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Continuous intravenous calcium replacement in a chronic kidney disease dialysis patient after parathyroidectomy: case report

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Introduction: Parathyroidectomy is a common treatment for secondary hyperparathyroidism in chronic kidney disease (CKD) patients. Postoperative management includes calcium, phosphate, and vitamin D replacement to prevent sudden parathyroid hormone deficiency and bone hunger syndrome.⁽¹⁻³⁾ This replacement can be done intravenously and orally.⁽⁴⁾ **Objective:** To report a case of continuous intravenous calcium replacement in a CKD patient after parathyroidectomy, with an emphasis on nursing and pharmacy care. **Methods:** Descriptive case report of a continuous intravenous calcium replacement strategy in a CKD patient on dialysis and post-parathyroidectomy at a quaternary hospital in the private healthcare network in São Paulo, in 2024. The study was conducted after obtaining informed consent from the patient. **Case Report:** An 84-year-old male, CKD patient on dialysis, with secondary hyperparathyroidism refractory to drug therapy, with a history of bone lesions. Underwent elective parathyroidectomy without complications, requiring continuous intravenous calcium replacement postoperatively. Replacement was performed by infusing a 500ml solution consisting of 240ml of 10% calcium gluconate 260ml of 0.9% SF at a rate of 5ml/h in an infusion pump, if ionized calcium <1.2. Oral calcium and vitamin D replacement was

also performed. **Results:** Continuous intravenous calcium replacement is uncommon in the institution's clinical practice and requires multidisciplinary care in preparation, administration, and maintenance. Among the pharmaceutical care, we can mention the analysis of the bag formulation, as well as the dose, frequency, infusion rate, stability, and total volume of the solution, prioritizing the minimum possible volume, due to the dialysis context. As for nursing care, we can mention double checking the administration of the solution, using an infusion pump, continuous cardiac monitoring, pausing the infusion during calcium collection and serial serum monitoring, as well as evaluating the Chvostek and Trousseau signs. Intravenous calcium infusion can cause risks, including altered consciousness and cardiac arrhythmias.⁽⁵⁾ Hospitalization in an Intensive Care Unit allows for adequate management of these risks and immediate intervention in case of complications, and also guarantees continuous calcium administration by infusion pump and strict patient monitoring. **Conclusion:** The proposed therapeutic strategy is a safe, effective, and appropriate option for the treatment of postoperative hypocalcemia after parathyroidectomy in special populations. The engagement of the multiprofessional team with an emphasis on pharmacists and nurses is essential to ensure patient safety and quality of care.

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