



CHRONIC KIDNEY DISEASE

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Abstract

Chronic kidney disease (CKD): Kidney damage for ≥ 3 months, as defined by structural or functional abnormalities of the kidney, with or without decreased GFR *or* GFR < 60 mL/min/1.73m² for ≥ 3 months, with or without kidney damage

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phosphorus, and vitamin D. (Levin A. et al;2007) rHPT is associated with increased cardiovascular morbidity and mortality (De Boer IH, et al;2002) and has a significant economic burden on the US health care system (Lee A. et al;2013)

1. Introduction

Renal hyperparathyroidism (rHPT) is a common complication of CKD characterized by derangements in the homeostasis of calcium,

Stage	Description	GFR (ml/min/1.73 m ²)
1	Kidney damage with normal or ↑ GFR	> 90
2	Kidney damage with mild ↓ in GFR	60-89
3	Moderate ↓ in GFR	30-59
4	Severe ↓ in GFR	15-29
5	Kidney failure	< 15 (or dialysis)

Am J Kidney Dis 2002; 39:S1

- 1) Medical management of r HPT > 6 months with hypercalcaemia and hyperphosphatemia .
- 2) PTH >800 pg/ml.
- 3) Progressive extra-skeletal calcifications or calciphylaxis with documented elevated PTH levels and refractory hyperphosphatemia.
- 4) Osteoporosis (T-score >2.5 SD below mean) and pathological bone fractures.

2. References

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rHPT is classically broken into 2 types on the basis of the patient's serum calcium level. Secondary hyperparathyroidism (2° HPT) is the elevation of parathyroid hormone (PTH) in response to hypocalcaemia induced by phosphate retention and reduced calcitriol synthesis as a consequence of reduced renal function.(Martin KJ. et al;2007) In 2° HPT, all the parathyroid glands become enlarged owing to parathyroid hyperplasia. Because 2° HPT is a compensatory mechanism of the parathyroid glands, it commonly resolves with normalization of calcium and phosphorus homeostasis (eg, renal transplantation). Tertiary hyperparathyroidism (3° HPT) is seen when a patient with longstanding 2° HPT develops autonomous PTH secretion, often associated with hypercalcaemia. This is observed in up to 30% of patients with ESRD, who then undergo renal transplant. (Kerby J. et al;1998) 3° HPT is classically thought to have come from parathyroid hyperplasia, but some studies have suggested that up to 20% of patients may have single or double adenomas(Martin KJ. et al;2007).

Improving medical management with vitamin D analogs, phosphate binders, and calcimimetic drugs has expanded the treatment options for patients with rHPT, but parathyroidectomy remains necessary for many patients(Tominaga Y 2012).

Indications for parathyroidectomy in renal hyperparathyroidism(K/DOQI guidelines 2009):

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