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### Experience of Pediatric Kidney Transplantation between 1985 and 2016 : A Single Regional Center Study

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**Objectives** : Kidney Transplantation (KT) is one of the most ideal treatments for pediatric end-stage renal disease (ESRD) patients. However, clinical data of KT for pediatric ESRD patients in South Korea has not been systematically established yet as compared with that of KT for adult patients. Therefore, the authors report the clinical outcome of pediatric ESRD patients who underwent KT in a single regional center.

**Methods** : The authors retrospectively investigated medical records of 60 pediatric patients who were diagnosed as ESRD and underwent KT in Kyoungpook National University hospital between January 1985 and June 2016. Survival analysis for graft-failure and mortality was performed by using Kaplan-Meier method.

**Results** : 40 male (66.7%) and 20 female (33.3%) patients were included for this study. Mean age was  $13.86 \pm 4.26$  years old (1.76~19.97). The most youngest patient at the point of KT was 1.76 year-old girl, whose body weight was 9 kg. 6 patients (10.0%) underwent KT immediately after diagnosis of ESRD, the others underwent KT after dialysis treatment (mean  $368.7 \pm 441.8$  days): 23 for peritoneal dialysis and 31 for hemodialysis. The mean age of donors (50 living-related (83.3%), 10 deceased (16.7%)) was  $40.10 \pm 12.85$  years old (5.37~64.42), and the ratio of gender was male : female=1.07:1. The cause of ESRD were as follows: 20 chronic glomerular nephritis (33.3%), 7 reflux nephropathy (11.7%), 4 hereditary kidney disease (6.7%), 3 polycystic kidney disease (5.0%), 1 kidney dysplasia (1.7%), 4 others (6.7%), and 21 unknown (35.0%). 12 patients (20%) received basiliximab as the induction immunosuppressant therapy. Cyclosporine(34, 59.6%) and FK 506 (24, 40.6%) were used as initial major immunosuppressant therapy. 25 patients underwent KT before 2000, and 35 patients after 2000. It is calculated that total survival rate for mortality at 1 and 5 year after KT were 98% and 96%, respectively, and

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survival rate for graft-failure at 1 and 5 year were 94% and 68%, respectively. In particular, as for patients whose KT was performed after 2000, survival rate for graft-failure –in cases of living-related donor– at 1 and 5 year were 92% and 77%, respectively, and those for graft-failure –in cases of deceased donor– at 1 and 5 year were 100% and 67%, respectively. Height percentage change per month showed significant difference according to the point of kidney transplantation. The children who had KT before 10 years old showed  $0.15\pm 0.2\%$  increase of growth rate. But who had it after 10 years old showed  $-0.05\pm 0.17\%$  growth rate change. ( $P=0.0214$ )

**Conclusions :** Although KT of pediatric patients was less frequent than that of adults, causes of ESRD are various and clinical outcome after KT has great impact on growth and development of pediatric patients. Therefore, it is suggested that further analysis and monitoring for clinical progress after KT of pediatric ESRD patients should be done.

**Keywords :** Kidney Transplantation (KT), pediatric ESRD, single regional center