



## 3.4.5 Nephrology Group

Publications: **23**

Q1: **12**

### COMPOSITION\*

**María Gemma Fernández Juárez.** Jefa de Servicio en Nefrología. Hospital Universitario La Paz

**María Auxiliadora Bajo Rubio.** Jefe de Sección de Nefrología. Hospital Universitario La Paz. Profesora Asociada. Facultad de Medicina. Universidad Autónoma de Madrid \*

**María José Castro Notario.** Enfermera. Hospital Universitario La Paz

**Olga Costero Fernández.** Facultativo Especialista de Área en Nefrología. Hospital Universitario La Paz

**Gloria del Peso Gilsanz.** Facultativo Especialista de Área en Nefrología. Hospital Universitario La Paz

**María Elena González García.** Facultativo Especialista de Área en Nefrología. Hospital Universitario La Paz

**Carlos Jiménez Martín.** Jefe de Sección de Nefrología. Hospital Universitario La Paz

**María Ovidia López Oliva.** Facultativo Especialista de Área en Nefrología. Hospital Universitario La Paz

**Almudena Pérez Torres.** Dietista-Nutricionista. Hospital Universitario Santa Cristina

**Begoña Rivas Becerra.** Facultativo Especialista de Área en Nefrología. Hospital Universitario La Paz

**Rafael Jesús Sánchez Villanueva.** Facultativo Especialista de Área en Nefrología. Hospital Universitario La Paz



### STRATEGIC OBJECTIVE

The strategic objective of this care-research group is to enable, by developing a deep understanding of the various components that make up nephrology (kidney diseases in initial stages, progression of kidney disease, particular and general complications of dialysis and kidney transplantation), access by affected patients to the best diagnostic and therapeutic interven-

tions available at any time. Each of the areas must ensure a minimum level of research and development activity representing the innovation in these areas.

The lines of research are at times cross-sectional to the four components indicated for overall nephrology.

### RESEARCH LINES

The lines of research are occasionally cross-sectional to the four components indicated for nephrology as a whole.

#### A) Incipient nephropathies and kidney disease progression:

- Glomerular and tubular nephropathies. New diagnostic markers and interventions.

- Organisational Research (computerisation, organisation of generational change in the department and network).
- Autosomal Dominant Polycystic Kidney Disease. Family Studies and treatment approaches with Tolvaptan.

\* In 2022, this group was led by Dr. María Auxiliadora Bajo



- Association of cardiovascular disease with the progress of nephropathies (NEFRONA multicenter study, REDinREN).
- Incorporation of a psychologist into the department of nephrology: criteria and process. Issues on monitoring therapeutic adherence, in particular among transplanted patients.

### B) Complications of dialysis

- Establishment of normal peritoneal functional in humans. Implications for patient survival and long-term treatment. New dialysis fluids. Aquaporin 1 (AQP1) and its genetic polymorphisms: relationship with peritoneal transport of water. Multicentre European study.
- The alternatively activated macrophage in peritoneal effluent (AAM): its relationship with defence and peritoneal fibrosis. CCL18 as a chemokine of AAM and a mediator of peritoneal fibrosis.
- Peritoneal biopsy for the complete evaluation of the peritoneal membrane. A corres-

pondence study with cell and components findings in peritoneal effluent during kidney transplantation is ongoing (Multicenter).

- Cardiovascular risk in patients with advanced kidney disease and on dialysis. Endocrine aspects. The abdominal adipocyte and adipocytokines. FABP antagonists as blockers of the adipocyte-macrophage response. Nonthyroidal diseases, influence on CKD patients. FGF 21 role in uremic insulin resistance.
- Mouse model for peritoneal dialysis: exploration of the effects of dialysis fluids, pharmacological interventions and genetic manipulation (KO, transgenic).
- Allergic reactions to hemodialysis membranes: mechanisms and alternatives.

### C) Complications of kidney transplantation:

- Toxicity due to immunosuppressants. Ultrasound contrast in the analysis of renal microvasculature in kidney transplantation and complications.
- The involvement of CMV in the renal graft response: anticipated diagnosis.

## RESEARCH ACTIVITY

### ● Doctoral theses

**Díaz Mancebo R.** La transición endotelio mesenquimal, mecanismo clave en el desarrollo de la vasculopatía hialinizante peritoneal [dissertation]. Madrid: UAM: 2022(07/10/2022).

**Directors:** Bajo Rubio MA;  
del Peso Gilsanz MG.

### ● Publications

- Bajo MA, Moreno FR, Arenas MD, Such RJD, Higuera MJM, Delgado M, Molina P, Fernández NG, Malo AM, Peiro-Jordán R, Cannata-Andia J, de Franciscoril ALM. Safety and effectiveness of sucroferic oxyhydroxide in Spanish dialysis patients: A sub-analysis of the VERIFIE study. *Nefrologia*. 2022; 42(5): 594-606. Article. IF: 2.6; Q3
- Campillo CR, de Pedro MPS, Barcelo SA, Rubio MAB, Soto AB, Rioja RG. Differences in glomerular filtration rate estimated with the new eGFRcr CKD EPI age and sex 2021 vs. the eGFRcr CKD EPI 2009 formula. *Adv Lab Med*. 2022; 3(3): 313-4. Letter. IF: 1; Q4
- Caravaca-Fontan F, Díaz-Encarnación M, Cabello V, Ariceta G, Quintana LF, Marco H, Barros X, Ramos N, Rodríguez-Mendiola N, Cruz S, Fernández-Juárez G, Rodríguez A, de José AP, Rabasco C, Rodado R, Fernández L, Gómez VP, Ávila A, Bravo L, Espinosa N, Allende N, de la Nieta MDS, Rodríguez E, Olea T, Melgosa M, Huerta A, Miquel R, Mon C, Fraga G, de Lorenzo A, Draibe J, Cano-Megias M, Gonzalez F, Shabaka A, López-Rubio ME, Fenollosa MA, Martín-Penagos L, Da Silva I, Titos JA, de Córdoba SR, de Jorge EG, Praga M. Development and validation of a nomogram to predict kidney survival at baseline in patients with C3 glomerulopathy. *Clin Kidney J*. 2022; 15(9): 1737-46. Article. IF: 4.6; Q1
- Carriazo S, Aparicio-Madre MI, Tornero-Molina F, Fernández-Lucas M, Paraiso-Cuevas V, González-Parra E, Del Río-Gallegos F, Marqués-Vidas

dez-Juárez G, Rodríguez A, de José AP, Rabasco C, Rodado R, Fernández L, Gómez VP, Ávila A, Bravo L, Espinosa N, Allende N, de la Nieta MDS, Rodríguez E, Olea T, Melgosa M, Huerta A, Miquel R, Mon C, Fraga G, de Lorenzo A, Draibe J, Cano-Megias M, Gonzalez F, Shabaka A, López-Rubio ME, Fenollosa MA, Martín-Penagos L, Da Silva I, Titos JA, de Córdoba SR, de Jorge EG, Praga M. Longitudinal change in proteinuria and kidney outcomes in C3 glomerulopathy. *Nephrol Dial Transpl*. 2022; 37(7): 1270-80. Article. IF: 6.1; Q1

- Caravaca-Fontán F, Rivero M, Cavero T, Díaz-Encarnación M, Cabello V, Ariceta G, Quintana LF, Marco H, Barros X, Ramos N, Rodríguez-Mendiola N, Cruz S, Fernández-Juárez G, Rodríguez A, de José AP, Rabasco C, Rodado R, Fernández L, Pérez-Gómez V, Ávila A, Bravo L, Espinosa N, Allende N, de la Nieta MDS, Rodríguez E, Olea T, Melgosa M, Huerta A, Miquel R, Mon C, Fraga G, de Lorenzo A, Draibe J, González F, Shabaka A, López-Rubio ME, Fenollosa MA, Martín-Penagos L, Da Silva I, Titos JA, de Córdoba SR, de Jorge EG, Praga M. Development and validation of a nomogram to predict kidney survival at baseline in patients with C3 glomerulopathy. *Clin Kidney J*. 2022; 15(9): 1737-46. Article. IF: 4.6; Q1
- Carriazo S, Aparicio-Madre MI, Tornero-Molina F, Fernández-Lucas M, Paraiso-Cuevas V, González-Parra E, Del Río-Gallegos F, Marqués-Vidas

M, Alcazar-Arroyo R, Martín-Muñoz J, Sanchez-Villanueva R, Gil-Casares B, Gutiérrez-Martínez E, Martínez-Rubio MP, Ortiz A. Impact of different COVID-19 waves on kidney replacement therapy epidemiology and mortality: REMER 2020. *Nephrol Dial Transpl*. 2022; 37(11): 2253-63. Article. IF: 6.1; Q1

- de Vries JC, van Gelder MK, Cappelli G, Rubio MAB, Verhaar MC, Gerritsen KGF. Evidence on continuous flow peritoneal dialysis: A review. *Semin Dialysis*. 2022; 35(6): 481-97. Review. IF: 1.6; Q4
- García-Llana H, Panizo N, Gandía L, Orti M, Giménez-Civera E, Forquet C, D'Marco L, Puchades MJ, Sargsyan M, Sanchis I, Ribera C, Marco MI, Ferrá CM, Pérez-Baylach CM, Bonilla B, Frances FM, Pérez-Bernat E, Sancho A, Gorriç JL. COVID-19 vaccination improved psychological distress (anxiety and depression scores) in chronic kidney disease patients: a prospective study. *Vaccines (Basel)*. 2022; 10(2): 299. Article. IF: 7.8; Q1
- Gonzalez-García MC, Pérez Montero P, Peña Burgos EM, Vega Cabrera C, Hernández Cabrero T, Rivas Becerra B, Yébenes L, Hardisson D. SARS-CoV-2 infection associated with monoclonal gammopathy. A case report based on the study of minimally invasive ultrasound-guided autopsy. *Rev Esp Patol*. 2022; 55(1): 41-45. Article. Not Indexed
- Jimenez-Heffernan JA, Rodríguez-García AM, Cima L, Gordillo CH, López-Ferrer P, Vicandi

B. A comprehensive review of the tigroid background cytological concept: what, when, where and why? *Pathologica*. 2022; 114(2): 121-7. Review. IF: 3.5; Q3

- Kopytina V, Pascual-Antón L, Toggweiler N, Arriero-Pais EM, Strahl L, Albar-Vizcaino P, Sucunza D, Vaquero JJ, Steppan S, Piecha D, López-Cabrera M, González-Mateo GT. Steviol glycosides as an alternative osmotic agent for peritoneal dialysis fluid. *Front Pharmacol*. 2022; 13: 868374. Article. IF: 5.6; Q1
- Leon Machado LM, López OM, Hernández Perdomo YH, Pérez T, González García E, Selgas Gutierrez R, Jiménez Martín C. Subcutaneous tocilizumab in chronic active humoral kidney graft rejection. *Nefrología*. 2022; 42(4): 498-500. Letter. IF: 2.6; Q3
- Páez-Vega A, Gutiérrez-Gutiérrez B, Agüera ML, Facundo C, Redondo-Pachón D, Suner M, López-Oliva MO, Yuste JR, Montejo M, Galeano-Álvarez C, Ruiz-San Millán JC, Los-Arcos I, Hernández D, Fernández-Ruiz M, Muñoz P, Valle-Arroyo J, Cano A, Rodríguez-Benot A, Crespo M, Rodelo-Haad C, Lobo-Acosta MA, Garrido-Gracia JC, Vidal E, Guirado L, Cantisan S, Torre-Cisneros J. Immunoguided discontinuation of prophylaxis for cytomegalovirus disease in kidney transplant recipients treated with antithymocyte globulin: A randomized clinical trial. *Clin Infect Dis*. 2022; 74(5): 757-65. Article. IF: 11.8; D1



- Quiroga B, Soler MJ, Ortiz A, Bernat A, Díaz ABM, Mantecón CJJ, Pérez VOG, González CC, Cervienka M, Mazuecos A, Cazorla JM, Di Riso MC, Martínez S, Díaz MO, Valverde RL, Marquéz MGS, Novillo CL, Parra EG, Gracia-Iguacel C, de Tomas MTR, Cervera MCA, Giorgi M, Ramos PM, Carmona NM, Toapanta N, Cigarran S, San Millán JCR, Estupinan RS, Crespo M, Linaza BV, Martín MJ, Jiménez LRO, Soriano S, Ferri DG, Sanchez MSP, Yugueros A, Leyva A, Rojas J, Gansevoort RT, de Sequera P (Bajo Rubio A, del Peso Gilsanz G, Ossorio González M, Sánchez Villanueva R, Lopez Oliva MO). Loss of humoral response 3 months after SARS-CoV-2 vaccination in the CKD spectrum: the multicentric SENCOVAC study. *Nephrol Dial Transpl.* 2022; 37(5): 994-9. Article. IF: 6.1; Q1
- Quiroga B, Soler MJ, Ortiz A, Gansevoort RT, Leyva A, Rojas J, de Sequera P, (Bajo Rubio A, del Peso Gilsanz G, Ossorio González M, Sánchez Villanueva R, Lopez Oliva MO). Long-term dynamic humoral response to SARS-CoV-2 mRNA vacci-

nes in patients on peritoneal dialysis. *Vaccines (Basel).* 2022; 10(10): 1738. Article. IF: 7.8; Q1

- Quiroga B, Soler MJ, Ortiz A, Mantecón CJJ, Pérez NN, Martín MS, Sato Y, Franco AJM, Zambrano DFP, Valverde RL, Díaz MO, González CC, López JMC, Pereira M, Parra EG, Horrillo AS, González CS, Toapanta N, Guldris SC, Hernández RS, Sánchez SP, Rincón MM, García-Fernández N, Castro NB, Mateo RC, Morales MAQ, Escamilla-Cabrera B, Godoy IB, Casanova BGC, Leyva A, Rojas J, Gansevoort RT, de Sequera P, (Bajo Rubio A, del Peso Gilsanz G, Ossorio González M, Sánchez Villanueva R, Lopez Oliva MO). Anti-Spike antibodies 3 months after SARS-CoV-2 mRNA vaccine booster dose in patients on hemodialysis: the prospective SENCOVAC study. *Clin Kidney J.* 2022; 15(10): 1856-64. Article. IF: 4.6; Q1
- Quiroga B, Soler MJ, Ortiz A, Orero E, Tejedor S, Mantecón CJJ, Pérez VOG, Franco AJM, Sánchez CA, Carretero MP, Rodríguez MTJ, Di Riso MAC, Martínez S, González CC, Cervienka M,

Carmona NM, Arroyo D, del Valle KMP, de Arriba G, Mazuecos A, Cazorla JM, Pereira M, Parra EG, Márquez MGS, Novillo CL, Ruiz CT, Cervera MCA, Ramos PM, Horrillo AS, Martín IJ, Toapanta N, Guldris SC, López MF, San Cecilio R, Linaza BV, Pesquera IM, Estupinan RS, Zamora R, Soriano S, de Bustillo EM, Sánchez MSP, Puerto AIM, Yugueros A, Pacios LM, Leyva A, Rojas J, Gansevoort RT, de Sequera P, (Bajo Rubio A, del Peso Gilsanz G, Ossorio González M, Sánchez Villanueva R, Lopez Oliva MO). Humoral response to third dose of sars-cov-2 vaccines in the CKD Spectrum. *Clin J Am Soc Nephro.* 2022; 17(6): 872-6. Letter. IF: 9.8; D1

- Quiroga B, Soler MJ, Ortiz A, Vaquera SM, Mantecón CJJ, Useche G, Márquez MGS, Carretero M, Rodríguez MTJ, Ramos PM, San Millán JCR, Toapanta N, Gracia-Iguacel C, Cervera MCA, Lara NB, Leyva A, Rojas J, Gansevoort RT, de Sequera P, (Bajo Rubio A, del Peso Gilsanz G, Ossorio González M, Sánchez Villanueva R, Lopez Oliva MO). Safety and immediate humoral response of COVID-19 vaccines in chronic kidney disease patients: the SENCOVAC study. *Nephrol Dial Transpl.* 2022; 37(10): 1868-78. Article. IF: 6.1; Q1
- Roblero MFS, Rubio MAB, González-Moya M, Varela JC, Alba AP, Gumpert JV, Cigarran S, Vidau P, Marcos SG, Luquin PA, Píera EC, Marino AG, Espigares MJ, Molina MD, Molina P. Experience in Spain with the first patients in home hemodialysis treated with low-flow dialysate monitors. *Nefrología.* 2022; 42(4): 460-70. Article. IF: 2.6; Q3
- Rodríguez-Díez RR, Tejera-Muñoz A, Esteban V, Steffensen LB, Rodríguez-Díez R, Orejudo M, RAYEGO-MATEOS S, Falke LL, Cannata-Ortiz P, Ortiz A, Egido J, Mallat Z, Ana MB, Bajo MA, Goldschmeding R, Ruiz-Ortega M. CCN2 (Cellular Communication Network Factor 2) Deletion alters vascular integrity and function predisposing to aneurysm formation. *Hypertension.* 2022; 79(3): E42-55. Article. IF: 8.3; Q1
- Rodríguez-Sanz A, Sánchez-Villanueva R, Domínguez-Ortega J, Álvarez L, Fiandor A, Nozal P, Sanz P, Pizarro-Sánchez MS, Andrés E, Cabezas A, Pérez-Alba A, Bajo MA, Selgas R, Bellón T. Characterization of hypersensitivity reactions to polysulfone hemodialysis membranes. *Ann Allerg Asthma Im.* 2022; 128(6): 713-20. Article. IF: 5.9; Q2
- Roger M, Gallego RH, Jimenez VM, Pérez JCR, Furlano M, Atxer LS, Zurro DG, Casabona CMR,

Gomez CG, Bermudez PP, "Et al". CKD: The burden of disease invisible to research funders. *Nefrología.* 2022; 42(1): 65-84. Article. IF: 2.6; Q3

- Santos-Alonso C, González-García E, Ruiz-Carrascosob G, Loeches-Yagüe B. Bacteremia due to C. jejuni in kidney transplant patients. Is immediate post-transplant immunosuppression a risk factor? *Enferm Infec Micr Cl.* 2022; 40(5): 275-6. Letter. IF: 2.5; Q4
- Santos-Alonso C, Martín MM, Villanueva RS, García LA, Gallardo MAV, Rubio MAB, Gilsanz GD, González MO, Gutiérrez RS. Pruritus in dialysis patients. Review and new perspectives. *Nefrología.* 2022; 42(1): 15-21. Review. IF: 2.6; Q3

## ● Research projects

**Bajo Rubio MA.** Abordaje nutricional en pacientes con enfermedad renal. Fresenius Kabi España S.A.U. 2021-Ongoing.

Management centre: FIBHULP

**Bajo Rubio MA.** Biopsia líquida en diálisis peritoneal: correlación biopsia /efluente peritoneal (PI18/00882). ISCIII. 2019-2023.

Management centre: FIBHULP

**Bajo Rubio MA.** Clinical validation of a continuous flow peritoneal dialysis system, with dialysate regeneration (CORDIAL). UE. 2020-2024.

Management centre: FIBHULP

**Bajo Rubio MA.** Las células mesoteliales del efluente crecidas ex vivo reflejan las alteraciones peritoneales encontradas en la biopsia peritoneal. Oportunidades adicionales para biomarcadores en el efluente. Fundación SENEPRO. 2016-Ongoing.

Management centre: FIBHULP

**Fernández Juárez GM.** Aproximación diagnóstica y terapéutica de las microangiopatías trombóticas. Alexion Pharma Spain S.L. 2022-Ongoing.

Management centre: FIBHULP

**Jiménez Martín C.** Desarrollo y aplicación de





un programa grupal de atención psicológica basada en las preferencias y valores con el objetivo de mejora de resultados en salud en el paciente con trasplante renal. Astellas Pharma, S.A. 2018-Ongoing.

**Management centre:** FIBHULP

**Jiménez Martín C.** Evaluación de la microcirculación cortical del trasplante renal a largo plazo medida por ecografía con contraste y su correlación histopatológica por biopsia renal. Sociedad Madrileña de Trasplantes. 2019-Ongoing.

**Management centre:** FIBHULP

**Sánchez Villanueva R.** Creación de un centro de referencia para el estudio de los mecanismos implicados en las reacciones de hipersensibilidad a las membranas de hemodiafiltración basadas en polysulfona. Nipro Europe NV. 2017-Ongoing.

**Management centre:** FIBHULP

### ● Cibers and Retics

**Bajo Rubio MA.** Red de Investigación Renal (REDinREN)(RD16/0009/0008). ISCIII. (31/12/2022). FIBHULP

**Bajo Rubio MA.** Inflamación e inmunopatología de órganos y sistemas (RD21/0005/0018). ISCIII. (31/12/2024). FIBHULP

**Fernández Juárez GM.** Inflamación e inmunopatología de órganos y sistemas (RD21/0005/0030). ISCIII. (31/12/2024). FIBHULP

### ● Clinical trials

**González García ME.** Prevalencia de fragilidad en pacientes con enfermedad renal crónica en lista de espera de trasplante renal en España: un estudio multicéntrico.

**Type:** No EPA. PI-5117 FRAILIST.

**Sponsored by:** Sociedad Española de Trasplantes.

**Signed date:** 09/03/2022

**Jiménez Martín C.** Estudio observacional longitudinal para determinar la asociación entre la respuesta farmacodinámica del paciente al tratamiento inmunosupresor medida in vitro con nmunobiograma y la presencia de signos de rechazo inmunológico en biopsias del injerto en pacientes con trasplante renal. Estudio biotrain.

**Type:** EPA-OD. HULP code: PI-4955 PI-4955 BH-IMBG-TR-202.

**Sponsored by:** Biohope Scientific Solutions For Human Health S.L.

**Signed date:** 10/01/2022

**Sánchez Villanueva RJ.** Estudio multicéntrico, doble ciego, aleatorizado y controlado con placebo para evaluar la eficacia y la seguridad de nemolizumab en sujetos con enfermedad renal crónica con prurito moderado o intenso asociado.

**Type:** Clinical Trials, phase II. 2022.034.

**Sponsored by:** Galderma S.A.

**Signed date:** 07/06/2022

### ● Patents and trademarks

**Selgas Gutiérrez R, Bellón Heredia T, Rodríguez Sanz AI, Álvarez Builla J, Vaquero López JJ, Sánchez Alonso P, Alajarín Fernández R,** inventors; FIBHULP, Universidad de Alcalá, assignees. Use of compounds derived from salts of pyridazine[1',6':1,2]pyrido[3,4-b]indolinium as anti-inflammatory agents. P201331143, PCT/ES2014/070603; 2013 July 25.

**Selgas Gutiérrez R, Bellón Heredia T, Rodríguez Sanz AI, Álvarez Builla J, Vaquero López JJ, Sánchez Alonso P, Alajarín Fernández R,** inventors; FIBHULP, Universidad de Alcalá, assignees. Use of compounds derived from salts of pyridazine[3,2-b]benzimidazolium as anti-inflammatory agents. P201430411, PCT/ES2014/070603; 2013 July 25.

**Aguilera Peralta AI, López-Cabrera M, Selgas Gutiérrez R, Steppan S, Passlickdeetjen J,** inventors; Fresenius Medical Care Deutschland GMBH, assignee. Pharmaceutical compositions containing steviolides. PCT/EP2015/074955, EP3212199, US2017304335, CN107073022; 2014 October 31.

**López-Cabrera M, Aguilera Peralta AI, Selgas Gutiérrez R, Passlickdeetjen J. Buechel J, Steppan S,** inventors; Fresenius Medical Care AG & Co. KGaA, assignee. Method and kit for diagnosing epithelial to mesenchymal transition of the peritoneum (EMT-Chip). WO2017042253, DE102015115158; 2015 September 09.