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## **Hyperparathyroidism after kidney transplantation in children**

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**Objectives:** Most patients with chronic kidney disease develop variable degrees of secondary hyperparathyroidism (HPT) and it is considered to be resolved after kidney transplantation (KT). However, it is reported in adults that persistent HPT after KT occurs in up to 50% of KT recipients, with various risk factors including dialysis duration and pretransplant parathyroid hormone (PTH) level. We analyzed the prevalence of HPT after KT and its risk factors among children in a single-referral hospital.

**Methods:** This retrospective observational study analyzed medical records of children who received KT between 2007 and 2020 at Seoul National University Children's Hospital. Persistent HPT was defined as the median PTH level after KT of more than 65 pg/mL. Annual prevalence of persistent HPT with associated abnormalities, such as hypophosphatemia and hypercalcemia, was identified.

**Results:** Among 153 patients who received KT between 2007 and 2020, 56% of them were boys and their mean age was 10.5 years. The prevalence of persistent HPT was about 36% after 1 year, which remained stable up to 4 years after KT. The occurrence of persistent PTH was associated with longer pretransplant dialysis duration and pretransplant hyperphosphatemia. 15 of them received cinacalcet therapy and 1 of them received parathyroidectomy. 49.6% of children were either on graft failure or last eGFR less than 60ml/min/1.73<sup>2</sup> after a median of 4.6 years post KT; hyperparathyroidism status was not associated with decreased kidney function.

**Conclusions:** Prevalence of persistent HPT after KT is common in children, with a considerable portion of them being treated medically or surgically. The degree of secondary hyperparathyroidism before KT may be a risk factor for developing persistent hyperparathyroidism in children. However, an adverse effect on graft function was not observed in our cohort. Further study is needed regarding precise bone metabolism among these populations.