Abstract

Background: Congenital anomalies of the kidney and urinary tract (CAKUT) are the most common cause of chronic kidney disease (CKD) in children and adolescents. The authentic cause of CAKUT remains unknown but many gene mutations are detected. The purpose of this study was to discover factors associated with the development of CKD.

Methods: retrospectively chart review was performed for gathering the characteristic of children who were diagnosed CAKUT and probable factors which are associated with CKD progression

Result: Data from CAKUT patients presented at the pediatric nephrology outpatient clinic were analyzed in a cross-sectional study. This research has examined 385 CAKUT case studies. The most detected CAKUT type is congenital hydronephrosis (30.4%), followed by ureteropelvic junction obstruction (UPJO) (20.3%). Of all cases, 23.6% (91 cases) contributed to CKD. Of this number, 9 cases have advanced-stage CKD. According to the binary logistic regression, the most significant factors are premature birth (p=0.002) and history of urinary tract infection (UTI) (p=0.026). Both factors are most relevant to CKD. History of corrective surgery, on the other hand, could reduce the risk of CKD progression, which has a p-value of 0.009. From the survival analysis, the Kaplan-Meier curve provides information about the estimated time of how long the patient can survive CKD. The curve shows that CKD can be detected early in patients with bilateral CAKUT or preterm or history of UTI. In addition, patients with proteinuria or acidosis have a higher tendency to develop advanced-stage CKD than others.

Conclusion: Preterm born, history of febrile UTI and history of surgical correction are associated with CKD progression. The patients who have these factors should be intensively followed up for early CKD diagnosis.

Keywords: Congenital anomalies of kidney and urinary tract, CAKUT, chronic kidney disease, CKD, children, ureteropelvic junction obstruction, UPJO