

Parathyroidectomy in Dialysis Patients: Calculated Risk Taking... Not Simply Skating on Thin Ice

Hyperparathyroidism, both secondary and tertiary, is associated with deleterious outcomes in patients receiving renal replacement therapy.¹ Though rates of hospitalization and treatment for hypocalcemic episodes are higher in the year following parathyroidectomy² and the results of this surgery with regard to mineral metabolism are often suboptimal,³ treating hyperparathyroidism with parathyroidectomy in chronic kidney disease (CKD) patients has been shown to reduce cardiovascular events and mortality.⁴ Parathyroidectomy in such a situation has also been shown to be more cost-effective when compared to medical management with calcimimetic agents like cinacalcet.⁵ Although practice guidelines provide direction as to when parathyroidectomy should be performed in CKD patients with renal hyperparathyroidism, uncertainty still prevails as to the risks of this operation in dialysis patients. This may result in undue concerns by nephrologists and surgeons involved in the care of the CKD patients. Wide geographic variation in performing parathyroidectomy on patients receiving hemodialysis has been reported in the United States in a large retrospective cohort analysis of 286,569 patients with a twofold difference in adjusted odds of parathyroidectomy found between the most and least frequently performing regions.⁶ Though this study did not elucidate in great detail the reasons underlying the disparity in performance of the surgery, it is likely that a paucity of knowledge of quantifiable risk regarding parathyroidectomy in dialysis patients may partly contribute to underperformance of parathyroidectomies. It is likely that there exists hesitancy and reluctance on the part of physicians to refer for and surgeons to perform parathyroidectomy in these patients. Knowledge of the quantifiable extent of clinical events that can occur post parathyroidectomy will assist in developing evidence-based risk/benefit determinations that may be of immense benefit when counselling dialysis patients who are being considered for parathyroidectomy. Understanding the relative risk of this procedure when compared with another procedure performed in CKD patients, i.e., arteriovenous fistula (AVF) creation will help to put things in perspective for patients and also help in decision-making.

In the current issue of this journal, Anderson et al⁷ using the large American College of Surgeons National Surgical Quality Improvement Program database have quantified the risks of cardiopulmonary complications and death in dialysis patients undergoing parathyroidectomy. In addition, in this retrospective study, they have also compared the relative risk of these complications occurring in patients undergoing AVF creation as opposed to those having parathyroidectomy. The investigators found that in patients undergoing parathyroidectomy, though being on dialysis was associated with an increased odds of death, an increased risk of having a complication, and a higher risk of having a cardiopulmonary complication at 30 days following the surgery; neither there was difference in the odds ratio of mortality when patients undergoing parathyroidectomy were compared to those undergoing AVF creation, nor was there a difference in odds ratio of cardiopulmonary complications between the two groups.

Clinical Implications

Though the study has some limitations including the availability of only 30 day outcomes and no long-term follow-up and the particular database used precluded elucidation of specific complications, such as, hypocalcemia or hungry bone syndrome that could have both impact on both short- and long-term cardiopulmonary complications; overall, the provision of a quantifiable risk of short-term cardiopulmonary morbidity and mortality following parathyroidectomy will be of use to clinicians while counselling patients. Providing the relative risks of parathyroidectomy as compared to a procedure that is routinely done in dialysis patients and one that many of these patients would have already undergone, i.e., AVF creation helps to provide a better perspective to the patient who may be in a dilemma as to whether to proceed with the surgery or not. The study provides an important contribution to the scientific literature on the subject.



References

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