



3.6.7 Translational Research and Innovation in General and Digestive Surgery Group

Publications: 54

Q1: 28

COMPOSITION

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STRATEGIC OBJECTIVE

PROBLEM: Surgery and perioperative care encompass one of the most expensive and resource-intensive areas of clinical medicine. Surgical patients undergo complex interventions, with the goal of curing or at least relieving distressing symptoms from different medical conditions. These same interventions, however, may sometimes result ineffective in achieving this goal. Additionally, they can provoke complications (morbidity) and further affect a patient's physical, mental, and emotional states.

APPROACH: The Translational Research & Innovation in General Surgery Group (GITIC) is a multidisciplinary group comprised of surgeons, nurses, and biologists, with various areas of

dedication and expertise. The GITIC team works together with the common goal of using surgical innovation and diverse research initiatives to offer the highest level of patient care possible today.

Given its broad knowledge base and skill set, projects that GITIC currently develops include lines of basic science and experimental research, translational and pre-clinical surgical models, clinical investigation, analysis of post-surgical outcomes, studies involving economic evaluation, the creation of mathematical models, and surgical device design and implementation.

In order to fulfill its broad research interests and initiatives, GITIC actively collaborates not only



with other groups within Hospital Universitario La Paz and IdiPAZ but also other hospitals and public and private research institutions in Spain and abroad. The following is a list of some of GITIC's current collaborations:

- Donation & Transplantation Institute (DTI), Barcelona, España.
- Guanguong Shunde Innovative Design Institution, Guangdong, China.

- Hospital Virgen de la Salud, Toledo, España.
- Universidad Internacional de Catalunya (UIC), Sant Cugat, España.
- Policlinico Universitario "A. Gemelli", Università Cattolica del Sacro Cuore, Roma, Italia.
- Instituto de Empresa (IE), Madrid, España.
- Tekniker, Gipuzkoa, España.

RESEARCH LINES

Injury, inflammation, organ failure, & transplantation.

- Assessment and implications of chronic inflammation in obesity.
- Experimental models of end-stage liver disease and portal hypertension.
- Applicability and results of liver transplantation in the treatment of acute-on-chronic liver failure.
- Approaches to transplantation in patients with complex portal vein thrombosis.
- Translation and clinical research in ischemia-reperfusion injury.
- Novel preservation solutions and techniques of in situ and ex situ organ machine perfusion.
- Clinical outcomes and strategies for improvement in donation after circulatory death (DCD) organ transplantation.
- Assessment and clinical implications of markers of allograft dysfunction following liver transplantation.

Surgical oncology.

- Evaluation of a novel polyfunctional immune liquid biopsy platform to predict and improve responses to cancer immunotherapy using innate immunomodulators.
- Evaluation of the utility of cryoablation to provoke immune activation and response to immunotherapy in primary breast tumors.
- Evaluation of the diagnostic and therapeutic role of novel immune checkpoints in colon cancer.
- Combination of "omic" and imaging techniques to identify markers associated with response to neoadjuvant therapy in rectal cancer patients.

- Development of three-dimensional in vitro organoid biomodels of colon cancer.
- Effectiveness and safety of hyperthermic intraperitoneal chemotherapy in the prevention of peritoneal recurrence in high-risk colorectal cancer patients.
- Immunological and molecular predictors of ovarian cancer arising in the background of endometriosis (Collaboration with H.U. La Paz Gynecology Service).

Surgical technology & innovation:

- Development and pre-clinical evaluation of a novel device for ex situ liver machine perfusion.
- Development and clinical trial assessment on the safety and feasibility of a novel rectoscope for rectal cancer surgery.
- Development and utility assessment of novel surgical drains.
- Evaluation of novel surgical techniques strategies to reduce drainage following axillary lymphadenectomy in breast cancer therapy.

Value-based care:

- Patient safety and prevention of perioperative infection.
- Evaluation of "best possible outcomes" (benchmarks) in surgical care.
- Assessment of perioperative complications, patient quality of life, and postoperative disability following general surgical operations.
- Cost-effectiveness and cost-utility of postoperative cancer surveillance strategies.
- Economic evaluation of novel surgical approaches and technologies.

RESEARCH ACTIVITY

● Doctoral theses

Vilar Tabanera A. Influencia de los valores preoperatorios de hormona paratiroides en el desarrollo de hipoparatiroidismo postquirúrgico [dissertation]. Alcalá de Henares: UAH: 2022(11/07/2022).

Director: Gómez Ramírez J, Jesús Acero J.

Spagnolo E. Endometriosis intestinal y complicaciones postoperatorias: el papel de la cirugía guiada por fluorescencia [dissertation]. Madrid: UAM: 2022(31/05/2022).

Director: Hernández Gutiérrez MA Pascual Migueláñez I.

Gortázar de las Casas S. Síndrome de resección anterior baja en pacientes intervenidas

de endometriosis profunda [dissertation]. Madrid: UAM: 2022(18/10/2022).

Director: Pascual Migueláñez I, Hernández Gutiérrez MA.

● Publications

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R, Gutelkin M, Konney TO, Ng J, Pareja R, Seenivasagam RK, Sehoul J, Surappa STS, Bhangu A, Leung E, Sundar S, (Prieto Nieto MI). Outcomes of gynecologic cancer surgery during the COVID-19 pandemic: an international, multicenter, prospective CovidSurg-Gynecologic Oncology Cancer study. *Am J Obstet Gynecol.* 2022; 227(5): 735. Article. IF: 9.8; D1

- Hessheimer AJ, Rosa G, Gastaca M, Ruiz P, Otero A, Gómez M, Alconchel F, Ramírez P, Boscá



1 Introduction

2 Executive Summary

3 Information Groups by Area

4 Associated Clinicians

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1 Introduction

2 Executive Summary

3 Information Groups by Area

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Sponsored by: Crazy Science & Business S.L.

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