

LONG-TERM CINACALCET TREATMENT RESULTS IN REGRESSION OF HYPERPLASTIC PARATHYROID GLANDS IN HEMODIALYSIS PATIENTS

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Introduction:

Secondary hyperparathyroidism is one of more frequent and serious complications in chronic kidney disease patients. Successful treatment of this condition in hemodialysis patients is a key factor contributing to their good health. A calcimimetic used in treatment – cinacalcet leads to both PTH level lowering and parathyroid glands size reduction.

Aim of the study:

The aim of the study was a 36-month-long evaluation of using cinacalcet in hemodialysis patients with secondary hyperparathyroidism and its influence on PTH level, number and size of parathyroid glands as well as certain parameters of calcium and phosphorus metabolism.

Patients and methods:

Population consisted of 10 patients (4 females and 6 males; mean age 62.7 years) with secondary hyperparathyroidism on hemodialysis averagely 42.3 months. The patients were qualified for cinacalcet treatment at iPTH level of >500pg/ml with poor calcium and phosphorus metabolism control despite using vitamin D and phosphorus binders. Calcium, phosphorus levels and Ca x P product were checked monthly, iPTH once every 3 months. Ultrasound exams for number and size of glands were performed at baseline, after 12, 24 and 36 months (USG Siemens X300, linear broadband 5-10MHz probe). Glands volume was derived from the equation $\pi/6 \times a \times b \times c$ (a,b,c standing for glands dimensions). Treatment started with 30mg once daily and the dose was modified once monthly based on lab results. Mean dose of cinacalcet over 36 months was 46mg daily.

Results:

Parameter (mean)	Baseline	After 12 months	After 24 month	After 36 months	p (for 0-)	p (for 0-12 m)
Ca (mmol/l)	2.27	2.17	2.03	2.31	NS	NS
P (mmol/l)	2.29	1.51	1.85	1.66	NS	<0.01
Ca x P (mmol²/l²)	4.77	3.28	4.25	3.83	NS	0.07
iPTH (pg/ml)	1039.5	337.4	437.6	319.84	<0.001	<0.01
Parathyroid gland number	1.9	1.1	0.7	0.9	<0.001	0.03
Size (mm³)	305.4	264.2	313.8	202.5	NS	NS

Phosphorus and iPTH levels, number of glands decreased within first 12 months in all patients. After 1 year of treatment no glands were seen in 3 patients and in 6 patients they became smaller. The size of parathyroid glands increased almost 3 times in 1 patient despite PTH level decrease. Side effects of treatment (nausea, diarrhea) occurred in 2 patients and caused dose reduction.

Conclusions:

Cinacalcet reduces iPTH level, improves calcium and phosphorus metabolism. The treatment leads to number and size reduction of hyperplastic parathyroid glands.

References:

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