

Title: Sciatic Nerve Injured Mice Treated with Valproic Acid Shows an Improvement in Pain and Motor Function Associated to an Increase in the Number of Myelinated Fibers and Immunomodulation of Neutrophils

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Abstract:

Lesions to the peripheral nerves are very common and may lead to permanent disability, despite the regenerative capacity of the peripheral nervous system (PNS). Unfortunately, there is no established pharmacological therapy capable of promoting functional recovery and alleviation of trauma-related symptoms such as neuropathic pain, inflammation and weakness, which represent the main targets for current therapies. Here we provide new evidence for a therapeutical use of valproic acid (VPA) after sciatic nerve compression. Sciatic nerve injured mice treated with VPA after lesion and during 21 consecutive days, presented an improvement in pain and motor functions associated to an increase in the number of myelinated nerve fibers, and exhibited a more organized tissue architecture. Also, VPA treatment promoted an immunomodulatory capacity, with a significant increase of neutrophils in the peritoneal cavity, suggesting its role on the sensory and motor recovery after nerve injury. In conclusion, this study contributes to the characterization of innovative pharmacological epigenetic therapy capable of accelerating peripheral nerve regeneration with possible translational actions.

Biography:

Ana Maria Blanco Martinez (MD, PhD), is a Full Professor at the Department of Pathology, Federal University of Rio de Janeiro, Rio de Janeiro, Brasil. Professor Martinez is an expert in studies on “Strategies to enhance nerve regeneration after compressive or transaction injuries in mice”. Her research also includes studies on spinal cord compressive injuries with the goal to improve morphological and functional improvements in rodents. She has published more than a hundred articles in international journals and has supervised many master and PhD thesis.