

Pain and Neurosciences

Group leader

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DESCRIPTION

Our field of research is fundamentally clinical and primarily focused on potential therapies, both pharmacological and interventional, aimed at improving pain.

In recent years, there has been an increase in the implantation of neurostimulation systems and intrathecal infusion devices. Efforts are underway to improve the safety and clinical efficacy of these analgesic therapies.

We work on the multidimensional nature of pain, exploring how sex and gender, as well as various medical and psychological comorbidities, influence pain perception.

MAIN LINES OF RESEARCH

- Neuromodulation in Catalonia. Creation of a database of patients undergoing neurostimulation and intrathecal drug infusion. (Revuelta Rizo, Miren Eli; Genove Cortada, Maria Mercé; Ferrandiz Mach, Marta; Díaz Jover, Ruben; Sarmiento Luque, Teresa Eugenia; Muñoz Hernandez, Isabel; Roses Álvarez, Laia).
- Identify the best profile of patients (their psychopathological characteristics) before the implementation of neuromodulation techniques. (Sarmiento Luque, Teresa Eugenia; Revuelta Rizo, Miren Eli; Ferrandiz Mach, Marta; Genove Cortada, Maria Mercé; Díaz Jover, Ruben).
- The effect of pulsed radiofrequency on the chronic orofacial pain. (Díaz Jover, Ruben).

- The effect (analgesic and side effects) of spinal Ziconotide in patients with refractory chronic pain. (Ferrandiz Mach, Marta; Genove Cortada, Maria Mercé).
- Factors that can influence postoperative pain. (Santeularia Verges, Maria Teresa; Heredia Carques, Cristina; Muñoz Hernandez, Isabel).
- Treatment Guidelines for Acute intrahospital Pain. (Santeularia Verges, Maria Teresa; Heredia Carques, Cristina; Genove Cortada, Maria Mercé; Muñoz Hernandez, Isabel).
- Characterizing the profile according to gender when patients reach our pain clinic. (Santeularia Verges, Maria Teresa; Melo Cruz, Martha Cristina; Ferrandiz Mach, Marta).
- Development of a new comorbidity index associated with chronic pain. (Santeularia Verges, Maria Teresa).
- New drugs in Neuropathic Pain. Focus on postherpetic neuralgia. (Genove Cortada, Maria Mercé; Melo Cruz, Martha Cristina; Muñoz Hernandez, Isabel; Roses Álvarez, Laia; Díaz Jover, Ruben; Heredia Carques, Cristina; Revuelta Rizo, Miren Eli; Ferrandiz Mach, Marta).
- Quality of care in pain clinics using the iso 9001 – 2015 methodology (international organization for standardization). The audit is carried out every year. (Ferrandiz Mach, Marta).
- Interventional treatments for hypopressive and trigeminal-autonomic headaches. (Melo Cruz, Martha Cristina; Revuelta Rizo, Miren Eli).
- Determine the extent of chronic pain according to the involvement of different brain areas, and if these alterations can improve with the relief of pain.
- Unify and make our databases compatible to create profiles and clusters of patients with chronic pain.
- Improve hospital prescription of postoperative pain analgesic guidelines to preserve patient safety.
- Determine whether the intensity of chronic neuropathic pain assessed by the patient is correlated with the patient's psychopathology, essentially anxiety, depression and catastrophising.
- Determine the profile of patients who would benefit from treatment with major systemic opioids regarding night rest and establish the recommended opioid.
- Establish the recommended opioid dose to start a treatment and how to remove it.

SCIENTIFIC CHALLENGES

- Establish the possible differences in brain area involvement between acute and chronic pain.
- Improve the efficacy and safety of neuromodulation techniques (both electrical and chemical)
- Enhance neuromodulation (electrical and chemical) at the hospital level to be a regional reference centre.

SCIENTIFIC PRODUCTION

- Aibar JÁ, Villalba G, Freixer B, Araus E, Morollón Sánchez N, Belvis R, Revuelta M, Molet J, García C, de Quintana C, Muñoz F, Rodríguez R. Long-Term Results of Cortical Motor Stimulation for Neuropathic Peripheral and Central Pain: Real-World Evidence From Two Independent Centers. *Neurosurgery*. 2024; 94(1). DOI:10.1227/neu.0000000000002638. PMID:37638720. IF:3,900 (Q1/1D). Document type: Article.
- Labandeyra H, Heredia C, Váldez LF, Prats A, Sala X. Clavipectoral fascia plane block in midshaft clavicle fractures: A cadaveric study. *JOURNAL OF CLINICAL ANESTHESIA*. 2024; 96:111469. DOI:10.1016/j.jclinane.2024.111469. PMID:38678917. IF:5,000 (Q1/1D). Document type: Article.
- Roca G, Sabaté S, Serrano A, Benito MC, Pérez M, Revuelta M P, et. al. Sex differences in chronic postsurgical pain after open

thoracotomy. Journal of cardiothoracic and vascular anesthesia. 2024; 38(12):3134-3142. DOI:10.1053/j.jvca.2024.08.039. PMID:39322441. IF:2,300 (Q2/4D). Document type: Article.

- Rodríguez A, Genové M, Rosés L, Melo M, Ferrandiz M. Rescate de morfina intratecal con ziconotida en el tratamiento del dolor crónico benigno. Dolor: Investigación, clínica & terapéutica, ISSN 0214-0659, Vol. 39, N°. 3, 2024, págs. 62-66. Document type: Article.