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.

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.