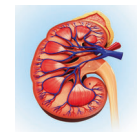
infants and with blood urea nitrogen in preterm infants. The use of urinary titin N-fragment indicated that catabolic state was particularly elevated in very and extremely preterm infants. See page 1748

Thalassemia complications in children



Sheen et al. demonstrated the increased susceptibility to nontyphoidal *Salmonella* (NTS) infection in children with thalassemia in a national cohort of 912 children in Taiwan. Higher hospitalization rates were particularly notable among transfusion-naïve children with thalassemia and NTS. Thalassemia is thus another possible risk factor for more severe NTS as well as extremes of age, sickle cell disease, and immunosuppressing conditions. Elhawary et al. evaluated right ventricular function in children with β -thalassemia major (β -TM), using newer modalities such as three-dimensional echocardiography and two-dimensional speckle tracking. The detection of decreased right ventricular function at a pre-symptomatic stage in β -TM patients enables early intervention. The author of a related Insights piece describes the impact of thalassemia on children and their families and notes the need for more research, early intervention, and greater access to resources for families. See pages 1858, 1709, and 1913

Hydrogen-rich water and renal fibrosis in rats with ureteral obstruction



Mizutani et al. demonstrated that oral intake of hydrogen-rich water (HW) reduced oxidative stress and suppressed interstitial fibrosis in unilateral ureteral obstruction-induced renal injury in rats. The study identified a role of molecular hydrogen and klotho in the mechanism of renal fibrosis. HW is safe and without side effects, and its use in the treatment of oxidative stress may improve renal fibrosis in congenital obstructive nephropathy. (Photo: PIXOLOGIC-STUDIO/Getty.) See page 1695

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