



# IMPACT OF PARATHYROIDECTOMY ON THE ACHIEVEMENT OF BONE AND MINERAL PARAMETERS RECOMMENDED BY KDIGO CLINICAL PRACTICE GUIDELINE IN DIALYSIS PATIENTS

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## Background

Secondary hyperparathyroidism (SHPT) is a common complication of chronic kidney disease. To prevent or alleviate metabolic bone disease in dialysis patients with CKD-MBD thereby reducing their risk of cardiovascular disease and improving their prognosis, the Kidney Disease: Improving Global Outcomes (KDIGO) published the Clinical Practice Guidelines for CKD-MBD and recommended target ranges for serum calcium (8.5–10.5 mg/dL), phosphate (2.5–4.5 mg/dL), and parathyroid hormone (PTH, 150-500 pg/mL).

The majority of patients with SHPT can be managed by medical treatment and there are many modalities available for medical treatment, but these treatments do not always provide control of the SHPT and some patients require parathyroidectomy (PTX). The short- and long-term impact of PTX on the parameters of mineral bone disease in dialysis patients remains unclear.

This study evaluated PTX in SHPT patients for the achievement of bone and mineral parameters recommended by KDIGO clinical practice guideline in dialysis patients.

## Methods

A retrospective chart review of 80 dialysis patients who underwent PTX from April 2005 to November 2013 at one institution. Serum intact parathyroid hormone (iPTH), calcium (Ca), phosphate (P) and alkaline phosphatase (AP) levels were measured in pre-operative time, one month (short-term follow-up group, n=80) and 12 months after PTX (long-term follow-up group, n= 47).

## Results

The mean age of the patients was 49 years and 62.5% were women. The total PTX with autotransplant was performed in 86% of patients and other patients underwent subtotal PTX. Patients had severely uncontrolled serum iPTH, Ca, P and AP levels before PTX. The table 1 shows a comparison of the parameters in relation to periods of evaluation.

The table 2 shows the percentages of cases achieving KDIGO targets.

Table 1

	Pre-operative	Short term	Long term	p-value*
Ca (mg/dL)	10.44±1.06	9.38±2.2	9.3±1.09	<0.0001
P (mg/dL)	5.85±1.58	3.16±1.54	4.83±1.45	<0.0001
AP (U/L)	654.6±598.2	770.2±839.5	104.6±72	<0.0001
iPTH(pg/mL)	2035.5±588	221.2±451	188.3±290.6	<0.0001

Values are presented in mean± standard deviation, \* Friedman's test

Table 2

	Pre-operative	Short term	Long term	p-value*
Ca	59	38	66	0.011
P	13	53	36	<0.0001
iPTH	2.5	19	17	0.012
Ca/P/iPTH	0	6.7	8.5	0.931

Values are presented in percentage. \* Likelihood Ratio Test

In the long term follow-up group, 72.4% of patients had serum iPTH levels below 150 pg/mL, 17% were in agreement with the KDIGO and 10.6% had iPTH greater than 500 pg/mL.

## Conclusions

The PTX is effective in treating severe secondary hyperparathyroidism. However, long-term, it cannot achieve all parameters recommended by KDIGO and exposes patients to adynamic bone disease.

## REFERENCES

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