In This Issue

Research

Insulin in Pediatric Diabetic Ketoacidosis

Fluid therapy and insulin are the cornerstones of diabetic ketoacidosis management. In this randomized clinical trial, Nallasamy and colleagues compare the efficacy and safety of low-dose (0.05 U/kg per hour) with standard-dose (0.1 U/kg per hour) insulin infusion in 50 children with diabetic ketoacidosis. The mean rate of blood glucose decrease until a level of 250 mg/dL or less was reached, the mean time to achieve this target, and the mean time to resolve acidosis were similar, but with less hypoglycemia and hypokalemia in the low-dose group. The editorial by Granados and Lee discusses the importance of the study and the need to confirm these findings with a larger trial.

Aerobic and Resistance Training in Youth Randomized Trial

Although exercise is recommended for obese adolescents, the optimal exercise prescription to reduce adiposity and its comorbidities is unclear. Sigal and colleagues randomized 304 obese youth aged 14 to 18 years to receive 22 weeks of aerobic training, resistance training, combined aerobic and resistance training, or neither; all received dietary counseling. Aerobic, resistance, or combined training produced modest but clinically significant reductions in percentage body fat, with combined aerobic and resistance training suggesting the greatest benefit. Adolescents who want to maximize the effect of exercise should ideally perform both aerobic and resistance training.

Effect of Vitamin A Shortage on Low-Birth-Weight Infants

Vitamin A has been used prophylactically to decrease the risk for death or chronic lung disease in extremely low-birth-weight infants. Tolia and colleagues examine the effect of the national shortage of injectable vitamin A, which began in late 2010, using data on 6210 extremely low-birth-weight infants from more than 200 neonatal intensive care units in 33 states. From the beginning of 2010 to the middle of 2012, vitamin A use declined from about 30% of infants to almost zero, with no change in the primary outcomes of death or chronic lung disease. In the accompanying editorial, Laughon discusses the potential reasons why the protective effects of vitamin A shown in a rigorous efficacy trial were not apparent in this natural experiment effectiveness study.

Hospital Costs of Multiple and Singleton Births

A substantial portion of multiple births, especially higher-order births, are due to assisted reproductive technology (ART), but the health service use and costs associated from the higher risk for poor outcomes among infants born from ART are not known. Using data on 233 850 infants born in Western Australia, Chambers and colleagues examine the frequency and cost of hospital admissions during the first 5 years of life. Higher-order multiple-birth babies had costs US$21 681 per baby higher than singleton births in the first 5 years, with most of this differential occurring in the first year. In their editorial, Mehta and Pauly discuss the much higher likelihood of multiple-embryo transfer than single-embryo transfer after ART in the United States compared with other countries and discuss the lack of insurance coverage for ART as potential reasons.