



3.6.4 Osteoarticular Surgery Research - GICOA Group

Publications:38 | Q1:8

COMPOSITION

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STRATEGIC OBJECTIVE

- Orthopaedic implant studies are required to assess the results of implants, detect the causes of failure, and deepen our understanding of the prevention and solution of these failures. The medical, social, and economic relevance of orthopaedic implants, and their influence on quality of life, place this technology in the centre of translational research in orthopaedic surgery. Reconstruction based on biological strategies and biomaterials is rapidly evolving, and cutting edge research on these topics may offer an advantage in clinical translational research. The group has also developed studies on sports medicine and ligament reconstruction, with various outcome approaches and devices that may enhance surgical results. In this context, a multidisciplinary clinical and basic research group on orthopaedic surgery deepens our understanding of a wide variety of current research topics in the field and provides further progress towards clinical translation.
- In order to contribute to new advances in the field, our main clinical and experimental objectives are addressed by a joint research line that covers issues related to bone and joint reconstruction. These issues include the following:
 - Failed hip and knee prostheses, including the material, biological, and clinical mechanisms of failure. This research may lead to proposals for materials and design modifications in orthopaedic implants and reconstructive devices and techniques. Functional recovery of the patient is the ultimate goal, considering various scenarios from an experimental and clinical point of view.
 - Regenerative medicine approaches to bone and joint reconstruction, to generate preclinical and clinical proposals for bone and joint regeneration and repair, both in traumatic and non-traumatic bone and soft-tissue injuries.



RESEARCH LINES

- Clinical and basic research in Orthopaedics implants, and in bone and joint reconstruction



RESEARCH ACTIVITY

Publications

- **Antuña S.** Onlay versus inlay humeral components in reverse shoulder arthroplasty: A systematic review and meta-analysis Commentary. *Shoulder Elbow.* 2023; 15(1): 14. Editorial Material. IF: 1.5; Q3
- **Antuña S.** The Commentary. *Shoulder Elbow.* 2023; 15(1): 27. Editorial Material. IF: 1.5; Q3
- **Antuña S.** The Commentary. *Shoulder Elbow.* 2023; 15(1): 74. Editorial Material. IF: 1.5; Q3
- **Antuña S.** The Commentary. *Shoulder Elbow.* 2023; 15(1): 82. Editorial Material. IF: 1.5; Q3
- **Antuña S.** Commentary Samuel Antuna. *Shoulder Elbow.* 2023; 15(1): 93. Editorial Material. IF: 1.5; Q3
- **Antuña S.** The Commentary. *Shoulder Elbow.* 2023; 15(1): 104. Editorial Material. IF: 1.5; Q3
- **Antuña SA, Raganato R, Dopico LR, Barco R.** Influence of Coronoid fixation on the functional outcome and rate of complications in surgically treated acute complex elbow instability. *Injury.* 2023; 54: 110892. Article. IF: 2.2; Q3
- **Barco R, González-Escobar S, Acerboni-Flores F, Vaquero-Picado A.** Acute elbow dislocation: a critical appraisal of the literature. *JSES Int.* 2023; 7(6): 2560-4. Review. Not indexed
- **Blázquez-Ramos N, Romero-Garrido JA, del Valle LG, Collada-Sánchez VL, Álvarez-Román MT, Jiménez-Yuste V, Martín-Salces M, de la Corte-Rodríguez H, Herrero-Ambrosio A, Benedi-González J, Rodríguez-Merchan EC.** Development of a telematic pharmaceutical care app (Haemoassist) for multidisciplinary follow-up of patients with congenital coagulopathies. *Expert Rev Hematol.* 2023; 16(3): 213-26. Article. IF: 2.3; Q2
- **de la Corte-Rodríguez H, Rodríguez-Merchan EC.** Chronic pain in haemophilia: assessment and analgesic treatment. *Blood Coagul Fibrin.* 2023; 34: S1-4. Article. IF: 1.2; Q4
- **de la Corte-Rodríguez H, Román-Belmonte JM, Rodríguez-Damiani BA, Vázquez-Sasot A, Rodríguez-Merchán EC.** Extracorporeal shock

wave therapy for the treatment of musculoskeletal pain: a narrative review. *Healthcare (Basel).* 2023; 11(21): 2830. Review. IF: 2.4; Q2

- **de Pablo-Moreno JA, Miguel-Batuecas A, Rodríguez-Merchán EC, Liras A.** Treatment of congenital coagulopathies, from biologic to biotechnological drugs: The relevance of gene editing (CRISPR/Cas). *Thromb Res.* 2023; 231: 99-111. Review. IF: 3.7; Q1
- **Encinas-Ullán CA, de la Corte-Rodríguez H, Gomez-Cardero P, Rodríguez-Merchan EC.** Orthopedic surgical procedures in people with hemophilia. *Blood Coagul Fibrin.* 2023; 34: S5-8. Article. IF: 1.2; Q4
- **Gallego JA, Pardos AC, Luque JG, Rubio LEC, Fernández RF.** Dislocation and survival rate of dual mobility cups in revision total hip arthroplasty in patients with high risk of instability. *Int Orthop.* 2023; 47(7): 1757-64. Article. IF: 2.0; Q2
- **García-Maya B, Morais S, Díez-Sebastián J, Antuña S, Barco R.** Drain use can be avoided in reverse shoulder arthroplasty. *Injury.* 2023; 54: 111041. Article. IF: 2.2; Q3
- **García-Maya B, Morais S, Díez-Sebastián J, Antuña S, Barco R.** The efficacy of topical tranexamic acid in reverse shoulder arthroplasty. *Rev Esp Cir Ortop Traumatol.* 2023; 67(5): 387-93. Article. Not indexed
- **García-Maya B, Pérez-Barragans F, Gálvez JRL, Gallego JP, Vaquero-Picado A, Barco R, Antuña S.** Percutaneous plate fixation of displaced proximal humerus fractures: Do minimally invasive techniques improve outcomes and reduce complications? *Injury.* 2023; 54: 111042. Article. IF: 2.2; Q3
- **Grupp TM, Rusch S, Massin P, Blom A, García-Rey E, Cristofolini L, Janssen D, Grimm B, Giurea A, Jaeger M, Siccardi F, Overgaard S.** 1st EFORT European Consensus medical & scientific research requirements for the clinical introduction of artificial joint arthroplasty devices: background, delphi methodology & consensus process. *EFORT Open Rev.* 2023; 8(7): 499-508. Article. IF: 4.3; D1
- **Gruson KI, Tabeayo E, Stallone S, Bedeir YH, Rodríguez-Merchán EC.** Musculoskeletal literacy in orthopedics: associated factors, effects on patient-physician communication and intervention strategies. *Arch Bone Jt Surg.* 2023; 11(4): 227-35. Review. IF: 1.2; Q3
- **Li JT, Wu GF, Xu CH, Cai ZN, Ji JL, Yu ZY, Zhang J, Wang JL, Rodríguez-Merchan EC.** Slit guidance ligand 3 (SLIT3) loaded in hydrogel micro-particles enhances the tendon-bone healing through promotion of type-h vessel formation: an experimental study in mice. *Int J Mol Sci.* 2023; 24(17): 13638. Article. IF: 4.9; Q1





- **Rodríguez-Merchán EC.** In the era of primary prophylaxis in hemophilia, what types of orthopedic surgical interventions have been published in the 2020-2023 period and in which countries? *Expert Rev Hematol.* 2023; 16(12): 1077-85. Review. IF: 2.3; Q2
- **Rodríguez-Merchán EC.** Total elbow arthroplasty in hemophilia: a high-risk surgical procedure. *Expert Rev Hematol.* 2023; 16(12): 911-3. Editorial Material. IF: 2.3; Q2
- **Rodríguez-Merchán EC.** The role of intraarticular injections of hyaluronic acid in joint pain relief in hemophilic arthropathy. *Expert Rev Hematol.* 2023; 16(11): 811-7. Article. IF: 2.3; Q2
- **Rodríguez-Merchán EC.** Pharmacological thromboprophylaxis in people with hemophilia experiencing orthopedic surgery: what does the literature say in 2023? *J Clin Med.* 2023; 12(17): 5574. Review. IF: 3.0; Q1
- **Rodríguez-Merchán EC.** Hemophilic arthropathy: how to diagnose subclinical bleeding early and how to orthopedically treat a damaged joint. *Expert Rev Hematol.* 2023; 16(9): 651-8. Review. IF: 2.3; Q2
- **Rodríguez-Merchán EC.** Point-of-care ultrasonography can help detect subclinical hemarthrosis in hemophilic patients undergoing regular optimal clotting factor prophylaxis to achieve zero bleeding. *Expert Rev Hematol.* 2023; 16(8): 565-6. Editorial Material. IF: 2.3; Q2
- **Rodríguez-Merchán EC.** Synovitis in hemophilia: preventing, detecting, and treating joint bleeds. *Expert Rev Hematol.* 2023; 16(7): 525-34. Review. IF: 2.3; Q2
- **Rodríguez-Merchán EC.** Recent advances in orthopedic surgery for sports injuries. *Arch Bone Jt Surg.* 2023; 11(2): 102-5. Article. IF: 1.2; Q3
- **Rodríguez-Merchán EC.** Intra-articular injection of platelet-rich plasma in patients with hemophilia and painful knee joint cartilage degeneration. *Expert Rev Hematol.* 2023; 16(6): 407-16. Review. IF: 2.3; Q2
- **Rodríguez-Merchán EC.** The current role of disease-modifying osteoarthritis drugs. *Arch Bone Jt*

Surg. 2023; 11(1): 11-22. Review. IF: 1.2; Q3

- **Rodríguez-Merchán EC, Delgado-Martínez AD, de Andrés-Ares J.** Upper limb and lower limb radiofrequency treatments in orthopaedics. *EFORT Open Rev.* 2023; 8(6): 424-35. Article. IF: 4.3; D1
- **Rodríguez-Merchán EC, Di Minno MND, Pasta G.** Pain care management in rare diseases. *Healthcare (Basel).* 2023; 11(19): 2628. Article. IF: 2.4; Q2
- **Rodríguez-Merchán EC, Kachooei AR, Tabeayo E.** Elbow arthroplasty: A concise literature update. *Arch Bone Jt Surg.* 2023; 11(7): 465-72. Article. IF: 1.2; Q3
- **Rodríguez-Merchán EC, Tabeayo-Álvarez ED, Shojaie B, Kachooei AR.** Total wrist arthrodesis: An update on indications, technique and outcomes. *Arch Bone Jt Surg.* 2023; 11(3): 144-53. Review. IF: 1.2; Q3
- **Román-Belmonte J, Rodríguez-Merchán EC, de la Corte-Rodríguez H.** Metaverse applied to musculoskeletal pathology: Orthoverse and Rehabverse. *Postgrad Med.* 2023; 135(5): 440-8. Review. IF: 2.6; Q1
- **Sánchez BD, Barco R, Antuña SA.** Radial head replacement for acute complex elbow instability: a long-term comparative cohort study of 2 implant designs. *J Shoulder Elb Surg.* 2023; 32(12): 2581-9. Article. IF: 2.9; Q1
- **Tabayo E, Saucedo JM, Srinivasan RC, Shah AR, Karamanos E, Rockwood J, Rodríguez-Merchán EC.** Bridge plating in the setting of radiocarpal instability: Does distal fixation to the second or third metacarpal matter? A cadaveric study. *World J Orthop.* 2023; 14(4): 207-17. Article. IF: 2.0; Q2
- **Yeom DC, Hwang DJ, Lee WB, Cho JY, Koo JH, Rodríguez-Merchán EC.** Effects of low-load, high-repetition resistance training on maximum muscle strength and muscle damage in elite weightlifters: a preliminary study. *Int J Mol Sci.* 2023; 24(23): 17079. Article. IF: 4.9; Q1

Research projects

- **Barco Laakso R.** Artroplastia de cabeza radial anatómica versus espaciador de metal de vástago liso para traumatismo de codo. *Médical Simulator S. L.* 2018-Ongoing. *Managment centre: FIBHULP*
- **Barco Laakso R.** Morfología radiocapitelar, un estudio anatómico. *Acumed LLC.* 2018-Ongoing. *Managment centre: FIBHULP*
- **Barco Laakso R.** Terapia celular con células troncales derivadas del tejido adiposo (ASC) para mejorar el proceso de reparación en suturas tendinosas. Unión tendón-hueso (roturas del manguito rotador); unión tendón-músculo (roturas del tendón de aquiles). *Sociedad Española de Cirugía Ortopédica y Traumatología.* 2009-Ongoing. *Managment centre: FIBHULP*
- **García Rey E.** Identificación de factores moleculares implicados en la Osteonecrosis Idiopática: análisis del transcriptoma del tejido óseo (PI18/00643). *ISCIII.* 2018-2023. *Managment centre: FIBHULP*
- **Gómez Barrena E.** Desinfección in vivo de implantes ortopédicos metálicos mediante calor generado por inducción electromagnética. *Fundación Mutua Madrileña.* 2020-2024. *Managment centre: FIBHULP*
- **García Rey E.** Osteonecrosis de cabeza femoral: identificación de alteraciones en el hueso trabecular, correlación clínica y factores de riesgo en la fijación de la prótesis total de cadera (PI22/00939). *ISCIII.* 2023-2025. *Managment centre: FIBHULP*
- **Barco Laakso R.** Traumatic and neurogenic joint contracture in an experimental model in the Rat: preventive role of Celecoxib and Ketotifen. *European Society for Surgery of the Shoulder and the Elbow.* 2023-Ongoing. *Managment centre: FIBHULP*

Patents and trademarks

- **Arenas Vara MA, Conde del Campo A, De Damborenea González JJ, Matykina E, Esteban Moreno J, Gómez Barrena E, Pérez-Jorge Peremarch C, Pérez Tanoira R, inventors; CSIC, Instituto de Investigación Sanitaria Fundación Jiménez Díaz, assignees.** Titanium materials anodised with fluorine. P201030720, PCT/ES2011/070342; 2010 May 14
- **Gomez Barrena E, Cordero García-Galán E, Rico Nieto A, Pozo JJ, Esteban Moreno J, Sarnago H, Lucía Gil O, Acero Acero J, Burdío JM.** Portable disinfection system based on induction heating; September 2022.