

Hypocalcaemia management post parathyroidectomy in renal patients - A review of practice

Ms Tricia Tay¹, Dr Rajkumar Chinnadurai², Dr Tina Chrysochou², Ms Helen Doran³, Dr Smeeta Sinha²

¹University of Manchester, Manchester, United Kingdom, ²Renal Department, Salford Royal NHS Foundation Trust, Manchester, United Kingdom, ³Department of Endocrine Surgery, Salford Royal NHS Foundation Trust, Manchester, United Kingdom

Background and aims

Hypocalcaemia is a common post-parathyroidectomy complication in renal patients with secondary hyperparathyroidism. This is due to reduced parathormone (PTH) mediated calcium absorption in the kidneys and increased influx of calcium to bones. Our initial study in January 2015 showed preloading patients with one alfacalcidol 2 microgram once a day for 5 days preoperatively was ineffective in reducing hypocalcaemia related complications. We re-investigated the outcomes in patients following a change in practice to use one alfacalcidol 5 microgram once a day for 5 days preoperatively.

Method

All patients with pre-existing chronic kidney disease (CKD) who underwent parathyroidectomy by a single surgeon in our centre between March 2016 and October 2017 were included (12 patients). The outcomes (length of hospital stay and hypocalcaemia requiring IV calcium replacements) were compared with a previous study on patients operated on by the same surgeon between April 2008 and September 2014 (24 patients). Statistical analysis was conducted using Microsoft excel and SPSS version-22.

Results

Twelve patients were included in this study; 5 were females. Mean age at surgery was 54 (range 45-61) years. Eight patients were on long-term haemodialysis, 3 had a functioning renal transplant and 1 had CKD stage 5. Eight patients had been receiving cinacalcet for more than one month preoperatively. Mean length of stay (LoS) was 5.3 days (range 3-10), half (n=6) were discharged four days post-op. Ten had a total parathyroidectomy, of which half (n=5) were discharged after post-op day 4. Four patients were not preloaded with 5mcg as per protocol; reasons for non-adherence to the protocol included regular prescription of alfacalcidol and physician discretion to utilise a lower dose. Patients with lower pre-op corrected calcium levels (2.4-2.6 mg/dL) stayed for a mean of 6.74 days after surgery. This was a longer LoS compared to other calcium ranges. No hypercalcemia related complications were recorded. The need for post-operative intravenous calcium use decreased from 10/24 to 2/12. Despite more patients having total parathyroidectomy and being on dialysis, a smaller proportion required IV calcium in the post-operative phase, although this was not statistically significant due to the small sample size (p=0.26).

Conclusion

Our study highlights that the current practice of preloading one alphacalcidol 5 mcg once a day for 5 days preoperatively in renal patients undergoing parathyroidectomy appears to be a safe and effective approach. Ongoing monitoring and further studies on a larger cohort of patients is needed to strengthen these observations.