

Pain in Fabry Disease: Could Spinal Cord Stimulation be a Solution?

Dear Editor,

We would like to focus our attention on the treatment of pain in Fabry disease, a lysosomal storage pathology caused by a mutation in the gene of alpha-galactosidase A, whose deficiency determines multiorgan failure such as neurologic, cardiovascular, and renal impairment.^[1] Enzyme replacement therapy is a cornerstone in the management of Fabry patients as it slows disease progression and organ impairment, but it does not effectively improve painful symptoms.^[2] The management of pain in Fabry patients relies on many drugs, including nonsteroidal anti-inflammatory drugs for acute pain and antiepileptic drugs, tricyclic antidepressants, and serotonin–norepinephrine reuptake inhibitors for chronic pain, as the pain shows etiological, pathophysiologic, and symptomatologic features of neuropathic pain.

Spinal cord stimulation (SCS) is a novel approach to neuropathic pain of peripheral origin: it acts through an electrocatheter placed in the posterior epidural space with a pulse generator located in a subcutaneous pocket. The stimulation of dorsal horn prevents the painful stimulus from reaching the brain and consequently being processed to become a conscious sensation; in this way, the cause of pain remains, but the patient does not feel it. The mechanism is far to be elucidated, but SCS has shown its effectiveness in many conditions such as failed back surgery syndrome, complex regional pain syndrome, post-herpetic neuralgia, radiculopathy, angina pectoris, and peripheral arterial disease.^[3]

Diabetic neuropathy shares the clinical features and etiopathological mechanisms with pain in Fabry disease as they both are supposed to be caused by a microvascular and small fiber injury and show a symptomatic involvement of extremities, in particular, glove and stocking regions.^[4] SCS proved to be effective in peripheral diabetic neuropathy pain both due to its intrinsic analgesic effect and because, as in peripheral arterial disease, it causes a vasodilation due to sympatholytic effect, which determines an improvement of peripheral circulation and nerve trophism.^[5]

In our opinion, SCS could have a potential role in the management of pain in Fabry patients as it proved to improve symptoms in a great variety of painful diseases of different pathogeneses. Studies are needed to determine its possible role in this setting as such a field of application of SCS is totally unexplored. SCS could be the technique with a mysterious but effective mechanism for a mysterious but actual pain as the one experienced in Fabry disease.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

**Pasquale Buonanno¹, Ivana Capuano¹,
Eleonora Riccio², Antonio Pisani¹**

Department of Neurosciences, Reproductive and Odontostomatological Sciences, University of Naples "Federico II", Naples, ¹Department of Public Health, Chair of Nephrology, University Federico II of Naples, ²Institute for Biomedical Research and Innovation, National Research Council of Italy, Palermo, Italy

Address for correspondence:

*Dr. Pasquale Buonanno,
Via S. Pansini, 5 80131 Napoli, NA, Italy.
E-mail: pasqual3.buonanno@gmail.com*

References

1. Capuano I, Garofalo C, Buonanno P, Pinelli M, Di Risi T, Feriozzi S, *et al.* Identifying Fabry patients in dialysis population: Prevalence of GLA mutations by renal clinic screening, 1995-2019. *J Nephrol* 2020;33:569-81.
2. Hoffmann B, Garcia de Lorenzo A, Mehta A, Beck M, Widmer U, Ricci R, *et al.* Effects of enzyme replacement therapy on pain and health related quality of life in patients with Fabry disease: Data from FOS (Fabry Outcome Survey). *J Med Genet* 2005;42:247-52.
3. Sdrulla AD, Guan Y, Raja SN. Spinal cord stimulation: Clinical efficacy and potential mechanisms. *Pain Pract* 2018;18:1048-67.
4. Yagihashi S, Mizukami H, Sugimoto K. Mechanism of diabetic neuropathy: Where are we now and where to go? *J Diabetes Investig* 2011;2:18-32.
5. Tiede JM, Huntoon MA. Review of spinal cord stimulation in peripheral arterial disease. *Neuromodulation* 2004;7:168-75.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
Quick Response Code: 	Website: https://journals.lww.com/ijon
	DOI: 10.4103/ijon.IJN_100_21

How to cite this article: Buonanno P, Capuano I, Riccio E, Pisani A. Pain in Fabry disease: Could spinal cord stimulation be a solution? *Indian J Nephrol* 2023;33:394.

Received: 26-02-2021; Revised: 04-02-2023; Accepted: 04-02-2023; Published: 24-07-2023
 © 2023 Indian Journal of Nephrology | Published by Wolters Kluwer - Medknow