

次發性副甲狀腺功能亢進患者接受副甲狀腺切除術後發生嚴重低血鈣之預測因子分析

Predictors of Severe Hypocalcemia after Parathyroidectomy in Patients with Secondary Hyperparathyroidism

蔡萬全、陳泓源、楊如燁、邱彥霖、杜文志、董奎廷、張嘉峰、吳泓彥、徐世平、白玫芬、彭渝森

Wan-Chuan Tsai, Hung-Yuan Chen, Ju-Yeh Yang, Yen-Ling Chiu, Wen-Chih Dou, Kuei-Ting Tung, Jia-Feng Chang, Hon-Yen Wu, Shih-Ping Hsu, Mei-Fen Pai, Yu-Sen Peng

亞東紀念醫院腎臟內科

Division of Nephrology, Department of Internal Medicine, Far Eastern Memorial Hospital

**Background:** Hypocalcemia is one of the common complications after parathyroidectomy (PTX). Severe hypocalcemia (SH) can lead to tetany, seizures and cardiac arrhythmias. However, predictors for the development of SH in patients with secondary hyperparathyroidism remain unclear.

**Methods:** A retrospective chart review of 420 consecutive dialysis patients who underwent PTX during a 12-year period was performed. We checked serum levels of calcium (Ca), phosphorus (P), alkaline phosphatase (ALP) and intact parathyroid hormone (iPTH) for three consecutive days postoperatively. SH was defined as the minimum values of serum calcium lower than 1.875 mmol/L (7.5 mg/dl) within postoperative three days.

**Results:** The mean ( $\pm$  SD) age of study population was  $53 \pm 12$  years, and more than half (57%) were female. SH occurred in 37.3%. Using a multivariate logistic regression analysis, lower preoperative level of Ca (Odd ratio 0.01, 95% CI 0.003-0.062,  $P < 0.001$ ), higher preoperative levels of P (Odd ratio 1.70, 95% CI 1.03-2.79,  $P = 0.04$ ), ALP (Odd ratio 1.008, 95% CI 1.005-1.011,  $P < 0.001$ ), iPTH (Odd ratio 1.00, 95% CI 1.00-1.001,  $P = 0.07$ ), and higher decrease in calcium level in a day from the preoperative level (Odd ratio 6.90, 95% CI 1.58-30.26,  $P = 0.01$ ) were found to be independent predictors of development of SH following PTX.

**Conclusion:** The readily obtainable preoperative laboratory parameters including Ca, P, ALP, iPTH and greater decrease in Ca after surgery will allow identification of a subgroup of patients who are at greater risk for the development of SH following PTX.