

Secondary Hyperparathyroidism



PLAY PICMONIC

Characteristics

Hypocalcemia or Hyperphosphatemia

[Hippo-calcium-cow with Hiker-phosphate-P](#)

Hypocalcemia is the primary stimulus for increased secretion of parathyroid hormone, resulting in secondary hyperparathyroidism. Besides hypocalcemia, hyperphosphatemia can also induce parathyroid hormone secretion.

Increased Parathyroid Hormone (PTH)

[Up-arrow Parachuting-thigh-droid with Harmonica](#)

An increase in parathyroid hormone release due to external stimulation characterizes secondary hyperparathyroidism.

Increased Alkaline Phosphatase (ALK-P)

[Up-arrow Elk-P](#)

Increased alkaline phosphatase levels can be seen in patients with hyperparathyroidism due to high bone turnover from the increased parathyroid hormone.

Levels may be normal in primary hyperparathyroidism due to the presence of hypercalcemia. This is different from secondary, which presents with hypocalcemia resulting in an obvious increased alkaline phosphatase level.

Reactive Parathyroid Hyperplasia

[Reaction-hyped Parachute-thigh-droid Hiker-plates](#)

Reactive parathyroid hyperplasia occurs in response to increased PTH levels. These secretions are induced by hypocalcemia, hyperphosphatemia, and vitamin D deficiency.

Etiologies

Chronic Kidney Disease

[Crone Kidney](#)

Chronic kidney disease is the most common cause of secondary hyperparathyroidism. It occurs due to the failure of the kidney to excrete phosphate, resulting in hyperphosphatemia. This will lead to the secretion of parathyroid hormones.

Vitamin D Deficiency

[Viking Daisy locked up](#)

The low level of vitamin D on vitamin D deficiency will cause an increase in the PTH level, resulting in secondary hyperparathyroidism. In normal conditions, active vitamin D suppresses PTH secretion.

Diagnosis

Laboratory Tests

[Lab-coat and Test-tubes](#)

Laboratory tests are the primary tool for diagnosing a patient with suspected secondary hyperparathyroidism. Increased parathyroid hormone will indicate hyperparathyroidism. The difference between primary and secondary hyperparathyroidism is based on the serum level of calcium and phosphate. Calcium will be high in primary and low in secondary. Phosphate will be low in primary and high in secondary.

Management

Treat Underlying Disorder

[Treating Disorders Under the Table](#)

The primary treatment of secondary hyperparathyroidism focuses on treating the underlying disorder. Renal failure is treated by renal transplant, and vitamin D deficiency by increasing vitamin D to the normal range. If all of the treatments fail to cure the patient, medication and surgery could be used.

Phosphate Binders

[Phosphate Binder](#)

Initiation of phosphate binder treatment will help to reduce the high level of phosphate. These include calcium acetate, lanthanum, or sevelamer.

Vitamin D Supplements

[Viking \(D\) Daisy](#)

Active vitamin D compounds such as calcitriol can help increase calcium levels by improving the absorption of calcium and phosphorous in the gut. These will decrease the synthesis of parathyroid hormone.