29 Risk Factors and Long-term Renal Outcomes of Congenital Anomalies of the Kidney and Urinary Tract in the Taiwanese Youth

台灣兒童發生先天性腎臟與泌尿道構造異常慢性腎臟病之風險因子與結果

Chien-Ning Hsu[1], Wan-Ju Hsieh[1], You-Lin Tain[2]
Department of Pharmacy, Kaohsiung Chang Gung Memorial Hospital[1]; Department of Pediatrics, Kaohsiung Chang Gung Memorial Hospital[2]
許茜甯[1]、謝宛茹[1]、田祐霖[2]
高雄長庚紀念醫院藥劑部[1]、兒童腎臟科[2]

Background: Congenital Anomalies of the Kidney and Urinary Tract (CAKUT) are a major cause of morbidity in children with chronic kidney disease (CKD). Very few studies with sufficiently large sample sizes have been conducted to examine birth status and congenital defect of genitals and urinary tract in association with CAKUT and follow its long-term in the pediatric population. We measured the risks for and progression to end-stage renal disease of CAKUT in Taiwan pediatric population.
Methods: A retrospective cohort study was performed for children aged <20 years with CAKUT during 1/1997-12/2011 using the National Health Insurance research database for approximately 10 million young people in Taiwan. All patients were followed since CAKUT onset to starting chronic dialysis or renal transplantation (renal replacement therapy, RRT), death or censored. Kaplan-Meier curve and Cox proportional hazards methods were used to estimate cumulative incidence and individual effect of prenatal risk, clinical conditions on RRT-free survival and all-cause mortality. Validation of potential prenatal risk factors were based on congenital defect of genitals and urinary retrieved from the Taiwan Birth Registry from 2001-2011.
Results: The cohort comprised 14,978 children and adolescents with CAKUT. Median age of CAKUT onset was 1.33 years old (IQR, 0.58-6.26) with male/female ratio 1.59. Abnormalities of the genitals and urinary tract presented in 7/10,000 births, 10% of all birth defects in the Taiwan newborns. During the follow-up (age ranged 0-34 years old), 0.84% patients with CAKUT went into RRT or died. Factors significantly associated with both disease progression and mortality were younger age of onset, forms of CAKUT, types of congenital defect, and poorer birth status.
Conclusions: Patients born with more risks involving in types of congenital defect and poorer birth status generally experienced the higher risks of premature mortality and progression to ESRD.

30 Occurrence of Common Allergic Diseases in Children with Idiopathic Nephrotic Syndrome

腎病症候群日後發生兒童過敏疾病的流行病學分析

I-Chung Wang, Chang-Ching Wei, Ching-Yuang Lin
Children's Hospital, China Medical University Hospital
王奕中、魏長菁、林清淵
中國醫藥大學附設醫院兒童醫院

Background: Clinical and immunological studies have constantly shown a possible link between atopy and idiopathic nephrotic syndrome (INS). However, whether allergic diseases occur after INS develops is unknown.
Methods: From Taiwan's National Health Insurance database, 1340 children with newly diagnosed INS and 5360 non-INS matched controls were identified in 2000–2007. By the end of 2008, the incidences and hazard ratios of the four allergic diseases, including allergic conjunctivitis, allergic rhinitis, atopic dermatitis, and asthma, were calculated.
Results: The incidence rates of all four allergic diseases were greater in the INS cohort than in the non-INS cohort in all age groups and decreased sharply as age increased in both cohorts. Children with INS had the highest adjusted hazard ratio of 4.13 (95% confidence interval [CI], 2.50–6.83) for atopic dermatitis and the lowest adjusted hazard ratio of 1.71 (95% CI, 1.39–2.09) for allergic rhinitis. Most of the allergic diseases appeared within 2–6 months after INS developed and the incidences declined with follow-up time.
Conclusions: Allergic disorders are common in children with INS, especially within the first year after diagnosis. The role of INS in the development of allergic disorders should be elucidated to establish innovative disease intervention programs.

31 Aminothiols in Homocysteine Metabolic Cycle Are Associated with Cardiovascular Outcomes in Children with Chronic Kidney Disease

同型半胱氨酸代謝循環產生的氨基硫醇與慢性腎臟病兒童的心血管預后有相關

You-Lin Tain[1], Chien-Ning Hsu[2], Shao-Ju Chien[1], I-Chun Lin[1], Mao-Hung Lo[1]
Department of Pediatrics, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University, College of Medicine[1], Taiwan; Department of Pharmacy, Kaohsiung Chang Gung Memorial Hospital[2]
田祐霖[1]、許茜甯[2]、簡邵如[1]、林宜君[1]、羅貿鴻[1]
高雄長庚紀念醫院兒童內科部[1]、藥劑部[2]

Background: Hyperhomocysteinemia is an independent risk factor for cardiovascular disease. Homocysteine (Hcy) can be metabolized to cysteine (Cys), glutathione (GSH), and cysteinylglycine (Cys-gly). Cardiovascular disease is a major cause of death in pediatric patients with chronic kidney disease (CKD). 24-hr ambulatory blood pressure monitoring (ABPM) has proven to be a superior predictor of cardiovascular outcome when compared to clinic BP measurement. We examined the relationship between aminothiols among the Hcy metabolic cycle, estimated glomerular filtration rate (eGFR), and 24-hr ABPM in children and adolescents with CKD.
Methods: The eGFR was calculated by the Schwartz formula on the basis of height and serum creatinine (Cr). The CKD staging is defined by the K/DOQI guideline. Plasma Cys, Hcy, GSH, and Cys-gly levels were measured by HPLC. Subjects wore a 24-hr ambulatory BP monitor. The ambulatory arterial stiffness index (AASI), an index for arterial stiffness, was calculated as 1 minus the regression slope of 24-h diastolic on systolic BP.
Results: We enrolled a total of 35 patients (M=21, F=14)