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Short Note on Post-operative Hypoparathyroidism

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Introduction

Hypoparathyroidism occurs when the parathyroid glands are unable to maintain calcium homeostasis due to a lack of PTH secretion or resistance. Transient and permanent hypoparathyroidism are most commonly seen as complications of neck surgery, resulting from parathyroid devascularization, unintentional resection, or parathyroid coagulation [1].

Description

Although treatment strategies for transient and permanent hypoparathyroidism differ, the classical approach involves calcium and vitamin D or analogue supplementation with the primary goal of achieving low normal serum calcium and normal serum phosphorus. There are several calcium and vitamin D preparations on the market for the treatment of symptomatic hypoparathyroidism [2]. It is critical to consider the pharmocodynamics, tissue potency, rapidity of action, and ease of reversal of toxicity when selecting the appropriate vitamin D sterol for treatment. The limitations of conventional therapy, such as a narrow therapeutic window and a proclivity for hypercalciuria and hypercalcemia, have prompted researchers to look into alternatives, such as PTH replacement and parathyroid gland autotransplantation.

If left untreated, post-thyroidectomy hypoparathyroidism is an unintended sequela that can cause transient or permanent symptoms ranging from tingling sensations to severe breathing difficulties. The incidence of iatrogenic hypoparathyroidism has been reported to range from 7% to 37%, a range that is too wide to be indicative [3]. This variation in incidence is caused not only by inter-operator variation, but also by differences in thyroid operations performed in different medical communities.

South Korea's thyroid surgery pattern differs slightly from that of the rest of the world. Because medical services are easily accessible to the general public in South Korea, thyroid cancer is often detected at an early stage, and its incidence is very high, at around 51.1 per 100,000 people in 2017. Furthermore, due to South Korea's high density and urban orientation, approximately 68.5 percent of thyroid cancer operations in 2019 were performed by high volume surgeons at tertiary medical centres [4].

The concentration of thyroid patients in large tertiary care centres suggests that a thorough analysis of their data can provide meaningful and generalizable results about the incidence of and risk factors for thyroid cancer and post-thyroidectomy hypoparathyroidism. Hospital-specific Clinical Data Warehouses (CDWs), which were created to help with data analysis, are platforms that are used to integrate complex data sources using specialised analytical tools. These in-hospital CDWs can be used for financial, administrative, clinical, and research purposes, including hypothesis generation and retrospective analysis [5]. However, combining CDW data from multiple tertiary centres necessitates the use of a Common Data Model (CDM).

Conclusion

Long-term vitamin D or analogue supplementation and oral calcium are the mainstays of postoperative hypoparathyroidism management; however, PTH replacement strategies with either PTH or parathyroid gland auto-transplantation are emerging as alternative strategies to avoid the complications of conventional therapy.

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