

SERUM 25-HYDROXYVITAMIN D ON CHRONIC KIDNEY DISEASE STAGE 5D- EFFECTS OF SUPPLEMENTATION WITH CALCIFEROL

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OBJECTIVES

1-To study evolution of Hypovitaminosis D (HyD), on CKD stage 5D, on patients undergoing HD or PD, supplemented with oral doses individualized (daily dosis 100 UI to increase 0,7ng/ml of calciferol(D3) to reach serum levels of 30ng/ml).

2- To analyze serum levels at times: 3mo; 6mo; 9mo.

3-To compare incidence of HyD baseline (BL); and outcome after supplementation on PD and HD,

METHODS

- 69 patients were evaluated.
- Serum levels of parathormone (PTH), Calcium (Ca), alkaline phosphatase (AP), phosphorus (P) and (25OHD) was expressed as mean \pm SD.

Table 1 – Variables evaluated at 0 mo (baseline): 69 patients

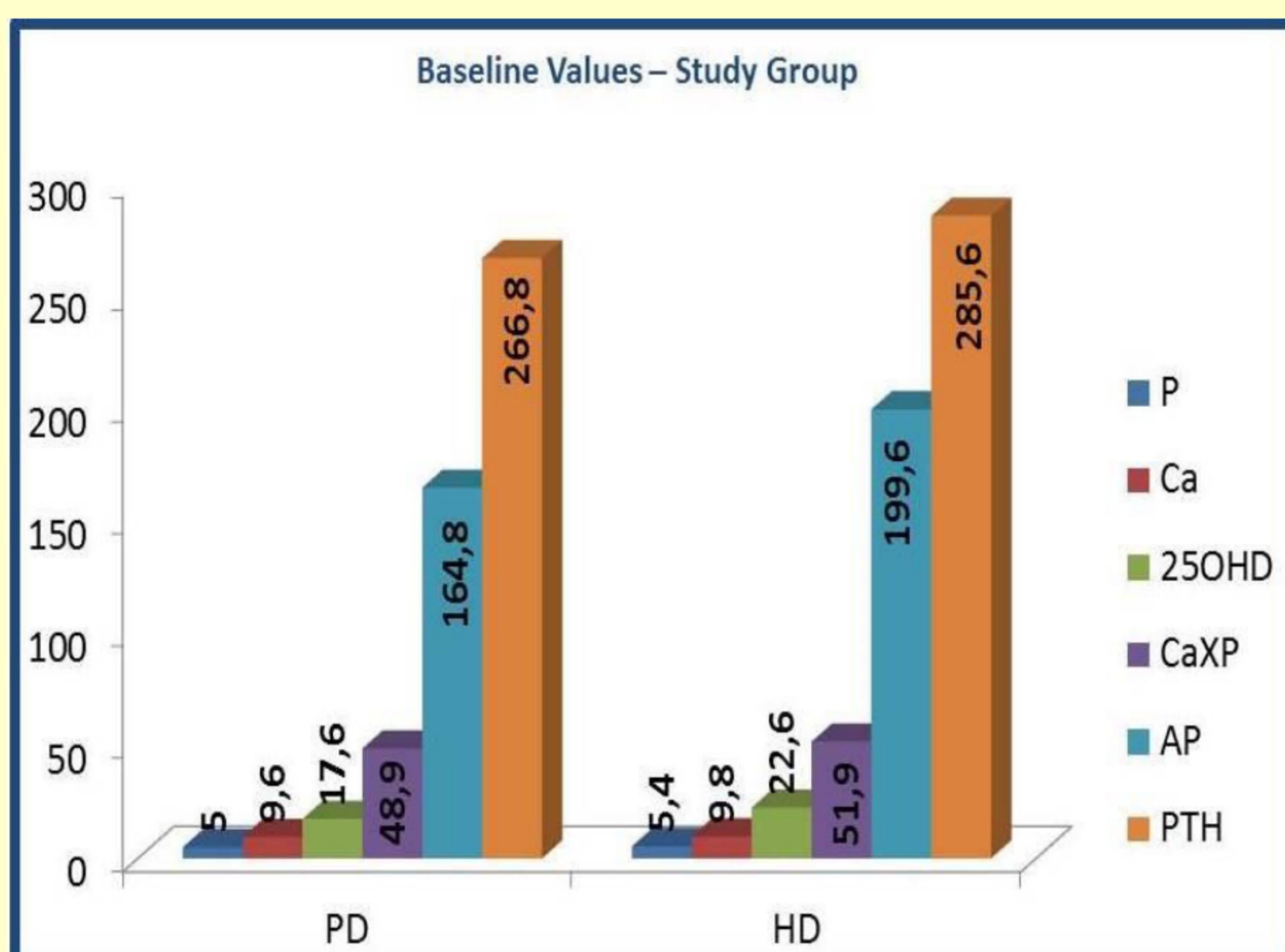
| Variables | HD | PD |
|--------------------------------------|---------------|-----------------|
| Male | 62.20% | 37.80% |
| Female | 62.50% | 37.50% |
| Normal 25OHD | 13.30% | 4.77% |
| HyD | 86.70% | 95.23% |
| Mean Age | 53 \pm 16.9 | 68.3 \pm 14.1 |
| Adinamic bone disease (ABD) | 31.10% | 29.20% |
| Secondary hyperparathyreoidism (SHP) | 35.60% | 20.80% |
| Control group | 31.10% | 12.50% |
| Study group | 68.90% | 87.50% |

RESULTS

HD: 25 patients were supplemented, 48% male, with mean age 53 \pm 16.9.

PD: 15 supplemented patients, 62.5% male, mean age 68.5 \pm 12.3.

Figure 1 – Biochemical baseline values



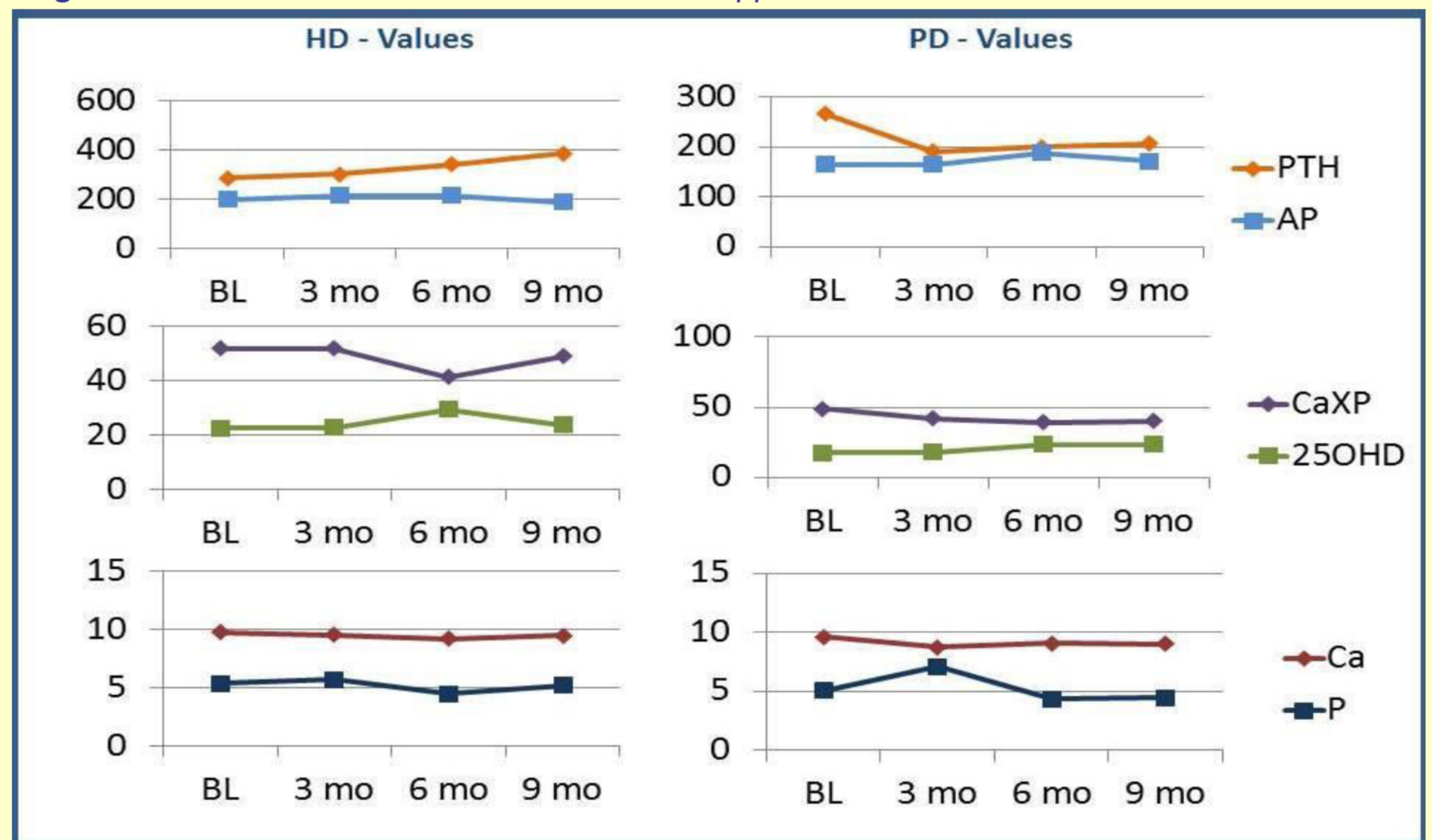
PD x HD: PD: 25OHD-BL showed lower levels than on HD ($p < 0.03$), as well PTH 6mo ($p < 0.04$) and PTH 9mo ($p < 0.02$).

The main source of 25OHD is synthesis promoted by ultraviolet radiation and low sun exposure contributes to HyD on HD e PD, as was confirmed in winter, by decreased values of 25OHD: 20% on PD and 55% on HD supplemented patients.

HD: 20% of control group and 26% supplemented reached normal levels increasing from BL ($p < 0,004$) mainly on males ($p < 0.03$) and older ($p < 0.04$), although it showed an increase of PTH: BL-9mo and 3-6mo ($p < 0.04$). Ca: BL-6 mo decreased ($p < 0.05$). CaXP: values decreased ($p < 0.002$); increased on supplemented patients at 9mo comparing to control ($p < 0.004$). P: decreased ($p < 0.003$); increased on supplemented comparing to controls ($p < 0.007$). PTH: values increased ($p < 0.003$).

PD: 0% of control and 38% of supplemented, reached 25OHD normal values after 6mo of treatment; increasing at 9mo comparing to BL ($p < 0.03$); mainly on males ($p < 0.003$) and older ($p < 0.04$). Ca at 9mo was lower than BL ($p < 0.04$).

Figure 2 – Serum levels evolution with calciferol supplementation



CONCLUSIONS

CKD stage 5D presents high prevalence of HyD, which may manifest itself more seriously in PD, justified by older age. This study was performed in a region with high level of ultraviolet radiation, consequently it may have been minimized the severity of HyD. Considering the incidence of BMD and based on these results, we suggest:

- 1-Supplementation of 25OHD should have a different approach from general population, individualizing doses.
- 2-To find out a minimal dose for maintenance therapy.
- 3-To proceed to six mo serum controls after standardization of 25OHD, having a measure preceding winter.
- 4-To have a special care on females, PD, older and should be monitoring carefully patients with high P or PTH.

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