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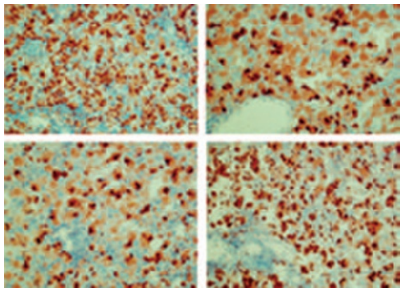
Pediatric transfusion medicine

Dmitry Naumov/©iStockphoto/Thinkstock

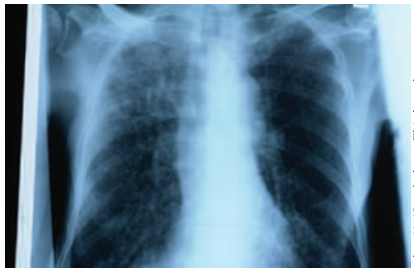
Josephson and colleagues provide a targeted review of transfusion strategies and transfusion-transmitted infectious diseases. Specialists in pediatric transfusion medicine offer recommendations for conducting relevant translational research, observational studies, and clinical trials. **See page 425**

Impaired cholesterol elimination



Zinkhan and coinvestigators hypothesized that intrauterine growth–restricted (IUGR) rats fed a high-fat diet (HFD) would have increased levels of cholesterol and decreased levels of Cyp7a1 protein and bile acids compared with control rats fed an HFD. They placed IUGR rats and control pups on either a regular chow diet or one of two HFDs. The findings suggest that restriction of intrauterine growth increases the vulnerability of HFD-fed rats to hypercholesterolemia via reduced conversion of cholesterol to bile acids. **See page 432**

Interstitial lung disease



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Genetic variations associated with interstitial lung diseases have not been extensively studied in Japanese infants. Akimoto *et al*. conducted a 2.5-year study in which infants with unexplained lung dysfunction underwent genetic testing. Of the gene variations found to be responsible in the study population, an abnormality in the surfactant protein-C gene was the most prevalent. **See page 453**

Predicting neurological outcome

The lectin-complement pathway, which is central to the propagation of ischemia–reperfusion injuries in many tissues, might affect the genesis of brain damage in preterm infants. Auriti *et al*. investigated whether MBL2 gene single-nucleotide polymorphisms could indicate the risk of adverse neurological outcome in these infants. After assessing 75 babies in a longitudinal study, they found that the MBL2 exon-1 OO genotype was significantly more frequent in children with developmental deficits than in controls. **See page 464**

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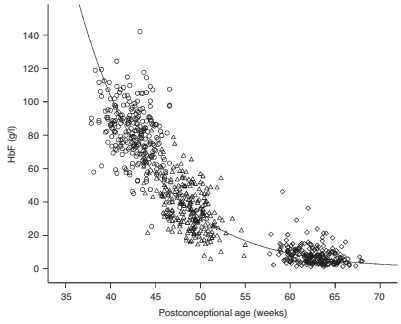
Iron and fetal hemoglobin



Infants synthesize both fetal (HbF) and adult hemoglobin; however, how the hemoglobin switch is regulated remains unknown. Berglund and coauthors hypothesized that administration of iron supplements to infants affects the process that leads to disappearance of HbF. They randomized 285 low-birth-weight infants into three groups receiving different amounts of iron supplements over months. Their hypothesis was rejected, but they confirmed that postconceptional age appears to be the strongest predictor of HbF disappearance. **See page 477**

2014 Howland Award

In her acceptance lecture for the 2014 John Howland Award, Rebecca H. Buckley addressed the importance of early diagnosis in cases of severe combined immunodeficiency. **See page 483**