

Poster topic 21 | Neuromodulation by Glia

T21-001C

Gabapentin decreases microglial and astrocytes cells in rats with chronic myositis.

M. Chacur, A. Santanta Rosa, D. Martins, I. Rocha

Institute of Biomedical Science- Department of Anatomy, University of São Paulo, São Paulo, BR

Musculoskeletal tissue is a very common site of pain. Chronic muscular affections represent a high economic cost and do not respond well to conventional interventions, affecting people's quality of life. We have chosen gabapentin as a potential treatment for chronic muscle pain because of its antinociceptive effect reported in the literature and also because of its wide efficacy in clinical cases of chronic pain. Studies have shown that gabapentin can inhibit painful responses through its binding to $\alpha 2 / \delta$ -1 subunit of voltage-dependent calcium channels present in neurons and reduction of substances such as glutamate, substance P, cytokines. In the present work, we investigated the antinociceptive effect of gabapentin in a chronic myositis model and its interference in central glial cells. Chronic myositis was induced by injection of Complete Freund Adjuvant (CFA) into the right gastrocnemius (GS) muscle of rats and tests for nociceptive behavioural. Pharmacological treatment with gabapentin was administrated intrathecally (200ug/50ul). For analyzing astrocytes and microglia in the thalamus, immunohistochemistry assay was performed. Our studies showed a bilateral hyperalgesia induced by CFA-induced chronic myositis. Immunoreactivity results have showed an increase of astrocytes and microglial cells in the experimental thalamus of the animals with chronic myositis when compared to control animals (naive) in both side analyzed. In addition, it has been observed that there is inhibition in astrocytic and microglia immunoreactivity on both sides of the thalamus analyzed after pharmacological treatment with gabapentin. Thus, we suggest that there is contribution of astrocytes and microglia acting in the thalamic nuclei for generation of bilateral hyperalgesia found in animals with chronic myositis induced by CFA injection. Therefore, gabapentin could be used as treatment for targeting chronic muscle pain.

Acknowledgement

FAPESP 2017/05218-5

T21-002C

Impact of oligodendroglial secreted factors on hippocampal neurons physiology and connectivity: an electrophysiological and transcriptomic study.

E. Mazuir¹, L. Richevaux^{2,3}, N. Robil⁴, M. Nassar^{2,3}, P. De la Grange⁴, C. Lubetzki^{1,5}, D. Fricker^{2,3}, N. Sol-Foulon¹

¹Inserm, CNRS, UMR7225, Institut du Cerveau et de la Moelle épinière, ICM, Sorbonne Université, Paris, FR

²Integrative Neuroscience and Cognition Center, UMR 8002, CNRS, Paris, FR

³Sorbonne Paris Cité, Université Paris Descartes, Paris, FR

⁴GenoSplice, Paris, FR

⁵GH Pitié-Salpêtrière, Assistance Publique-Hôpitaux de Paris, Paris, FR