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Parathyroidectomy versus cinacalcet in the treatment of tertiary hyperparathyroidism after kidney transplantation – retrospective study

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Objectives: Hyperparathyroidism is prominent in patients with chronic renal failure with reduced renal function. Hyperparathyroidism has been observed in some patients after kidney transplantation. There is a debate about which treatment has been better for cases where hyperparathyroidism persists after kidney transplantation.

Methods: This retrospective study included 83 patients who underwent kidney transplantation between 1990 and 2018 in a single tertiary center in Korea. Sixty-four patients were undergoing by parathyroidectomy (PTX) and 19 patients were treated with cinacalcet after transplantation. The primary outcome was the difference in the trend of serum calcium and PTH level between the two groups

Results: Serum calcium and PTH level were improved by both of the PTX and the cinacalcet group. One year after treatment, PTX resulted in lower serum calcium level (9.7 ± 0.7 mg/dL) compared with cinacalcet (10.6 ± 0.8 mg/dL) ($P < 0.01$). For the serum PTH, the PTX group showed a significantly lower PTH level than the cinacalcet group at 6 months (129.1 ± 80.3 vs 223.0 ± 95.6 pg/mL) ($P < 0.01$) and 1 year (118.8 ± 75.5 vs 262.5 ± 86.7 pg/mL) ($P < 0.01$). There was no statistically significant difference in the incidence of kidney transplant rejection, graft failure, or cardiovascular events between the two groups.

Conclusions: Parathyroidectomy normalized serum calcium, but cinacalcet did not cause to a normalization of serum calcium concentration. Parathyroidectomy was more effective in lowering serum calcium and PTH levels than the cinacalcet administration. These results provided a rationale for choosing PTX for the treatment of tertiary hyperparathyroidism.