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The risk factors of persistent hyperparathyroidism in children who received kidney transplantation.

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Objectives: This study aimed to investigate the risk factors of persistent hyperparathyroidism (PHPT) in children who received kidney transplantation (KT).

Methods: We retrospectively analyzed the clinical findings and laboratory results of the patients who underwent KT at below 19 years of age at our hospital, who were followed up for more than one year after KT. We calculated mean±standard deviation, median [minimum – maximum] for each data.

Results: We included a total of 46 patients (male:female = 26:20). Twelve patients (26.1%) were PHPT group, and 34 patients (73.9%) were normal parathyroid hormone (nPTH) group. The dialysis duration was 57.1±49.9, 44 [0 - 145] months in PHPT group and 23.5±25.8, 15 [1 - 121] months in nPTH group ($p = 0.040$). The pre-KT ($p = 0.015$) and 3-month average prior to KT (3M avg.) ($p = 0.026$) phosphorus and the post-KT total CO_2 ($p = 0.022$) was significantly lower in PHPT group. The pre- ($p = 0.021$) and post-KT ($p = 0.005$), and 3M avg. ($p = 0.018$) iPTH levels were significantly higher in PHPT group.

Conclusions: Patients with prolonged dialysis duration, increased iPTH before and after KT, and low bicarbonate level after KT are at risk of PHPT and should be monitored carefully.