Transperitonal calcium balance with the use of low-calcium peritoneal dialysis solution in **peritoneal dialysis** patients.

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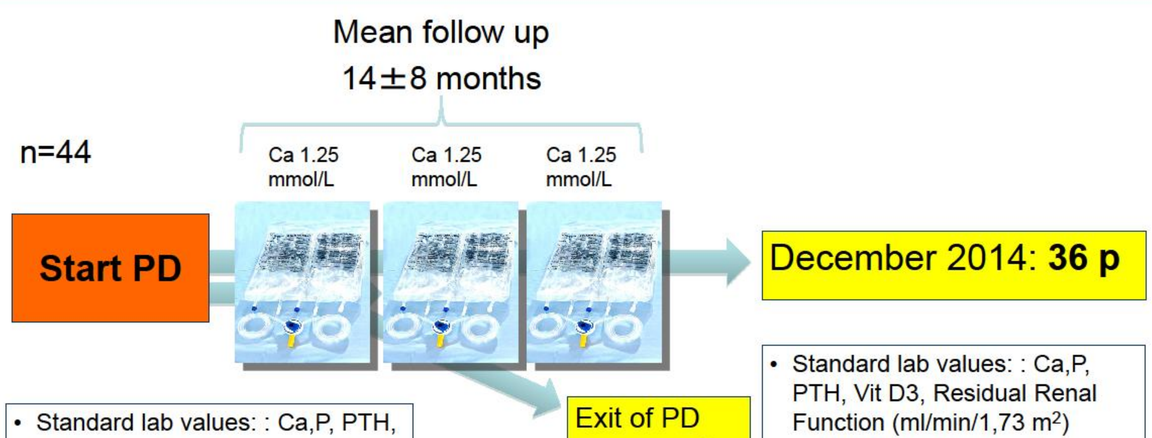
Introduction

- Despite that guidelines recommend the use of low-calcium peritoneal dialysis solution, its use is not very extended in the current practice.

Objectives

- Analyse the effect of low-calcium peritoneal dialysis solution on the mineral metabolism and the transperitoneal balance of calcium on a cohort of patients that started Peritoneal Dialysis (PD).

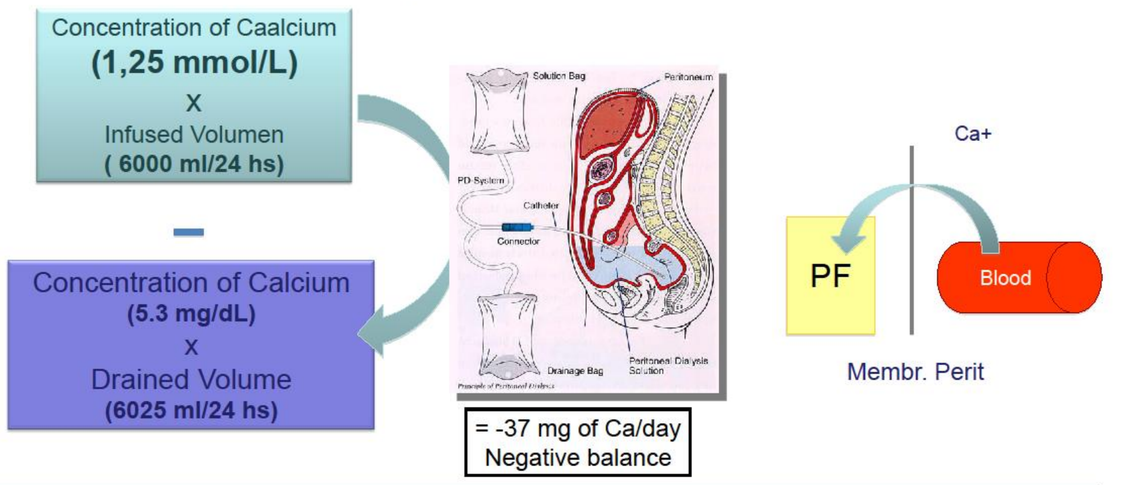
Methods



We did not included in the study 2 patientes with hipocalcemia (Ca <7.5 mg/dl) at start of PD.

- Prospective observational study of 44 patients starting PD between May 2012 to September 2014.
- We compared data after one year

The **transperitoneal calcium balance** was calculated on the 24 hours peritoneal effluent collection according to the formula for peritoneal mass transfer as: (Concentration of Calcium x Drained volume)−(Concentration of Calcium x Infused volume).



= -37 mg of Ca/day
Negative balance

Results

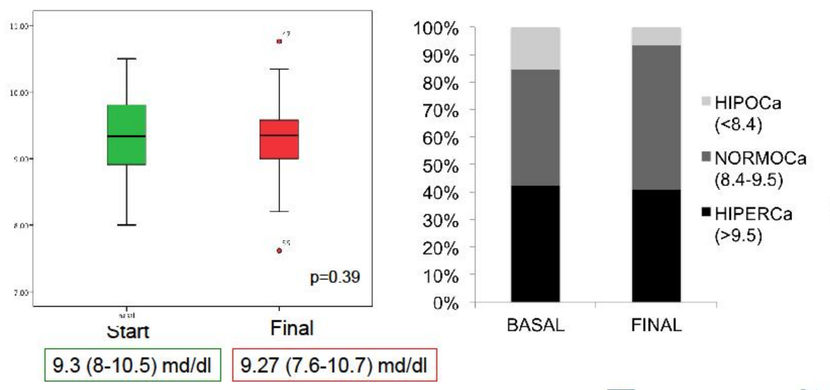
Patients caracteristics:

Age (years)	55.2
Gender (% male)	60
Hemoglobin (gr/dL)	11,4 ± 1.2
Ca mg/dL	8.7 ± 0.64
Albumin	3.6 ± 0.3
Corrected Calcium (Alb)	9.3 ± 0.6
PTH pg/mL	254 ± 148

RRF at start of PD (ml/min/1.73m2)	7.2
Renal Kt/v	1.5 ± 0.7
Peritoneal Kt/v	1.1 ± 0.37
CCr renal (L/week)	74 ± 37
CCr peritoneal (L/week)	30.7 ± 12

There was not any episode of symptomatic hypocalcemia.

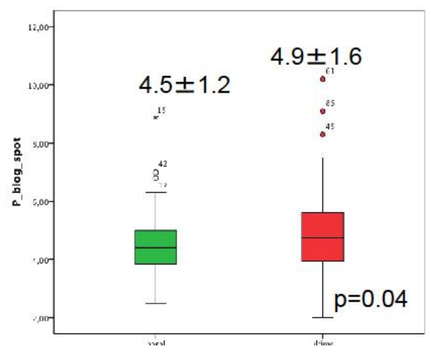
Calcium mg/dL



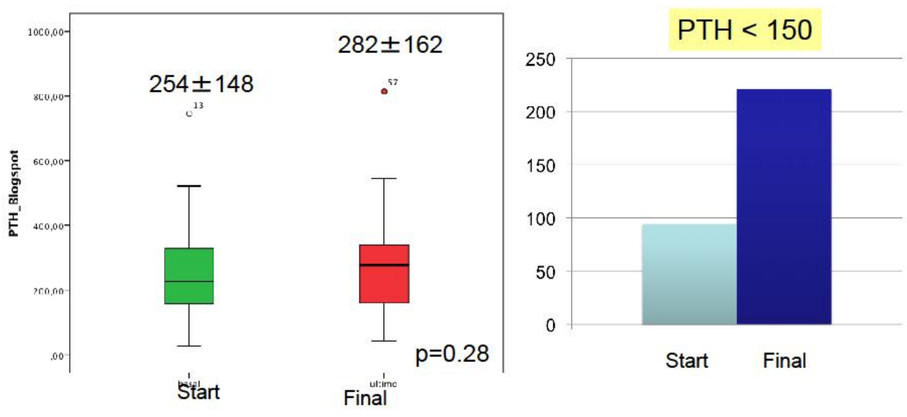
9.3 (8-10.5) md/dl

9.27 (7.6-10.7) md/dl

Phosphorous (mg/dL)

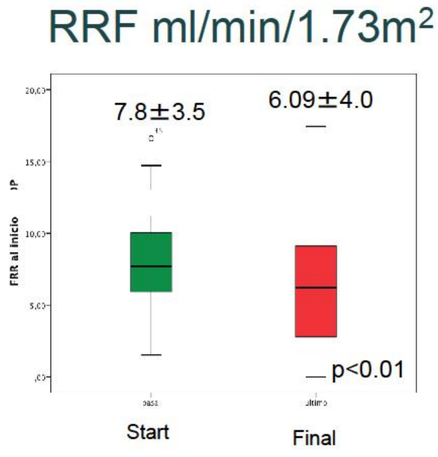


PTH (pg/mL)

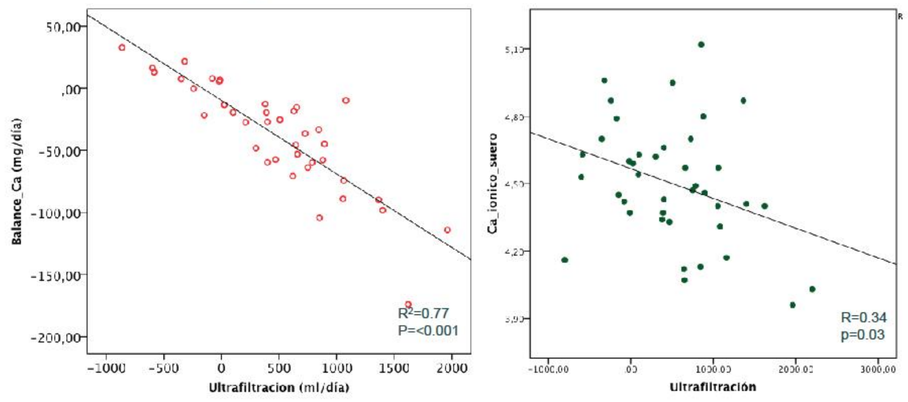


PTH < 150

RRF ml/min/1.73m2



Transperitoneal calcium balance



Higher ultrafiltration was positively correlated with a higher negative balance of calcium and with higher loss of ionized calcium in the peritoneal fluid

There were no statistically significant differences on the transperitoneal calcium balance depending on:

- Serum calcium at start on PD
- Peritoneal Transport (D/P cr 4 hs PET)

Conclusions

- In our patients, the use of low calcium PD solutions has been safe
- It has been associated with an increase of PTH, but remaining within target ranges.
- It could be a treatment for stimulating PTH in patients with low PTH, on risk for adinamic bone disease.
- It has been asociated with a minimun negative calcium balance.
- Higher ultrafiltration was associated with higher loos of calcium in the peritoneal effluent.
- Our results support the guidelines of the use of low calcium dialysate in peritoneal dialysis.

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