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Microalbuminuria, another use for paricalcitol? Our experience in advanced chronic kidney disease

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To the Editor,

Albuminuria increases the risk of progression of renal failure (RF), even in advanced stages.[1] Renin-angiotensin-aldosterone system (RAAS) inhibitors are the main tool used for reducing albuminuria and slowing the progression of RF, although this treatment is often insufficient.[2] Recently, paricalcitol has been proven effective in reducing albuminuria in certain patients.[3]

The aim of our study was to assess the usefulness of paricalcitol to reduce albuminuria in patients with stage 4-5 RF.

Method: We included all patients referred to the predialysis unit. Patients were administered paricalcitol at an initial mean dose of 1±0.3Ìg/day orally, adjusted for calcium/phosphorous metabolic parameters. Follow-up continued for at least 6 months, with three visits every 2 months, in which albuminuria, MDRD, and calcium/phosphorous metabolism parameters were registered. Treatment with RAAS inhibitors and hidroferol continued without change. Statistical analysis: we used analysis of variance for comparing the means of quantitative variables, Wilcoxon tests for comparing medians, and chi-square tests to compare percentages.

Results: Our study included a total of 40 patients, 67% males, with a follow-up period of 135-235 days. Baseline MDRD was 19.5±3ml/min, 97.5% of patients had hypertension, and 35% were diabetic. Mean urine albumin-to-creatinine ratio (UACR) was 1932±1641mg/g. Initial calcium-phosphorous metabolism parameters were: calcium: 8.8±0.5mg/dl; phosphorous: 4.5±0.5mg/dl; intact parathyroid hormone (iPTH): 473±143pg/ml. At the start of the follow-up period, 25% of patients received angiotensin-converting enzyme inhibitors, 42.5% angiotensin receptor blockers, 55% hidroferol, and 12.5% calcitriol. During the follow-up period, we observed a significant decrease in MDRD (19.5±3ml/min vs 17.3±3.4ml/min; *P*=.003). There was also a decrease in iPTH and an increase in calcium, both significant results (473±143pg/ml vs 197±88pg/ml, and 8.84±0.5mg/dl vs 9±0.4mg/dl; *P*=.00 and *P*=.01, respectively). We also observed an increase in phosphorous, although this was not significant (4.5±0.5mg/dl vs 4.8±0.6mg/dl; *P*=.1). UACR decreased over the course of the study from an initial mean value of 1932±1641mg/g to the final mean value of 1417±1284mg/g, a 27% decrease (*P*=.1). In the group of patients with higher initial UACR values (>3000mg/g), the decrease was significant (4258±944mg/g vs 2786±1630mg/g; *P*=.03). We observed an increase in patients with normalised albuminuria and a decrease in those with albuminuria >3000mg/g. UACR was not associated with treatment with RAAS inhibitors, hidroferol, or calcitriol. In no cases was suspension of treatment necessary due to altered calcium/phosphorous metabolism or secondary side effects, although 17% of patients required dosage adjustments.

Our study shows that treatment with paricalcitol in this group of patients is associated with a significant decrease in UACR, leading to a higher proportion of patients with normal excretion of albumin, in addition to providing better control of bone metabolism. The effect was greatest and most significant in patients with higher initial albumin excretion levels, which is the group with the highest risk for progression of RF.[4]

It may be that the small sample in our study was insufficient to demonstrate the antiproteinuric effects of this treatment with a greater level of significance. We may not have observed significant results in the control of renal function deterioration because of this same reason. Although it was not an objective of this study, we should also keep in mind the decreased cardiovascular risk associated with reduced UACR.

Conclusion: Paricalcitol can be effective in halting proteinuria in patients with stage 4-5 chronic renal failure disease and controlling secondary hyperparathyroidism. Its efficacy in preventing the progression of IR must be verified in future studies.

Conflicts of interest

The authors affirm that they have no conflicts of interest related to the content of this article.

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Monitoring haemodialysis in the Cabueñes Hospital

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To the Editor,

In 2007, the Quality Management Group from the Spanish Society of Nephrology proposed a system for monitoring haemodialysis with the objective of establishing a standardised protocol for implementation,[1] in accordance with the KDOQI guidelines from previous years.[2-5] In this context, we registered the data for our unit, which treats approximately 300 000 inhabitants, subtracting the 50% that undergo dialysis from the Spanish Red Cross, approximately 150 000 patients.

We included the information for all patients on dialysis in our hospital during 2011 in our analysis. This produced a total of 77 patients; of them, 31 were included in the study over the course of the year, yielding a final prevalence of 47 patients. The mean age was 68.07 years, 69% were male, and the treatment administered was primarily conventional haemodialysis with biocompatible filters. The distribution of renal diseases was similar to rates in previous studies, with a higher frequency of nephroangiosclerosis, diabetic nephropathy, and of an unknown aetiology, with similar percentages. We analysed the standard demographic and biological indicators related to dialysis treatment, anaemia, iron parameters, renal osteodystrophy, etc. We would also like to highlight certain characteristics of the patients who passed away, given their homogeneity.

The prevalence during 2011 is summarised in Table 1.

Some 30% of both prevalent and incident patients were diabetic, and 36% had a Charlson index >7. Only 3 patients underwent dialysis treatment more than 3 days per week, and none underwent less than 3 sessions per week. Gross mortality was 11.68%, with normal hospitalisation rates and duration of hospital stay. We observed positive results with permanent catheters: Kt/V (1.37)[6] (Table 2) was similar to rates with fistulas. Furthermore, there was a very low rate of infections (1 bacteraemia in 22 permanent catheters in place for at least 3 months). Values for renal osteodystrophy were acceptable,[7] with *P*<55 in 70%, CaxP<55 in 73%, and parathyroid hormone (PTH) <300 in 70%. There were no cases of PTH>800 + CaxP>55, thus no need for parathyroidectomy. All parameters for treated water and vaccinations were fulfilled without exception.[8] We were satisfied that 80% of the patients starting dialysis treatment were referred from specialists and only 20% from emergency departments (pericarditis, uraemic coma, etc., and some patients that abandoned regular visits). However, we were unable to reach adequate Hb levels (11-13g/dl) in 90% of patients, as is suggested by standard guidelines. We only reached adequate Hb levels in 55% of cases. Furthermore, despite having a predialysis unit for patients with renal failure, a catheter was needed in the first session in approximately 50% of patients, not always due to the lack of an established vascular access, but rather inadequate performance by the already created vascular access in elderly patients. We also failed to comply with the recommended fistula:catheter ratio, resulting in a 3/1 value.

The most interesting results were those aspects that deviated from guideline objectives: the only patients that died were older than 80 years (mean: 85 years); except for one case, none responded to vaccination; and in more than half of all deaths, the patient left treatment several days or weeks before dying, rather than prolonging regressive situations without recourse. However, the mean duration on haemodialysis in these patients that died was 21 months, which should be taken into account when evaluating patient age upon inclusion in the programme.

No patients included in the treatment programme produced unexpected emergencies, although 2 cases occurred in patients in predialysis (pulmonary oedema) and 4 life-threatening situations were produced in previously unknown patients.

Table 1. Prevalence during 2011

Prevalent on 31-12-2011	47	61.0%
Referred to Spanish Red Cross	11	14.3%
Referred to CAPD	3	3.9%
Trasplant recipients	7	9.1%
Deaths	9	11.7%
No. prevalent	77	100%

CAPD: continuous ambulatory peritoneal dialysis.