

EFFECTIVENESS OF AN I-PTH MEASUREMENT IN PREDICTING POST THYROIDECTOMY HYPOCALCEMIA: PROSPECTIVE CONTROLLED STUDY

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Background/Purpose: Hypocalcemia is the most common complication after total thyroidectomy. The purpose of this study was to determine whether measurement of intact parathyroid hormone (i-PTH) level in thyroidectomy patients could predict hypocalcemia.

Methods: We performed a prospective study of patients undergoing total thyroidectomy. Serum concentration of i-PTH, total calcium (Ca), ionized calcium (Ca²⁺), phosphate (P), magnesium (Mg), and albumin were measured preoperatively and at 0 hour, 6 hours, 12 hours, 24 hours, 48 hours, and 72 hours postoperatively.

Results: 108 patients were recruited to the study. A total of 50 patients (46%) experienced hypocalcemia. The serum i-PTH concentration was linearly related to the time of measurement, while concentrations of P, Mg, albumin, Ca, and Ca²⁺ were not. We compared odds ratios, and found that the concentration of i-PTH at 6 hours post operation was the most closely related to the occurrence of hypocalcemic symptom. On ROC analysis using i-PTH level at 6 hours, an i-PTH level of 10.6 mg/dL was found to maximize both sensitivity and specificity at the same time point.

Discussion & Conclusion: We found that i-PTH was a predictor of hypocalcemia, and that the earliest predictor of hypocalcemic symptoms was an i-PTH concentration lower than 10.6 mg/dL obtained 6 hours after total thyroidectomy.