Post-Thyroidectomy Calcium Monitoring Guidelines

Section 1. Corrected* calcium level 6 hours post-op

A. Calcium < 7; or 7-7.4 mg/dL with symptoms of hypocalcemia
   i. Give calcium gluconate 1 gram (93mg elemental Ca++) in 100ml NS over 10 minutes
   ii. Start IV infusion of calcium gluconate (dose = 10mg/kg elemental calcium) in 1000ml NS or D5W over 12 hours
   iii. Start calcium carbonate 2500mg po BID
   iv. Start calcitriol 0.5mcg po BID

Check calcium 1 hour after infusion completed, and return to #1 above

B. Calcium 7 – 7.4 mg/dL without symptoms
   i. Start/continue calcium carbonate 2500mg po BID
   ii. Start/continue calcitriol 0.5mcg po BID
   iii. Go to Section 2

C. Calcium 7.5 – 7.9 mg/dL
   i. Start/continue calcium carbonate 2500mg po BID
   ii. Start/continue calcitriol 0.5mcg po BID
   iii. Go to Section 2

D. Calcium ≥ 8 mg/dL
   Go to Section 2

Initial Considerations
- Calcium, albumin, phosphate, and magnesium should be checked 6 hours post-op, again the following morning, and twice a day (approximately every 12 hours) until stable.
- Check calcium level stat if patient complains of circumoral numbness, or exhibits signs of chvostek’s or tetany.
- Severe hypocalcaemia can manifest as seizures, appearance of U waves or QT prolongation on EKG.
- Since ionized calcium levels are not available, calcium should be measured with concomitant albumin level, as hypoalbuminemia can cause falsely low calcium. To correct the calcium for the albumin, the following formula should be used:

* Corrected calcium = measured calcium + \[0.8 \times (4.0 - \text{measured albumin})\]

All calcium levels in this guideline are assumed to be corrected calcium levels
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Section 2. Corrected calcium level on post-op day 1 and Q12H thereafter

**ASSESS RESULT**

- **A. Calcium < 7; or 7-7.4 mg/dL + symptoms of hypocalcemia**
  - Return to Section 1 A. on page 1

- **B. Calcium 7 – 7.4 mg/dL without symptoms**
  - i. Start/continue calcium carbonate 2500mg po BID
  - ii. Start/continue calcitriol 0.5mcg po BID
  - iii. Monitor calcium BID
  - iv. If calcium persistently < 7.5mg/dL after 48 hours increase calcitriol dose to 1 mcg po BID

- **C. Calcium 7.5 – 7.9 mg/dL**
  - i. Start/continue calcium carbonate 2500mg po BID
  - ii. Start or decrease calcitriol dose to 0.25mcg po BID
  - iii. Monitor calcium BID
  - iv. If calcium level drops below 7.5 or does not increase above 7.9 by 48 hours increase calcitriol to 0.25mcg po BID
  - Continue to follow calcium level BID

- **D. Calcium ≥ 8 mg/dL**

**Follow-up Considerations:**
- If calcium levels fall below 7 mg/dL or patient develops symptoms at any time, return to Section 1 A.
- If calcium levels are ≥ 8.5 mg/dL on two consecutive checks, and patient is on calcitriol, decrease dose by 50%.
- Patient may be discharged if calcium 8.0 mg/dL or higher or has remained stable and patient is without symptoms (at discretion of provider)
- Patients discharged on calcium carbonate only should have follow-up calcium level drawn in one week.
- Patients discharged on calcium and calcitriol should have follow-up calcium drawn 2 days and 7 days after discharge.

**Additional Notes:**
- Magnesium should be monitored and replaced as needed (significant hypomagnesemia (magnesium levels < 1.1 mg/dL) can inhibit parathyroid hormone release.
- Hyperphosphatemia is primarily managed with phosphate binders (such as calcium carbonate); elevated phosphate suggests hypoparathyroidism as parathyroid hormone is needed for renal phosphate clearance.