

Víctor M. García-Nieto^{a,*}, Elena Lucas-Sáez^b,
Margarita Monge-Zamorano^c

^a Sección de Nefrología Pediátrica, Hospital Nuestra Señora de
Candelaria, Santa Cruz de Tenerife, Spain

^b Unidad de Nefrología Pediátrica, Hospital de Manises, Valencia,
Spain

^c Pediatría, Centro de Salud de Tacoronte, Tenerife, Spain

*Corresponding author.

E-mail address: vgarcianieto@gmail.com (V.M. García-Nieto).

2013-2514/© 2022 Sociedad Española de Nefrología. Published
by Elsevier España, S.L.U. This is an open access article
under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<https://doi.org/10.1016/j.nefro.2021.12.012>

Consensus document on the management of hyperkalaemia. Response

Documento de consenso sobre el abordaje de la hiperpotasemia. “Respuesta”

Dear Editor,

A consensus document on the management of hyperkalaemia¹ was recently published in your journal. The article provides a comprehensive review of the published studies, but we found a number of discrepancies between the text and the figures, which we believe to be due to errors. We would therefore like to make a series of points.

We found it striking that in Figure 1, when referring to increased gastrointestinal elimination of potassium, only sodium zirconium cyclosilicate (SZC) is mentioned, when patiromer has exactly the same effect and, in fact, it is its mechanism of action that justified its authorisation.

Moreover, although neither patiromer nor SZC are indicated for the acute treatment of hyperkalaemia, with both of their summaries of product characteristics even highlighting that they do not have this indication, it seems reasonable to start long-term treatment as soon as possible, obviously without substituting the usual emergency treatment. Both products have shown a greater reduction in blood potassium at 2 h, compared to placebo in the case of SZC and compared to standard treatment in the case of patiromer, with potassium returning to normal levels at 48 h. However, in Figure 2, only SZC is cited for the acute treatment of hyperkalaemia. It should be added that the consensus documents published in 2021 by the European Resuscitation Council² and in 2022 by SEMES-SEN-SEC (Sociedad Española de Medicina de Urgencias y Emergencias-Sociedad Española de Nefrología-Sociedad Española de Cardiología) [Spanish Society of Emergency Medicine-Spanish Society of Nephrology-Spanish Society of Cardiology]³ cite both products for use, both during hospital admission and at discharge home, as they may make it

possible not to discontinue or reduce essential treatments that might induce hyperkalaemia, such as axis inhibitors, and thus not deprive the patient of their beneficial effects in the medium and long term.

As for Figure 3, a broad description of SZC is given, but not of patiromer. Patiromer also offers pleiotropic effects, such as lowering phosphorus levels, which is an advantage for many patients. One study showed normalisation of phosphorus and potassium levels after two weeks of treatment, which was maintained for four weeks in patients with chronic kidney disease (CKD) not on dialysis, hyperkalaemia and hyperphosphataemia.⁴

It is also difficult to understand why, despite a review of the data for the two products showing that the SZC trials included a lower proportion of patients with CKD, heart failure and diabetes with the same renin-angiotensin-system blocker treatment, without any justification, the algorithm states that SZC is especially indicated for patients with CKD. As we said at the beginning, this is probably an error, since in the case of patiromer the percentage of patients with CKD, diabetes mellitus and heart failure is higher, in addition to there being evidence in patients with resistant hypertension, among other patient profiles. In summary, patiromer allows us to address the need to treat hyperkalaemia across the entire spectrum of CKD.^{5–9}

Regarding the safety of both products, there is no mention in the document that the administration of SZC and tacrolimus should be separated by 2 h because of a possible interaction. And although it has not been considered to have an impact on its risk-benefit balance, the SZC summary of product characteristics received an update which included possible cases of intestinal perforation. Patiromer maintains its good safety profile. The adverse reaction section of the summary of product characteristics has remained unchanged since the first authorisation. In addition, the use of patiromer

may be associated with a lower risk of hospitalisations for heart failure (and oedema) compared to SZC in real clinical practice.¹⁰

Finally, we could not agree more with the conclusions. Clinical judgement is essential to choose between therapeutic options with slight differences in their profiles and to offer patients a treatment which is as tailored as possible to their needs, in order not to deny them the benefits of one of the essential pillars of treatment.

Funding

No funding has been received for the contents of this letter.

REFERENCES

- Ortiz A, del Arco Galán C, Fernández-García JC, Gómez Cerezo J, Ibán Ochoa R, Núñez J, et al. Documento de consenso sobre el abordaje de la hiperpotasemia. *Nefrología*. 2023, <http://dx.doi.org/10.1016/j.nefro.2023.05.004>.
- Lott C, Truhlář A, Alfonzo A, Barelli A, González-Salvado V, Hinkelbein J, et al. European Resuscitation Council Guidelines 2021: cardiac arrest in special circumstances. *Resuscitation*. 2021;161:152–219, <http://dx.doi.org/10.1016/j.resuscitation.2021.02.011>.
- Álvarez-Rodríguez E, Olaizola Mendibil A, Burzako Sánchez A, Esteban-Fernández A, Sánchez Álvarez E. Recomendaciones para el manejo de la hiperpotasemia en urgencias. *Emergencias*. 2022;34(4).
- Bushinsky DA, Budden JJ, Kalra PA, Yuan J, Quinn CM, Epstein M. Patiromer treatment in patients with CKD, hyperkalemia, and hyperphosphatemia: a post hoc analysis of 3 clinical trials. *Am J Kidney Dis*. 2023;82(1):97–104, <http://dx.doi.org/10.1053/j.ajkd.2023.01.444>.
- Bakris GL, Pitt B, Weir MR, Freeman MW, Mayo MR, Garza D, et al. Effect of patiromer on serum potassium level in patients with hyperkalemia and diabetic kidney disease. *JAMA*. 2015;314(2):151, <http://dx.doi.org/10.1001/jama.2015.7446>.
- Weir MR, Bakris GL, Bushinsky DA, Mayo MR, Garza D, Stasiv Y, et al. Patiromer in patients with kidney disease and hyperkalemia receiving RAAS inhibitors. *N Engl J Med*. 2015;372(3):211–21, <http://dx.doi.org/10.1056/NEJMoa1410853>.
- Agarwal R, Rossignol P, Romero A, Garza D, Mayo MR, Warren S, et al. Patiromer versus placebo to enable spironolactone use in patients with resistant hypertension and chronic kidney disease (AMBER): a phase 2, randomised, double-blind, placebo-controlled trial. *Lancet*. 2019;394(10208):1540–50, [http://dx.doi.org/10.1016/S0140-6736\(19\)32135-X](http://dx.doi.org/10.1016/S0140-6736(19)32135-X).
- Bushinsky DA, Rossignol P, Spiegel DM, Benton WW, Yuan J, Block GA, et al. Patiromer decreases serum potassium and phosphate levels in patients on hemodialysis. *Am J Nephrol*. 2016;44(5):404–10, <http://dx.doi.org/10.1159/000451067>.
- Kovesdy CP, Rowan CG, Conrad A, Spiegel DM, Fogli J, Oestreicher N, et al. Real-world evaluation of patiromer for the treatment of hyperkalemia in hemodialysis patients. *Kidney Int Rep*. 2019;4(2):301–9, <http://dx.doi.org/10.1016/j.ekir.2018.10.020>.
- Zhuo M, Kim SC, Paterno E, Paik JM. Risk of hospitalization for heart failure in patients with hyperkalemia treated with sodium zirconium cyclosilicate versus patiromer. *J Card Fail*. 2022;28(9):1414–23, <http://dx.doi.org/10.1016/j.cardfail.2022.04.003>.

Antoni Lorente*

Director Médico, CSL Vifor, Barcelona, Spain

* Corresponding author.

E-mail address: antoni.lorente@viforpharma.com

2013-2514/© 2023 Sociedad Española de Nefrología. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). <https://doi.org/10.1016/j.nefro.2023.09.005>

Effectiveness of intradialytic semi-supervised exercise on patients' functional capacity: An exploratory study

Eficacia del ejercicio intradiálitico semisupervisado en la capacidad funcional de los pacientes: Un estudio exploratorio

Dear Editor,

Physical exercise during haemodialysis (HD) sessions has a positive impact on patients' functional capacity.¹ However, this strategy is not widespread, among other factors, due to

the financial cost of hiring staff to supervise them.² One possible solution would be the development of semi-supervised programmes, which would reduce the need for constant presence of an exercise professional and therefore reduce costs. We present the results of an uncontrolled comparative study on the effects of a semi-supervised intradialytic physical exercise programme on functional capacity in patients on HD.

DOI of original article:
<https://doi.org/10.1016/j.nefro.2021.09.022>.