

## Theme: Pediatric Nephrology

**Blood pressures at 6-years of children born extremely preterm** (*J Am Heart Assoc.* 2017;6:e005858)

There is an increasing concern that preterm birth is a risk factor for hypertension at young age, and implications for the lifetime risk of cardiovascular disease. In this study, all children previously enrolled in EXPRESS (Extremely Preterm Infants in Sweden Study) were invited for a comprehensive follow up at age 6.5 ± 3 months. Among children born extremely preterm, shorter gestation, higher body mass index, and higher heart rate at follow-up were independently associated with higher blood pressure (BP) at 6 years of age. On multivariate regression analysis, systolic BP decreased by 0.10 SD ( $P=0.08$ ) and diastolic BP by 0.09 SD ( $P=0.02$ ) for each week longer gestation. Although the study is reassuring, these children born extremely preterm need long-term follow up with BP measurements at every health visit, as they had a higher BP as compared to term peers.

**Levamisole increases the time to relapse in children with steroid-sensitive idiopathic nephrotic syndrome** (*Kidney Int.* 2018;93:510-8)

Levamisole, as a steroid sparing agent was considered the least toxic, least expensive, and not classified as an immunosuppressive agent. However, it was withdrawn from the international market in 2004 for human use due to lack of clear indications. This international (5 European countries and India), multicenter, placebo-controlled, double blind, randomized clinical trial was done to reassess its usefulness in prevention of relapses in children with steroid-sensitive idiopathic nephritic syndrome. The efficacy and safety of one year of levamisole treatment in children with frequently relapsing nephrotic syndrome (FRNS) was evaluated. Between 100 days and 12 months after the start of study medication, the time to relapse (primary endpoint) was significantly increased in the levamisole compared to the placebo group (HR 0.22; 95% CI 0.11, 0.43). The most frequent serious adverse event (4 out of 50 patients) possibly related to levamisole was asymptomatic reversible moderate neutropenia. The authors concluded that levamisole could be a reasonable first 'second-line' agent in children with FRNS.

**Association of acute kidney injury with concomitant vancomycin and piperacillin/tazobactam use** (*JAMA Pediatr.* 2017;171:e173219)

The combination of intravenous (IV) vancomycin plus

piperacillin sodium/tazobactam sodium has shown to be associated with a higher risk of acute kidney injury (AKI) compared with vancomycin plus any other  $\beta$ -lactam antibiotic in adults. This retrospective cohort study assessed the risk of AKI in children during concomitant therapy with vancomycin and one antipseudomonal  $\beta$ -lactam antibiotic throughout the first week of hospitalization, in children hospitalized for  $\geq 3$  days from 2007-2012. A total of 157 out of 1915 hospitalized patients receiving combination therapy (8.2%) had antibiotic-associated AKI. This number included 117 of 1009 patients (11.7%) who received IV vancomycin plus piperacillin/tazobactam combination therapy. After adjustment for age, level of care and nephrotoxins, IV vancomycin plus piperacillin/tazobactam combination therapy was associated with higher odds of AKI each hospital day compared with vancomycin plus one other antipseudomonal  $\beta$ -lactam antibiotic combination (adjusted OR 3.40; 95% CI 2.26, 5.14). Pediatricians must be aware of the potential added risk of this combination therapy when making empirical antibiotic decisions for sick children in the intensive care settings.

**Childhood chronic kidney disease and risk of adult end stage renal disease** (*N Engl J Med.* 2018;378:428-38)

This study was a nationwide, population-based, historical cohort study of 1,521,501 Israeli adolescents who were examined before compulsory military service in 1967 through 1997; data was linked to the Israeli ESRD registry. Kidney diseases in childhood included congenital anomalies of the kidney and urinary tract, pyelonephritis, and glomerular disease; all participants had normal renal function and no hypertension in adolescence. During 30 years of follow-up, ESRD developed in 2490 persons. A history of any childhood kidney disease was associated with a hazard ratio for ESRD of 4.19 (95% CI 3.52, 4.99). The associations between each diagnosis of kidney disease in childhood and the risk of ESRD in adulthood were similar in magnitude. A history of kidney disease in childhood was associated with younger age at the onset of ESRD in adulthood. The authors concluded that a history of clinically evident kidney disease in childhood, even if renal function and blood pressure were apparently normal in adolescence, was associated with a significantly increased risk of ESRD, which suggests that kidney injury or structural renal abnormalities in childhood has long-term consequences.

SIDHARTH KUMAR SETHI  
sidsdoc@gmail.com

Indian Pediatrics commemorates World Kidney day – March 8, 2018. The theme for this year is "Kidney & Women's Health: Include, Value, Empower." See details at [www.worldkidneyday.org](http://www.worldkidneyday.org).

