

S7 Urine screening

S7-1 Longitudinal Study of risk factor for renal progression in Children with Heavy Proteinuria in Taiwanese

Ching-Yuang Lin

Division of Pediatric Nephrology and Clinical Immunology Center,
China Medical University Hospital; College of Medicine,
China Medical University, Taiwan

OBJECTIVE: Based on mass urinary screening (MSU) in school children, we investigated those with heavy proteinuria and risk factors of renal progression in early chronic kidney disease (CKD). **METHODS:** A prospective cohort of 5,351 children with heavy proteinuria detected by school MSU from 1992 to 1996, and then followed to 2009. **RESULTS:** Cumulative rate of end-stage renal disease (ESRD) and mortality increased, especially in CKD Stage 3. Steepest slope of cumulative ESRD number was also in Stage 3, critical point in renal progression. Comparing CKD and non-CKD groups revealed no significant difference in biomarkers below 6 years old; at 7-12 years of age, the CKD group had markedly low serum albumin and higher serum cholesterol levels. Among 13-to-17-year-olds, lower serum albumin, and higher cholesterol levels appeared in the CKD group; beyond 18 years old, besides the above-cited risk factors, higher fasting BS was also noted. **CONCLUSIONS:** At 7-17 years of age, glomerulonephritis (GN) with renal progression was the main cause of CKD. Above 18 years, metabolic syndrome became predominant. Under six years, chief cause was decreased renal mass with renal progression: Early transfer to pediatric nephrologist, and individualized health care before CKD Stage 3, may prevent or delay renal progression.

S7-2 The Urinary Screening in Very Young Children in China

Xuhui Zhong

Department of Pediatrics, Peking University First Hospital, Beijing, PR China

In recent years, the number of children with chronic renal failure has increased a lot in China. Urinary screening might be very important for early detection, prevention and treatment of chronic kidney disease, thus reducing the incidence of chronic renal failure. However, there has been no consensus on the need for urinary screening. The national urinary screening program of children has been performed in Japan, Korea and Taiwan. The researchers in Japan considered that school-screening program was effective for early detection of glomerulonephritis. While the experts from America hold the opposite opinion, they thought urinary screening was unnecessary. Moreover, the previous survey had inevitable limitations. They rarely applied random sampling, mostly focused on the children of school age. So the population investigated could not represent the children of all ages. The comparison study of urinalysis between different areas was also rare.

What about the urinary screening in China? So far, there is still no routine urinary screening or screening guideline of children. The epidemiologic data is absent, especially in very young children. It is really necessary and important to obtain the prevalence of abnormal urinary analysis, to investigate whether urine screening is useful for early detection of renal diseases and reducing the medical cost in China.

Based on the above reasons, we performed a multi-center cross-sectional study of urine screening among children younger than 3 years old from urban and rural districts in Beijing. Sample size was calculated by the special formula. The urban and rural districts were chosen according to the economic level and geographic location. Then the study participants were determined by stratified, cluster and random sampling. Approximate 12,075 children younger than 3 years old in Beijing (from 4 urban districts and 4 rural districts, respectively) have been studied. The participants were asked to collect the first morning urine sample. Strict quality control was performed. We thought the result could represent the actual condition of very young children in Beijing. Primary analysis of our study showed the overall prevalence of the abnormal urinalysis of the children younger than 3 year old in Beijing was 0.98%, the abnormal urinalysis in children from urban districts was more common than that from rural districts. The rural guardians had less knowledge about the importance of the urinalysis and the kidney diseases, compared with the urban guardians. The practice of urine screening and the associated health education should be modified according to the special area characteristics.