

Neurosurgery

Group leader

Muñoz Hernandez, Fernando (FGS)

Researchers

Aibar Duran, Juan Angel (FGS)

Anka, Michael Oladotun (FGS)

Borras Pino, Xavier (FGS)

De Quintana Schmidt, Cristian Jose (FGS)

Freixer Palau, Berta (FGS)

Leidinger, Andreas (FGS)

Patino Alvarado, Juan Diego (FGS)

Perales Susan, Mario (IR)

Rico Pereira, Marta (FGS)

Rodríguez Rodríguez, Rodrigo (FGS)

Roig Arsequell, Clara (FGS)

Sánchez Nevado, Raquel (FGS)

Tello Vicente, José Antonio (FGS)



DESCRIPTION

The neurosurgery team is a young research group with a clear mission: improve the quality of life of patients and, at the same time, be able to contribute to improvements in healthcare practice through research into potential surgical neurological disease. There are 4 areas of knowledge where our group stands out nationally and internationally: neuro oncology, skull base, functional neurosurgery, and spine surgery.

MAIN LINES OF RESEARCH

- Tumor biology: gliomas (prognostic value of different mutations in anaplastic astrocytoma and GBM). Dr. de Quintana.
- Biomarkers in anaplastic astrocytomas, and glioblastoma multiforme. Application of new technologies in the resection of intracranial tumors. Dr. de Quintana.
- Tumor biology: pituitary gland adenomas, pathology molecular analysis. Dr. F. Muñoz.
- Prospective study of patients operated by endoscopic endonasal approach. Dr. F. Muñoz.
- Biomaterials: a comparative study of two different cranial bone fixations. Dra. M. Rico.
- Study about cerebral plasticity in patients with cervical myelopathy. Dr. J. Patino.
- Muscle atrophy after spinal surgery (lumbar lateral approach). Dr. A. Leidinger.
- Clinical evaluation of neurostimulation techniques in different neurological entities (Parkinson disease and neuropathic pain). Dr. Rodríguez and Dr. Aibar.



5.1.3 Neurological Diseases, Neuroscience & Mental Health Area

- Deep brain stimulation on psychiatric disorders: Depression and Schizophrenia. Dr. Rodríguez and Dr. Aibar.
- Safety and effectiveness of dialysis. Dr. de Quintana.

SCIENTIFIC CHALLENGES

- Neurostimulation for resistant craniofacial pain (jointly with Neurology and Pain Clinic Unit). Dr. Rodríguez and Dr. Aibar.
- Use of intraoperative echography for treatment of brain tumors. Dr. de Quintana.
- Monitor the glioma tumor diagnosis, treatment and prognostic factors (Hospital Sant Pau - Hospital del Mar). Dr. de Quintana.
- Pituitary adenoma treatment: medial cavernous sinus wall approach to cure adenomas. Intraoperative neuromonitoring of oculomotor cranial nerves in skull base tumors. Dr. F. Muñoz.

ACTIVE GRANTS

- De Quintana Schmidt, Cristian Jose. Ecografía intraoperatoria en la exéresis de metástasis cerebrales y estudio de los márgenes de resección: correlación con la resonancia magnética, la tomografía de emisión de positrones y la histología. IIBSP-ECO-2022-49. Duration: 2022-2023.

SCIENTIFIC PRODUCTION

- Aibar JA, Collado IC, Bejarano AR, Nevado RS, Bolanos IA, García J, Alonso A, Bello E, Schmidt CD, Hernandez FM, Teixido JM, Rodríguez RR. Long-term outcomes of deep brain stimulation for treatment-resistant schizophrenia: Exploring potential targets. *JOURNAL OF PSYCHIATRIC RESEARCH*. 2023; 163. DOI:10.1016/j.jpsychires.2023.05.056. PMID:37245316. IF:4,800 (Q2/3D). Document type: Article.
- Alemany C, Puigdemont D, Martín A, Rodríguez R, Aibar JA, Vicent M, Álvarez E, Pérez V, Portella MJ, de Diego J. Response and Safety Outcomes in Treatment-Resistant Depression After Subcallosal Cingulate Gyrus Deep Brain Stimulation: Long-term Follow-up Study. *JOURNAL OF CLINICAL PSYCHIATRY*. 2023; 84(4):22m14622. DOI:10.4088/JCP.22M14622. PMID:37378475. IF:5,300 (Q1/2D). Document type: Article.
- Asencio C, Villalba G, De Vilalta Á, Serrano L, Álvarez MJ, Montes G, Málaga X, Muñoz F, Gabarrós A. Safety and Performance of a New Burr Hole Covering Device: Results of the Multi-center COVER Registry. *Journal of Neurological Surgery Part A-Central European Neurosurgery*. 2023; 84(5). DOI:10.1055/a-1883-0344. PMID:35738392. IF:1,000 (Q4/9D). Document type: Article.
- Gil J, Marques M, Valassi E, Serra G, Salinas I, Xifra G, Casano P, Carrato C, Biagetti B, Sesmiolo G, Marcos J, Rodríguez H, Rueda A, Aulinas A, Blanco A, Hostalot C, Simó A, Muñoz F, Rico M, Ibanez J, Cordero E, Webb SM, Jordà M, Puig M. Molecular characterization of epithelial-mesenchymal transition and medical treatment related-genes in non-functioning pituitary neuroendocrine tumors. *Frontiers in Endocrinology*. 2023; 14:1129213. DOI:10.3389/fendo.2023.1129213. PMID:37033229. IF:5,200 (Q1/3D). Document type: Article.
- Latorre G, González N, García J, González C, Porta J, Molina FJ, Guerrero AL, Belvis R, Rodríguez R, Bescós A, Irimia P, Santos S. Diagnosis and treatment of trigeminal neuralgia: Consensus statement from the Spanish Society of Neurology's Headache Study Group. *NEUROLOGIA*. 2023; 38. DOI:10.1016/j.nrl.2021.09.015. IF:3,900 (Q2/4D). Document type: Review.
- Leiding A, Zuckerman SL, Feng YQ, He YT, Chen XR, Cheserem B, Gerber LM, Lessing NL, Shabani HK, Haertl R, Mangat HS. Predictors of spinal trauma care and outcomes in a resource-constrained environment: a decision tree analysis of spinal trauma surgery and outcomes in Tanzania. *JOURNAL OF NEUROSURGERY-SPINE*. 2023; 38(4). DOI:10.3171/2022.11.SPINE22763. PMID:36640104. IF:2,800 (Q2/4D). Document type: Article.
- Martinez S, Aracil I, Perez J, Perez L, García J, Campolongo A, Aibar JA, Rodríguez R, Pascual B, Kulisevsky J. Theta/Alpha Band Suppression and Clinical Outcomes During Globus Pallidus Internus Deep Brain Stimulation in Huntington's Disease. *Movement Disorders Clinical Practice*. 2023; 10(3). DOI:10.1002/mdc3.13644. PMID:36949795. IF:4,000 (Q2/4D). Document type: Letter.-Vol-tà E, Parladé E, Serna N, Villaverde A, Vazquez



5.1.1.3 Neurological Diseases, Neuroscience & Mental Health Area

E, Unzueta U. Endosomal escape for cell-targeted proteins. Going out after going in. BIOTECHNOLOGY ADVANCES. 2023; 63:108103. DOI:10.1016/j.biotechadv.2023.108103. PMID:36702197. IF:16,000 (Q1/1D). Document type: Review.