

60 ml/min) and potassium 5.7 mmol/dl (Fig. 1). Re-interrogated recognized the milk intake supplemented with calcium on a regular basis. Hydrochlorothiazide was changed to torasemide, 5 mg/24 h, it was recommended to increase the water intake and to restrict dairy products and the serum calcium decreased to 10.4 mg/dl (Fig. 1). Renal function remained stable after the slight drop in the eGFR (Fig. 1) with a significant decrease in albuminuria and good metabolic control.

The patient was diagnosed of moderate hypercalcemia related to the use of SGLT2 inhibitors that resolved after removal of other factors favoring hypercalcemia which allowed to maintain the medication.

We describe a case of hypercalcemia associated to dapagliflozin in a patient with other risk factors to develop hypercalcemia: Thiazides and high calcium intake.

The iSGLT2 have effects on calcium-phosphorus metabolism because they induce increased tubular reabsorption of phosphorus,<sup>1</sup> but there are no cases reported in the literature of hypercalcemia attributable to dapagliflozin to date. In preclinical studies, some iSGLT2 inhibitors induced mild increases in calcemia, an effect attributed to a partial inhibition of intestinal SGLT1 receptors. The malabsorption of carbohydrates causes a decrease in intestinal pH and an increase in intestinal calcium absorption.<sup>3</sup> However, subsequent safety studies have not observed significant electrolyte alterations in relation to these drugs.<sup>4</sup> Only one case of severe hypercalcemia has been described in relation to the use of canagliflozin in a patient with high oral calcium intake, severe volume depletion and diabetic ketoacidosis.<sup>3</sup> In the case presented here, the occurrence of hypercalcemia is probably due to the concurrence of several factors: food intake supplemented with calcium, decreased renal excretion due to thiazides and increased intestinal absorption induced by dapagliflozin.

This is the first case described of hypercalcemia associated with the use of dapagliflozin. In view of the data published in

the literature, this should be a rare side effect that requires the concurrence of other factors that induce hypercalcemia. The severity of the condition was mild and did not require the suspension of the drug.

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María Marques Vidas<sup>a,b,\*</sup>, Beatriz Dura Gurrpide<sup>a</sup>, Esther Rubio<sup>a,b</sup>, Ana Huerta<sup>a,b</sup>, José Portolés Pérez<sup>a,b</sup>

<sup>a</sup> Servicio de Nefrología, Hospital Universitario Puerta de Hierro-Majadahonda, Majadahonda, Madrid, Spain

<sup>b</sup> Red de Investigación Renal (REDINREN) RETIC 016/009/009 ISCIII, Madrid, Spain

\*Corresponding author.

E-mail address: [mmvidas@gmail.com](mailto:mmvidas@gmail.com) (M. Marques Vidas).

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## Haemodiafiltration with ultrafiltrate regeneration in the removal of free light chains in multiple myeloma and acute kidney injury

## Hemodiafiltración con regeneración de ultrafiltrado en la eliminación de cadenas ligeras libres en mieloma múltiple y lesión renal aguda

Dear Editor,

Renal function is frequently impaired in plasma cell dyscrasias. In patients suffering from multiple myeloma

(MM), the acute kidney injury (AKI) is a serious prognostic factor. The nephrologists are interested in the fast reduction of free light chains (FLC) blood levels through extracorporeal treatments in order to facilitate the recovery of renal function,

**Table 1 – Reduction rates in studied patients.**

No.	Patient	Pre-HFR FLC blood levels	Post-HFR FLC blood levels	Rate of reduction
1	Lambda-FLC	2760 mg/L	1870 mg/L	32.2%
2	Lambda-FLC	1010 mg/L	672 mg/L	33.4%
3	Lambda-FLC	1130 mg/L	570 mg/L	49.5%

to offer more effective chemotherapy and to improve renal and patient outcomes. Extended haemodialysis with high-molecular weight cut-off (HCO) membranes are effective in the removal of FLC but they have high cost and produce a substantial loss of albumin.<sup>1</sup> Recent studies reported the effectiveness of haemodiafiltration with ultrafiltrate regeneration in the reduction of FLC in MM with renal failure.<sup>2-4</sup> The haemodiafiltration with ultrafiltrate regeneration by adsorption in resin and endogenous reinfusion (HFR) is an extracorporeal clearance technique that combines convection, adsorption and diffusion without albumin removal. We report our experience. We studied the effects of HFR on the removal of FLC in 3 haemodialysis-dependent patients with MM and AKI admitted to our department from June to October. Two patients had lambda-IgG MM and one had lambda-IgA MM. Through a temporary vascular catheter, we treated with Supra-HFR<sup>®</sup> (TM BELLCO, Italy) with three sessions per week of 210 min. Blood flow was between 200 and 250 ml/min, dialysate flow was 500 ml/min and the ultrafiltration rate depending on the patients' interdialysis weight gain. In 3 of these sessions, we analysed the pre- and post-HFR blood levels of kappa- and lambda-FLC (Table 1). Serum FLC concentrations were measured with N Latex FLC kit (Siemens) using the BN II SIEMENS nephelometer. The normal ranges with this assay are 6.70–22.40 mg/L for kappa-FLC and 8.30–27.00 mg/L for lambda-FLC. The reduction rates were between 32.2% and 49.5%. Blood albumin concentration did not change and we didn't need of albumin replace therapy. The results of the reduction rates of FLC were similar that in previous reports. Supra-HFR had a cost of approximately 120 euros per session. In Italy the Gambro HCO 1100 dialyser (Theralite 2100<sup>®</sup>) has a cost of approximately 1000 euros per session. Also in our experience, the HFR therapy is effective in removing FLC with lower cost (compared with HCO membranes) and no significant loss of albumin.

## Conflict of interest

The authors have nothing to declare.

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Gioacchino Li Cavoli\*, Silvia Passanante, Onofrio Schillaci, Franca Servillo, Carmela Zagarrigo, Tancredi Vincenzo Li Cavoli, Mattia Palmeri, Benedetta Palma, Ugo Rotolo

*Nephrology-Dialysis Department, Civico and Di Cristina Hospital Palermo, Italy*

\* Corresponding author.

E-mail address: [gioacchinolicavoli@libero.it](mailto:gioacchinolicavoli@libero.it) (G. Li Cavoli).

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