7. Wyatt CM, Klotman PE. HIV-associated nephropathy in the era of antiretroviral therapy. *Am J Med* 2007; 120 (6): 488-92.
8. Kimmel PL, Mishkin GJ, Umana WO. Captopril and renal survival in patients with human immunodeficiency virus nephropathy. *Am J Kidney Dis* 1996; 28 (2): 202-8.

R. Valero, E. Rodrigo, C. Piñera and M. Arias
Servicio de Nefrología. Hospital Universitario Marqués de Valdecilla.
Correspondence: *Rosalía Valero San Cecilio. rosaliavalero@yahoo.es. FRIAT. Centro de Diálisis Los Llanos. C/ Fragata, 21. 28222 Majadahonda. Madrid. España.*

Psychotropic drugs and peritoneal dialysis

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To the editor: Patient acceptance of chronic disease often involves adjustment problems and thus anxiety-depressive disorders in reaction to the new situation. These problems in turn can be aggravated by situations of physical dependency typically found in patients suffering from multiple disease processes.

Patients with chronic kidney disease subjected to dialysis moreover often experience insomnia, which reduces their quality of life and increases the mortality risk.[1] Restless legs syndrome is common in uremic patients, and worsens at night – preventing adequate sleep and constituting a mortality risk factor.[2] On the other hand, it is known that worsened quality of sleep during the first year on dialysis is associated with a shortened life expectancy.[3]

The use of benzodiazepines, which are the most widely used drugs for treating anxiety, is common in patients on dialysis. Their use is associated with important patient mortality.[4-5]

The present study analyzes physical dependency, comorbidity, the frequency of anxiety-depressive disorders, and sleep disturbances, as well as psychotropic drug consumption (benzodiazepines, non-benzodiazepinic hypnotics and antidepressants) among all patients in our Peritoneal dialysis Unit.

To this effect, we analyzed all our patients included in the peritoneal dialysis program of our Unit, with determination of the Barthel index (dependency scale for basic daily life activities), the Charlson-Bedhu comorbidity scale, and the Hamilton anxiety-depression scale. Prescribed treatment was reviewed to determine psychotropic drug consumption frequency.

There were 10 patients with a mean age of 56 ± 16 years (range 33-77). The mean duration of enrollment in the peritoneal dialysis program was 12.85 ± 12.14 months (range 1-36). Forty percent of the patients were on ambulatory continuous peritoneal dialysis and 60% on automated peritoneal dialysis. The mean modified Charlson comorbidity score was 5.5 ± 2.14 (range 4-11). According to the Barthel index, 10% of the patients showed severe dependency (35 points), 20% mild dependency (75 and 85 points), and the rest (70%) no dependency (100 points). The Hamilton anxiety-depression scale in turn indicated that 20% of the patients suffered anxiety (> 8 points), while 10% scored in the depression range (> 18 points). As regards insomnia, 50% had no sleeping difficulties. The remaining 50% tended to wake up at night, and 30% were unable to fall sleep again afterwards. Psychoactive drug consumption showed two patients to use benzodiazepines, one consumed zolpidem, one used antidepressants, and another antidepressants and benzodiazepines.

It can be concluded that our patient population suffered medium-high morbidity. Most of the patients (70%) were independent for activities of daily living. Thirty percent of our patients suffered some anxiety-depressive disorder. Insomnia was found to be very common (50%). Finally, psychotropic drug use was quite common - 50% of our patients being shown to use some drug of this kind.

1. Elder SJ, Pisoni RL, Akizawa T, Fissell R, Andreucci VE, Fukuhara S, Kurokawa K, Rayner HC, Furniss AL, Port FK, Saran R. Sleep quality predicts quality of life and mortality risk in haemodialysis patients: results from the Dialysis Outcomes and Practice Patterns Study (DOPPS). *Nephrol Dial Transplant* 2008; 23 (3): 998-1004.
2. Kavanagh D, Siddiqui S, Geddes CC. Restless legs syndrome in patients on dialysis. *Am J Kidney Dis* 2004; 43 (5): 763-71.
3. Unruh ML, Buysse DJ, Dew MA, Evans IV, Wu AW, Fink NE, Powe NR, Meyer KB. Choices for Healthy Outcomes in Caring for End-Stage Renal Disease (CHOICE) Study. Sleep quality and its correlates in the first year of dialysis. *Clin J Am Soc Nephrol* 2006; 1 (4): 802-10.
4. Winkelmayer WC, Mehta J, Wang PS. Benzodiazepine use and mortality of incident dialysis patients in the United Status. *Kidney Int* 2007; 72 (11): 1388-93.
5. Fukuhara S, Green J, Albert J, Mihara H, Pisoni R, Yamazaki s, Akiba T, Asano Y, Saito A, Port F, Held P, Kurokawa K. Symptoms of depression, prescription of benzodiazepines, and the risk of death in hemodialysis patients in Japan. *Kidney Int* 2006; 70 (10): 1866-72.

A. Sastre López, M. R. Bernabéu Lafuente, M. V. Íñigo Vanrell and J. M. Gascó Company
Servicio de Nefrología. Hospital Son Llátzer. Palma de Mallorca.
Correspondence: *Aránzazu Sastre López. aranchasastre@hotmail.com. HUCA. Avda. Fernández Ladreda, 30. 24005 León. España.*

Topiramate-induced renal tubular acidosis. A case report

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To the editor: Topiramate is an antiepileptic drug also used to treat bipolar disorder, neuropathic pain and migraine. The potential side effects of the drug include metabolic acidosis due to renal bicarbonate loss and the accumulation of CO_2 in the brain, as a result of its inhibitory action upon carbonic anhydrase (renal and located in the microglia, myelin and choroid plexus).

We report the case of a 58-year-old male with a history of absence-type epilepsy subjected to treatment with topiramate (150 mg/day) for the past 10 years. He also presented chronic renal failure (CKF) not subjected to evaluation and with baseline serum creatinine 2 mg/dl, hypersomnolence under study, and pulmonary thromboembolism (PTE) secondary to deep venous thrombosis (DVT) in the right leg due to trauma, in 1981. The patient was admitted to the Service of Pneumology diagnosed with bilateral PTE associated to DVT. The Service of Nephrology was consulted due to the sustained presence of acidosis.

The complementary explorations revealed the following:

The complete blood count and baseline coagulation parameters were normal. Urea 66 mg/dl, serum creatinine 2.3 mg/dl, creatinine clearance 35 ml/min., Na 145 mEq/l, K 4.8 mEq/l, Cl 109 mEq/l, PTH 92 pg/ml. The studies of hypercoagulability and autoimmunity proved negative. Twenty-four hour urine showed: pH 8, rest normal or negative, urine creatinine 38.1 mg/dl, proteins 0.5 g/d, urine Na 76 mEq/l, urine K 17.2 mEq/l, urine Cl 74 mEq/l. The urine sediment was normal. Abdominal ultrasound: a single left kidney measuring 12.6 cm in size, with loss of cortico-medullary differentiation. The echo-Doppler findings in the lower extremities were compatible with DVT, and computed tomographic angiography showed signs typical of bilateral PTE. Polysomnography revealed episodes of hypopnea and hypoventilation, without apnea. The observed pattern was not suggestive of obstructive sleep apnea syndrome (OSAS). The evolution of the blood gas parameters was as follows:

– Upon admission (arterial): pH 7.26, PCO_2 32.4, PO_2 68.4, HCO_3 14.4, base excess 11.2

– After anticoagulation (venous): pH 7.11, PCO_2 59.4, PO_2 22.4, HCO_3 21.9, base excess 6.1

– After start of treatment with BiPAP and bicarbonate: pH 7.27, PCO_2 44.8, PO_2 14.9, HCO_3 17.9, base excess 3.9

– Following the start of bi-level positive airway pressure ventilation (BiPAP), bicarbonate treatment and the withdrawal or topiramate: pH 7.33, PCO_2 35.8, HCO_3 19.3. The GAP anion was normal in all cases (between 11-14).

With anticoagulation, the PTE tended to resolve. A renal biopsy was discarded, and stage III CKF secondary to diminished nephron mass and probable chronic interstitial nephropathy was diagnosed. BiPAP corrected the respiratory component of acidosis associated to central hypopnea, although GAP anion-normal hyperchloremic metabolic acidosis persisted. On administering bicarbonate, the tendency towards acidosis persisted, though to a lesser degree, and the pH was corrected upon suspending topiramate.

Topiramate, in the same way as acetazolamide, is a potent inhibitor of carbonic anhydrase (CA) isoenzymes II and VI – this being the mechanism considered to involved in the development of metabolic acidosis when this drug is used. We recommend to the monitorization of serum bicarbonate during topiramate treatment, particularly in patients with respiratory problems or renal failure.

1. Shank RP, Gardocki JF, Streeter AJ, Maryanoff BE. An Overview of the Preclinical Aspects of Topiramate: Pharmacology, Pharmacokinetics, and Mechanism of Action. *Epilepsia* 2000; 41: S3-S9.
2. Wilner A, Raymond K, Pollard R. Topiramate and metabolic acidosis. *Epilepsia* 1999; 40 (6): 792-5.
3. Ozer Y, Altunkaya H. Topiramate induced metabolic acidosis. *Anaesthesia* 2004; 59: 830.
4. Groeper K, McCann ME. Topiramate and metabolic acidosis: a case series and review of the literature. *Pediatric Anesthesia* 2005; 15 (2): 167-70.
5. Izzedine H, Launay-Vacher V, Deray G. Topiramate-induced renal tubular acidosis. *Am J Med* 2004; 116: 281-2.
6. Montenegro MA, Guerreiro Marilisa M, Scotoni AE et al. Predisposition to metabolic acidosis induced by topiramate. *Arq Neuro-Psiquiatr* 2000; 58 (4): 1021-4.
7. Burmeister JE, Pereira RR, Hartke EM et al. Topiramate and severe metabolic acidosis: case report. *Arq Neuro-Psiquiatr* 2005; 63, (2b): 532-4.
8. Dogson DJ, Shank RP, Maryanoff BE. Topiramate as an inhibitor of carbonic anhydrase isoenzymes. *Epilepsia* 2000; 41: 3-39.

S. Sujan[1], A. Torres de Rueda[1], L. Montero[2], R. Toledo[1], S. Ros[2] and G. Martín Reyes[2]

[1]Servicio de Nefrología. Hospital Carlos Haya. Málaga. [2]Servicio de Medicina Interna. Hospital Axarquia. Vélez-Málaga. Málaga.

Correspondence: *Álvaro Torres de Rueda. atorresnefro@yahoo.es. Hospital Carlos Haya. Avda. Carlos Haya, s/n. 29010 Málaga. España.*

Enema in a patient with renal failure: a cause of severe hyperphosphatemia

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To the editor: The use of phosphorus (P)-containing enemas is common practice as preparation for colonoscopy and for other applications (constipation, preoperative or pre-radiological intestinal cleansing), with generally unknown side effects. In patients with renal failure, such enemas can produce severe hyperphosphoremia,[1,2] as in the case described below.

A 79-year old woman reported with abdominal pain and bloating, associated to constipation for the previous week. She had a history of arterial hypertension, diabetes mellitus, anemia, osteoporosis and cognitive deterioration. There were no data indicative of renal failure. Treatment consisted of metformin, insulin, indapamide, amlodipine, sertraline, omeprazole, tramadol, paracetamol, risedronate and ferrous sulfate. The physical examination revealed the following: good hydration with blood pressure 150/70 mmHg, severe abdominal bloating with pain in response to palpation, no defensive reaction or peritonism and metallic sounds. There were no other findings of interest. The abdominal X-rays revealed important colon dilatation without evidence of obstruction, while the CAT scan showed important dilatation from cecum to rectum, suggestive of acute colon pseudo-obstruction or Ogilvy's syndrome (fig. 1). The laboratory tests revealed the following: glucose 153 mg/dl, urea 186 mg/dl, creatinine 3.5 mg/dl, Na 140 mEq/l, K 5.7 mEq/l, and a urinary sediment with leukocyturia and bacteruria. Colonoscopy confirmed the above mentioned diagnosis, as a result of which decompression was carried out with the aspiration of 2000 ml of fecaloid fluid. During the first few days of admission the patient failed to improve; a rectal tube was thus placed for the instilment of four 250-ml Casen® enemas. A few hours later the patient suffered obnubilation and generalized tetany. Emergency laboratory testing revealed the following: urea 104 mg/dl, creatinine 2.7 mg/dl, Na 161 mEq/l, K 2.4 mEq/l, Ca 5.3 mg/dl, P 22 mg/dl and venous blood gases indicating pH 7.6, bicarbonate 12.8 mEq/l and pCO_2 13 mmHg. In view of these clinical and laboratory test data, dialysis was indicated but rejected by the