FRESENIUS MEDICAL CARE

Secondary hyperparathyroidism treatment in chronic kidney disease patients on haemodialysis

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NephroCare

Presentation outline

Introduction

- **Hyperparathyroidism is the disease in which parathyroid hormones are secreted in excess of one or more of the four parathyroid glands of the body.**
- **They produce parathyroid hormone that helps maintain an adequate balance of calcium, necessary for tissues and blood.**
- **Secondary hyperparathyroidism (SHPT) is a hyperactivity in response to a hypocalcaemia, vitamin D deficiency, or renal failure.**

Introduction

- **Secondary hyperparathyroidism (SHPT) is one of the most important complications in chronic kidney disease (CKD) patients on haemodialysis with a significant impact on the bone and cardiovascular morbidity.**

- **Calcimimetic therapy has improved the biological, clinical and histopathological parameters of haemodialysis patients, thus reducing the percentage of surgery involving the parathyroid gland.**

Objectives

- **To reduce the serum level of intact plasma (iPTH) to target values (150-300pg/ml) in dialysed patients with SHPT by prevention of adynamic bone disease (iPTH <100pg/ml).**
- **Prevention of extra phosphocalcic deposits**
- **Providing turn-over and appropriate mineralization of the bone structure**
- **Maintaining serum levels of Ca, P, i-PTH and VitD3 within the target limits.**

Methods

- **Patient selection criteria have been established:**

➢ **Major criteria:**

- **iPTH ≥ 800pg/ml**
- **Ca ≥ 10mg/dl**
- **P ≥ 5,5 mg/dl**

➢ **Minor criteria:**

- Post surgery relapse in patients who had paratiroideocthemia for secondary hyperparathyroidism

- **Hypercalcaemia persistent over 11mg/dl**

- **During 01.05.2015 and 01.05.2016 we investigated 17 patients with iPTH ≥ 800pg/ml, without parathyroid nodules as confirmed by ultrasound, under calcimimetic therapy for 12 months.**

Methods

- **Monthly blood samples were taken to determine the patients' iPTH levels, calcium and phosphorus serum levels.**
- **The calcimimetic was initiated at 30 mg/day and subsequently adapted depending on the iPTH values and was modified afterwards.**
- **The dialysis solution used was based on a physiological calcium concentration of 1.5 mmol/l.**

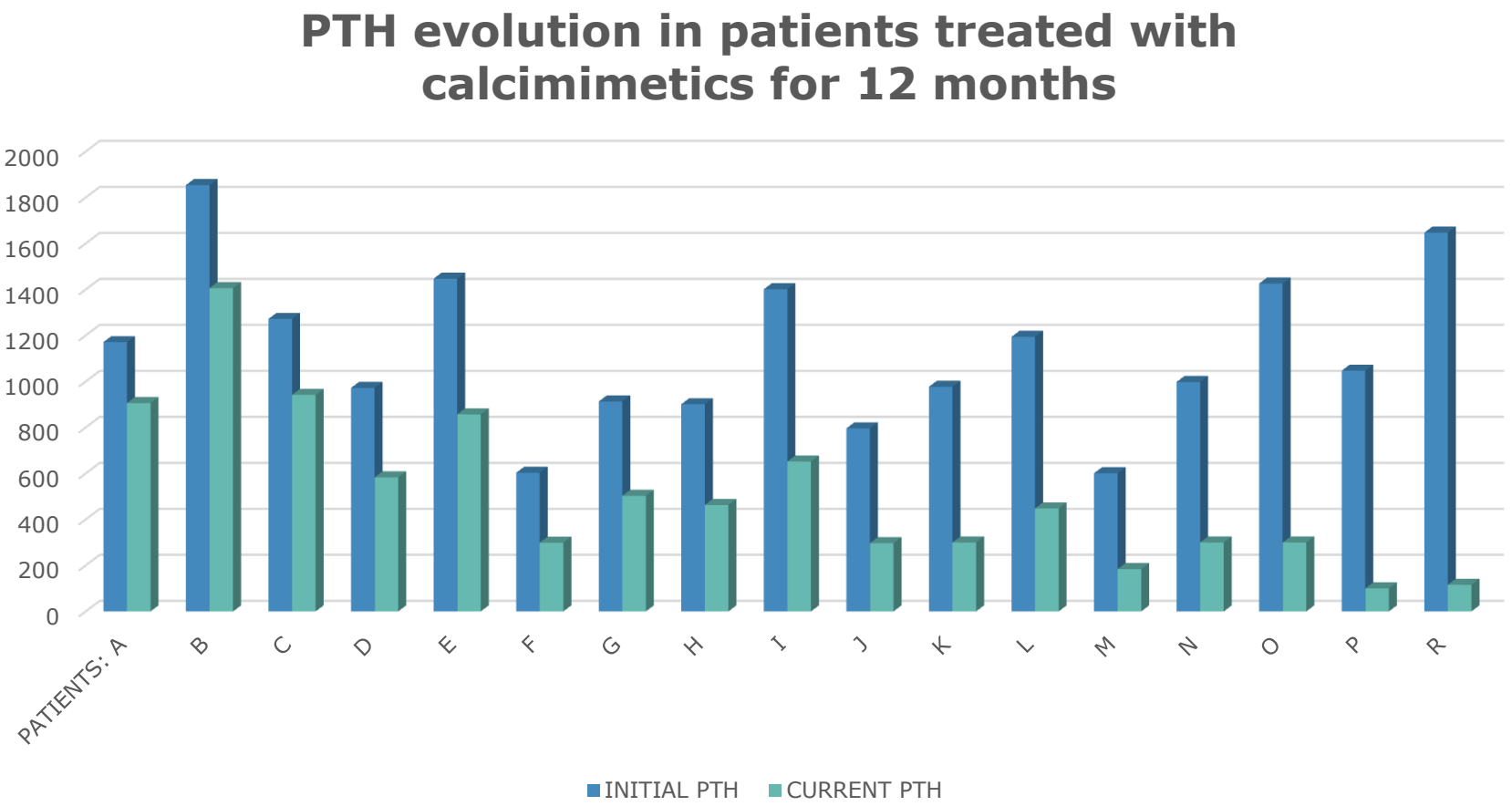
Results

- All the patients complied with the treatment.
- 1-3 months periodically PTH dosing showed a decreasing trend
- After 12 months, the iPTH level decreased to the target values in 8 patients (47%).
- The respective iPTH values were reduced by 42-93%.
- In 9 patients (53%) the PTH values decreased by 23-63%, but did not reach the target values.

Results

- **Symptomatic hypocalcaemia, as possible adverse reaction, was not observed.**
- **Gastric pain was reported in one patient, but it ceased after dividing the daily dose.**
- **One of the patients reacted favourably after 12 months of treatment - the values decreased suddenly from 1600 pg to 60 pg and these values have been normal until this moment.**

Results


PTH evolution in patients treated with calcimimetics for 12 months
2000
1800
1600
1400
1200
1000
800
600
400
200
0
PATIENTS: A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
R
INITIAL PTH
CURRENT PTH

Conclusions

- **Secondary hyperparathyroidism may cause hypercalcaemia, hypophosphataemia, hypercalciuria, and hyperphosphateuria.**

- **Long-term consequences can be: dehydration, renal lithiasis, hypertension, gastrointestinal disorders and sometimes psychiatric disorders.**

Conclusions

- Calcimimetics increase the sensitivity of calcium receptors in the parathyroid glands that regulate PTH secretion.
- By increasing the sensitivity of these receptors, cinacalcet leads to reduced PTH production by parathyroid glands.
- Reducing PTH levels also leads to a decrease in blood calcium.
- Calcimimetics might be a good therapeutic option in moderate and/or severe SHPT and might reduce the risk of vascular calcification, CKD-associated bone disease, and death of haemodialysis patients, significantly improving the life quality of the hemodialyzed chronic patient.

Thank You Very Much for Your Attention!

Acknowledgments

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