Informe anual de Actividades 2024
Cátedra UAM-Fundación Instituto Roche
de Medicina Personalizada de Precisión

Cátedra de
Medicina Personalizada de Precisión

UAM Universidad Autónoma de Madrid

Fundación InstitutoRoche

Diciembre de 2024

Apartados

INFORME DE ACTIVIDADES 2024 (anual)

Generación de Conocimiento

1. Publicación del artículo " High Mechanical Conditioning by Tumor Extracellular Matrix Stiffness Is a Predictive Biomarker for Antifibrotic Therapy in HER2-Negative Breast Cancer"

Clin Cancer Res (IF: 12.53; **Q1**). 2024 Nov 15;30(22):5094-5104. doi: 10.1158/1078-0432.CCR-24-1518.

CLINICAL CANCER RESEARCH | PRECISION MEDICINE AND IMAGING

High Mechanical Conditioning by Tumor Extracellular Matrix Stiffness Is a Predictive Biomarker for Antifibrotic Therapy in HER2-Negative Breast Cancer

Miguel Quintela-Fandino[1,2,3], Begoña Bermejo[4], Esther Zamora[5], Fernando Moreno[6], José Ángel García-Saenz[8], Sonia Pernas[7], Noelia Martínez-Jañez[8], Desirée Jiménez[1,9], Encarna Adrover[10], Raquel de Andrés[11], Silvana Mourón[1], María J. Bueno[1], Luis Manso[2], Gemma Viñas[12], Emilio Alba[13], Antonio Llombart-Cussac[14], Javier Cortés[15,16,17], Cristina Tebar[4], Denise J. Roe[18], Adam Grant[19], Adam Watson[19], Ramon Colomer[3,20], and Ghassan Mouneimne[19,21]

ABSTRACT

Purpose: Tumor progression has been linked to stiffening of the extracellular matrix caused by fibrosis. Cancer cells can be mechanically conditioned by stiff extracellular matrix, exhibiting a 1,004-gene signature [mechanical conditioning (MeCo) score]. Nintedanib has demonstrated antifibrotic activity in idiopathic pulmonary fibrosis. This study explores nintedanib's antifibrotic effect on breast cancer outcomes.

Experimental Design: We present long-term follow-up and analysis of a neoadjuvant randomized phase II trial in early HER2-negative breast cancer. Patients ($N = 130$) underwent a baseline biopsy and received 12 paclitaxel courses alone (control arm) or in combination with nintedanib (experimental arm). The tumor MeCo score was determined by RNA sequencing. The primary aim was to assess nintedanib's impact on event-free survival based on MeCo scores.

Results: Follow-up data were retrieved from 111 patients; 75 baseline and 24 post-run-in phase samples were sequenced. After median follow-up of 9.67 years, median event-free survival was not statistically different between arms ($P = 0.37$). However, in the control arm, high- versus low-MeCo patients had a statistically higher relapse risk: HR = 0.21; $P = 0.0075$. This risk was corrected by nintedanib in the experimental arm: HR = 0.37; $P = 0.16$. Nintedanib demonstrated pharmacodynamic engagement, reducing the MeCo score by 25% during the run-in phase ($P < 0.01$). Patients with low MeCo after run-in had the best long-term prognosis (HR = 0.087; $P = 0.03$).

Conclusions: High MeCo is predictive of poor outcomes in HER2-negative early breast cancer, although this risk can be mitigated by nintedanib, which is able to specifically reduce MeCo.

[1]Breast Cancer Clinical Research Group, CNIO, Madrid, Spain. [2]Medical Oncology, Hospital Universitario 12 de Octubre, Madrid, Spain. [3]Chair of Personalized Precision Medicine, Universidad Autónoma de Madrid (UAM-Fundacion Instituto Roche), Madrid, Spain. [4]Medical Oncology, Hospital Clínico Universitario de Valencia, Valencia, Spain. [5]Medical Oncology, Hospital Universitario Vall d'Hebron, Barcelona, Spain. [6]Medical Oncology, Hospital Clínico Universitario San Carlos, Madrid, Spain. [7]Medical Oncology, Institut Català d'Oncologia – IDIBELL, L'Hospitalet de Llobregat – Barcelona, Barcelona, Spain. [8]Medical Oncology, Hospital Universitario Ramón y Cajal, Madrid, Spain. [9]Medical Oncology, Hospital Universitario de Fuenlabrada, Madrid, Spain. [10]Medical Oncology, Complejo Hospitalario Universitario de Albacete, Albacete, Spain. [11]Medical Oncology, Hospital Clínico Lozano Blesa, Zaragoza, Spain. [12]Institut Catala d'Oncologia-Girona, Hospital Doctor Josep Trueta, Girona, Spain. [13]Medical Oncology, Hospital Universitario Virgen de la Victoria, Málaga, Spain. [14]Medical Oncology, Hospital Universitario Arnau de Vilanova, Valencia, Spain. [15]Quironsalud Group, Pangaea Oncology, International Breast Cancer Center, Barcelona, Spain. [16]Medical Scientia Innovation Research (MEDSIR), Barcelona, Spain. [17]Faculty of Biomedical and Health Sciences, Department of Medicine, Universidad Europea de Madrid, Madrid, Spain. [18]Mel and Enid Zuckerman College of Public Health, The University of Arizona Cancer Center, Tucson, Arizona. [19]MeCo Diagnostics, San Diego, California. [20]Medical Oncology, Hospital Universitario La Princesa, Madrid, Spain. [21]University of Arizona Cancer Center, Tucson, Arizona.

Previous presentations of the study: A partial version of this manuscript, including only the relationship between MeCo score and pCR, was presented at the 2023 SABCS meeting.

Corresponding Authors: Miguel Quintela-Fandino, Clinical Research Program, Spanish National Cancer Research Center – CNIO, Melchor Fernández Almagro, 3, Madrid 28029, Spain. E-mail: miquintela@cnio.es; and Ghassan Mouneimne, Cellular and Molecular Medicine, College of Medicine Tucson, The University of Arizona Cancer Center, 1515 North Campbell Avenue, Tucson, AZ 85724-5024. E-mail: gmouneimne@arizona.edu

Clin Cancer Res 2024;XX:XX–XX

doi: 10.1158/1078-0432.CCR-24-1518

2. Publicación del artículo " Biomarkers in breast cancer 2024: an updated consensus statement by the Spanish Society of Medical Oncology and the Spanish Society of Pathology"

Clin Transl Oncol (IF: 3.4; **Q3**). 2024 Dec;26(12):2935-2951. doi: 10.1007/s12094-024-03541-1.

Clinical and Translational Oncology
https://doi.org/10.1007/s12094-024-03541-1

REVIEW ARTICLE

Biomarkers in breast cancer 2024: an updated consensus statement by the Spanish Society of Medical Oncology and the Spanish Society of Pathology

Ramon Colomer[1] · Blanca González-Farré[2] · Ana Isabel Ballesteros[3] · Vicente Peg[4] · Begoña Bermejo[5] · Belén Pérez-Mies[6] · Susana de la Cruz[7] · Federico Rojo[8] · Sonia Pernas[9] · José Palacios[10]

Received: 23 May 2024 / Accepted: 25 May 2024

Abstract

This revised consensus statement of the Spanish Society of Medical Oncology (SEOM) and the Spanish Society of Pathological Anatomy (SEAP) updates the recommendations for biomarkers use in the diagnosis and treatment of breast cancer that we first published in 2018. The expert group recommends determining in early breast cancer the estrogen receptor (ER), progesterone receptor (PR), Ki-67, and Human Epidermal growth factor Receptor 2 (HER2), as well as BReast CAncer (*BRCA*) genes in high-risk HER2-negative breast cancer, to assist prognosis and help in indicating the therapeutic options, including hormone therapy, chemotherapy, anti-HER2 therapy, and other targeted therapies. One of the four available genetic prognostic platforms (Oncotype DX®, MammaPrint®, Prosigna®, or EndoPredict®) may be used in ER-positive patients with early breast cancer to establish a prognostic category and help decide with the patient whether adjuvant treatment may be limited to hormonal therapy. In second-line advanced breast cancer, in addition, phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha (PIK3CA) and estrogen receptor 1 (ESR1) should be tested in hormone-sensitive cases, *BRCA* gene mutations in HER2-negative cancers, and in triple-negative breast cancer (TNBC), programmed cell death-1 ligand (PD-L1). Newer biomarkers and technologies, including tumor-infiltrating lymphocytes (TILs), homologous recombination deficiency (HRD) testing, serine/threonine kinase (AKT) pathway activation, and next-generation sequencing (NGS), are at this point investigational.

Authors and Affiliations

Ramon Colomer[1] · Blanca González-Farré[2] · Ana Isabel Ballesteros[3] · Vicente Peg[4] · Begoña Bermejo[5] · Belén Pérez-Mies[6] · Susana de la Cruz[7] · Federico Rojo[8] · Sonia Pernas[9] · José Palacios[10]

✉ Ramon Colomer
rcolomer@seom.org

✉ José Palacios
jose.palacios@salud.madrid.org

Blanca González-Farré
mbgonzal@clinic.cat

Ana Isabel Ballesteros
anabelballes@gmail.com

Vicente Peg
vicente.peg@vallhebron.cat

Begoña Bermejo
begobermejo@gmail.com

Belén Pérez-Mies
bperezmies@gmail.com

Susana de la Cruz
sdelacrs@navarra.es

Federico Rojo
frojo@fjd.es

Sonia Pernas
spernas@iconcologia.net

[1] UAM Personalised Precision Medicine Chair & Medical Oncology Department, La Princesa University Hospital and Research Institute, C/Diego de León, 62, 28006 Madrid, Spain

[2] Pathological Anatomy Service, Clinic Hospital, Barcelona, Spain

[3] Medical Oncology Department, La Princesa University Hospital, Madrid, Spain

[4] Pathological Anatomy Service, Vall d'Hebron University Hospital, Barcelona, Spain

[5] Medical Oncology Department, Biomedical Research Institute INCLIVA, Medicine Department of the University of Valencia and Clinic University Hospital, Valencia, Spain

[6] Pathological Anatomy Service, Ramón y Cajal University Hospital, Faculty of Medicine, University of Alcalá, IRYCIS and CIBERONC, Madrid, Spain

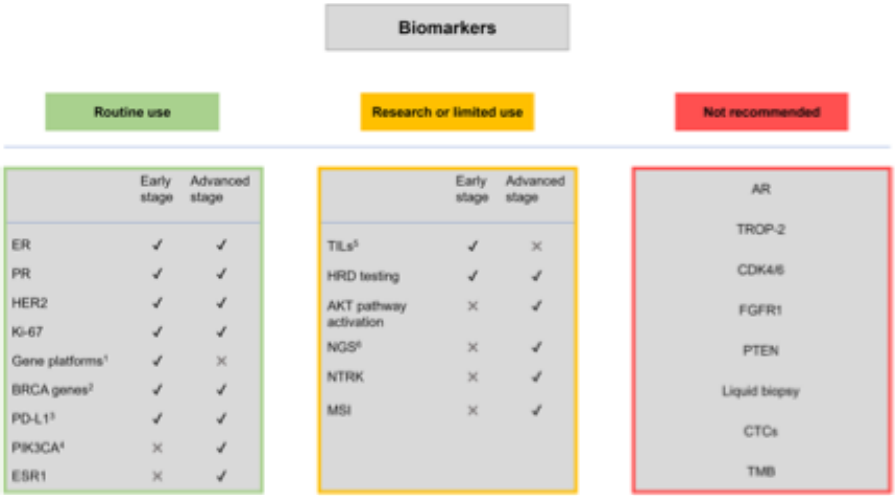
[7] Medical Oncology Department, Navarra University Hospital, Navarre, Spain

[8] Anatomy Service, Fundación Jiménez Díaz University Hospital and CIBERONC, Madrid, Spain

[9] Oncology Department, Catalan Institute of Oncology (ICO)-IDIBELL, L'Hospitalet, Barcelona, Spain

[10] Pathological Anatomy Service, Department of Pathology, Ramón y Cajal University Hospital, Faculty of Medicine, University of Alcalá, IRYCIS and CIBERONC, Ctra. Colmenar Viejo, Km 9,1, 28034 Madrid, Spain

A continuación, mostramos la figura más relevante de este artículo:



3. Publicación del artículo " Immunome profiling in prostate cancer: a guide for clinicians"

Front Immunol (IF: 7.56; **Q1**). 2024 Nov 20;15:1398109. doi: 10.3389/fimmu.2024.1398109.

Immunome profiling in prostate cancer: a guide for clinicians

Luis San-Jose Manso[1], Arantzazu Alfranca[2,3], Ignacio Moreno-Pérez[4], María Ruiz-Vico[5], Clara Velasco[1], Patricia Toquero[3,6], María Pacheco[7], Almudena Zapatero[8], Diego Aldave[8], Guillermo Celada[1], Eduardo Albers[1], María-Dolores Fenor de la Maza[9], Jorge García[10], Elena Castro[5], David Olmos[5], Ramón Colomer[3,6] and Nuria Romero-Laorden[3,6]*

[1]Urology Department, Hospital Universitario La Princesa, Madrid, Spain, [2]Immunology Department, Hospital Universitario La Princesa, Madrid, Spain, [3]Personalized Precision Medicine Chair, Universidad Autónoma de Madrid, Madrid, Spain, [4]Medical Oncology Department, Hospital Universitario Clínico San Carlos, Madrid, Spain, [5]Medical Oncology Department, Hospital Universitario 12 de Octubre, Madrid, Spain, [6]Medical Oncology Department, Hospital Universitario La Princesa, Madrid, Spain, [7]GU Translational Research Unit, Instituto de Investigación Sanitaria de la Princesa, Madrid, Spain, [8]Radiation Oncology Department, Hospital Universitario La Princesa, Madrid, Spain, [9]Medical Oncology Department, Clínica Universitaria de Navarra, Madrid, Spain, [10]Biocomputing Unit, Hospital Niño Jesús, Instituto de Investigación Sanitaria de la Princesa, Madrid, Spain

Tumor immune microenvironment (TIME) plays a key role to understand how tumors respond to prostate cancer (PC) therapies and potential mechanisms of resistance. Previous research has suggested that specific genomic aberrations, such as microsatellite instability (MSI) or CDK12 bi-allelic loss can allow PC patients more likely to respond to immune checkpoint inhibitors (ICI) or other immune therapies. However, responses to these treatments remain highly variable even in selected patients. Thus, it is essential to obtain more information about tumor immune cells that infiltrate these tumors, and on their plasticity and interactions, in order to better understand the underlying biology to allow development of new therapeutic strategies. This review analyzes: 1) How interactions among immune cell populations and other cells infiltrating the tumor stroma can modulate the progression of PC, 2) How the standard therapies to treat PC (such as androgen deprivation therapy, new androgen-directed hormone therapy or chemotherapy) may influence the dynamic changes of the immunome and 3) What are the limitations in characterizing the immune landscape of the host´s response to tumors.

4. Publicación del artículo " Treatment patterns and outcomes in metastatic castration-resistant prostate cancer patients with and without somatic or germline alterations in homologous recombination repair genes"

Ann Oncol (IF: 32.98; **Q1**).

ESMO GOOD SCIENCE BETTER MEDICINE BEST PRACTICE

ANNALS OF ONCOLOGY driving innovation in oncology

ORIGINAL ARTICLE

Treatment patterns and outcomes in metastatic castration-resistant prostate cancer patients with and without somatic or germline alterations in homologous recombination repair genes

D. Olmos[1,*], D. Lorente[2,3], D. Alameda[4], C. Cattrini[5], N. Romero-Laorden[6], R. Lozano[7], P. P. Lopez-Casas[1], A. Jambrina[1], C. Capone[8], A. M. Vanden Broecke[9], M. Trevisan[10], S. Van Sanden[11], A. Jürgens[12], B. Herrera-Imbroda[4,13] & E. Castro[1,4,*]

[1]Hospital Universitario 12 de Octubre, Instituto de Investigación Sanitaria Hospital 12 de Octubre, Madrid; [2]Instituto Valenciano de Oncología, Valencia; [3]Hospital Provincial de Castellón, Castellón de la Plana; [4]Instituto de Investigación Biomédica de Málaga, Málaga, Spain; [5]Maggiore della Carità University Hospital, Novara, Italy; [6]Cátedra UAM-Fundación Instituto Roche de Medicina Personalizada de Precisión, Hospital Universitario de La Princesa, Madrid; [7]Hospital Universitario de Salamanca, Instituto de Investigación Biomédica de Salamanca (IBSAL), Salamanca, Spain; [8]Janssen Inc., Issy-les-Moulineaux, France; [9]Janssen-Cilag B.V., Beerse, Belgium; [10]Janssen Pharmaceuticals, Zug, Switzerland; [11]Janssen Pharmaceutica NV, Beerse, Belgium; [12]Janssen, Neuss, Germany; [13]Hospital Universitario Virgen de la Victoria, Málaga, Spain

Available online 27 February 2024

Background: Although germline BRCA mutations have been associated with adverse outcomes in prostate cancer (PC), understanding of the association between somatic/germline alterations in homologous recombination repair (HRR) genes and treatment outcomes in metastatic castration-resistant PC (mCRPC) is limited. The aim of this study was to investigate the prevalence and outcomes associated with somatic/germline HRR alterations, particularly *BRCA1/2*, in patients initiating first-line (1L) mCRPC treatment with androgen receptor signalling inhibitors (ARSi) or taxanes.

Patients and methods: Data from 729 mCRPC patients were pooled for CAPTURE from four multicentre observational studies. Eligibility required 1L treatment with ARSi or taxanes, adequate tumour samples and biomarker panel results. Patients underwent paired normal and tumour DNA analyses by next-generation sequencing using a custom gene panel including *ATM*, *BRCA1*, *BRCA2*, *BRIP1*, *CDK12*, *CHEK2*, *FANCA*, *HDAC2*, *PALB2*, *RAD51B* and *RAD54L*. Patients were divided into subgroups based on somatic/germline alteration(s): with *BRCA1/2* mutations (BRCA); with HRR mutations except *BRCA1/2* (HRR non-BRCA); and without HRR alterations (non-HRR). Patients without *BRCA1/2* mutations were classified as non-BRCA. Radiographic progression-free survival (rPFS), progression-free survival 2 (PFS2) and overall survival (OS) were assessed.

Results: Of 729 patients, 96 (13.2%), 127 (17.4%) and 506 (69.4%) were in the BRCA, HRR non-BRCA and non-HRR subgroups, respectively. BRCA patients performed significantly worse for all outcomes than non-HRR or non-BRCA patients ($P < 0.05$), while PFS2 and OS were significantly shorter for BRCA than HRR non-BRCA patients ($P < 0.05$). HRR non-BRCA patients also had significantly worse rPFS, PFS2 and OS than non-HRR patients. Exploratory analyses suggested that for BRCA patients, there were no significant differences in outcomes associated with 1L treatment choice (ARSi or taxanes) or with the somatic/germline origin of the alterations.

Conclusions: Worse outcomes were observed for mCRPC patients in the BRCA subgroup compared with non-BRCA subgroups, either HRR non-BRCA or non-HRR. Despite its heterogeneity, the HRR non-BRCA subgroup presented worse outcomes than the non-HRR subgroup. Screening early for HRR mutations, especially *BRCA1/2*, is crucial in improving mCRPC patient prognosis.

Key words: prostate cancer, homologous recombination repair mutations, overall survival, breast cancer genes 1/2

*Correspondence to: Dr David Olmos, Hospital Universitario 12 de Octubre, Instituto de Investigación Sanitaria Hospital 12 de Octubre, Madrid, Spain.
E-mail: dolmos.imas12@h12o.es (D. Olmos).
Dr Elena Castro, Hospital Universitario 12 de Octubre, Instituto de Investigación Sanitaria Hospital 12 de Octubre, Madrid, Spain; Instituto de Investigación Biomédica de Málaga, Málaga, Spain.
E-mail: ecastro.imas12@h12o.es (E. Castro).

INTRODUCTION

Prostate cancer (PC) is a heterogeneous disease at both the molecular and clinical levels, and the clinical implications of most molecular events are yet to be elucidated.[1] The mechanisms involved in DNA damage repair (DDR), particularly the homologous recombination repair (HRR) pathway, are frequently altered in advanced PC. Up to 30% of metastatic castration-resistant PC (mCRPC) patients have

5. Publicación del artículo científico " Is older age an independent prognostic factor of survival in metastatic colorectal cancer? "

Oncology (IF: 2.94; **Q4**). 2024 Jan 17. doi: 10.1159/000535187

Oncology

Clinical Study

Oncology
DOI: 10.1159/000535187

Received: September 18, 2023
Accepted: November 3, 2023
Published online: January ▪▪▪, 2024

Is Older Age an Independent Prognostic Factor of Survival in Metastatic Colorectal Cancer?

Patricia Toquero[a, b] Rebeca Mondéjar[a, b] Nuria Romero-Laorden[a, b] Elena Méndez[c] Lucía Castillo[a] Berta Hernández Marín[a, b] Olga Donnay[a] Ramon Colomer[a, b]

[a]Medical Oncology Department, La Princesa University Hospital, Madrid, Spain; [b]Precision Medicine Chair, Medical Oncology Department, Universidad Autónoma de Madrid - Roche Institute Foundation- Hospital Universitario de La Princesa, Madrid, Spain; [c]Medical Oncology Department, Henares University Hospital, Coslada, Spain

Keywords
Metastatic colorectal cancer · Advanced age · Prognostic factors · Survival

Abstract

Introduction: Older patients (≤75 years) with advanced colorectal cancer (CRC) may have worse survival than non-older patients. We hypothesized that, rather than age alone, concurrent factors may be more relevant for real-world survival. ***Methods:*** Patients diagnosed with CRC in a 5-year period (2014–2018) were analyzed to determine which factors influenced in overall survival (OS). Kaplan-Meier method was used to estimate OS. Univariate and multivariate analysis was conducted by Cox regression analysis. The study was approved by Ethics Committee. ***Results:*** Out of 477 patients diagnosed with CRC, 231 had advanced disease. Ninety-two patients (40%) were older than 75 years; median OS (mOS) was 17.1 m (95% CI: 14.3–23.3), $p < 0.001$. In non-older patients, mOS was 26.7 m (95% CI: 21.9–32.6), $p < 0.001$.

We evaluated eighteen concurrent factors that included characteristics related to the patient (age, sex, comorbidities, polypharmacy, Eastern Cooperative Oncology Group (ECOG), and nutritional status), to the tumor (stage at diagnosis, tumor side, molecular profile, tumor burden, location, and number of metastasis), and to the treatment administered (systemic treatment for advanced disease, chemotherapy schedule and number of lines, severe adverse events and dose reductions, and surgery of liver metastasis).

In the univariate analysis, age at diagnosis, ECOG, nutritional status, tumor side, molecular profile, tumor burden, systemic treatment for advanced disease, and surgery of liver metastases had significant impact on survival. However, multivariate analysis revealed that only four factors (tumor burden, nutritional status, systemic treatment for advanced disease, and surgery of liver metastases) were independently associated with OS but not older age at diagnosis. ***Conclusion:*** Older age is not an independent survival prognostic factor for advanced CRC. Tumor burden, nutritional status, systemic treatment for advanced disease, and surgery of liver metastasis were significant

karger@karger.com
www.karger.com/ocl

Correspondence to:
Patricia Toquero, kiku.toquero@gmail.com

6. Publicación del artículo " Pain in Long-Term Cancer Survivors: Prevalence and Impact in a Cohort Composed Mostly of Breast Cancer Survivors"

Cancers (Basel) (IF: 6.13; **Q1**)

cancers

MDPI

Article

Pain in Long-Term Cancer Survivors: Prevalence and Impact in a Cohort Composed Mostly of Breast Cancer Survivors

Concepción Pérez [1,*], Dolores Ochoa [1], Noelia Sánchez [1], Ana Isabel Ballesteros [2], Sheila Santidrián [1], Isabel López [1], Rebeca Mondéjar [2], Thiago Carnaval [3], Jesús Villoria [3] and Ramón Colomer [2]

[1] Pain Clinic, Hospital de La Princesa, 28006 Madrid, Spain; dochoa@iis-princesa.org (D.O.); noe.sm@live.com (N.S.); sheilasanber@gmail.com (S.S.); isable1977@hotmail.com (I.L.)
[2] Department of Clinical Oncology, Hospital de la Princesa, 28006 Madrid, Spain; anabelballes@gmail.com (A.I.B.); rmondejar@hotmail.com (R.M.); ramon.colomer@salud.madrid.org (R.C.)
[3] Department of Design and Biometrics, Medicxact, S.L., 28430 Alpedrete, Spain; carnavalthiago@medicxact.es (T.C.); villoriajesus@medicxact.es (J.V.)
* Correspondence: concha.phte@gmail.com

Simple Summary: Although cancer survival is increasing and many survivors report having to endure pain, its prevalence and consequences have received little attention. We found that pain is associated with reduced quality of life as well as diminished emotional and professional performance in long-term cancer survivors. In addition, a neuropathic component often goes underdiagnosed and/or undertreated. Adopting appropriate neuropathic pain diagnostic tools should be standard clinical practice and targeting the neuropathic component seems to be a good, yet underused therapeutic approach which has the potential to improve cancer survivors' health outcomes.

Abstract: Cancer survival is becoming more common which means that there is now a growing population of cancer survivors, in whom pain may be common. However, its prevalence has hardly been addressed systematically. We aimed to assess the prevalence and explore the pathophysiology and impact of pain on health outcomes in cancer survivors. We conducted a retrospective–prospective cohort study in cancer-free patients diagnosed with cancer at least five years before the study start date. We used multivariable regression to establish the association of patients' cancer characteristics with pain, and then the association of patients' pain features with health outcomes and related symptoms. Between March and July 2021, 278 long-term cancer survivors were evaluated. Almost half of them (130/278, 46.8%) had pain, of whom 58.9% had a probable neuropathic component, but only 18 (13.8%) were taking specific drugs for neuropathic pain. A history of surgery-related pain syndrome in breast cancer patients was more than twice as frequent in the pain cohort. Post-chemotherapy and post-radiotherapy pain syndromes were uncommon. Pain was associated with lower QoL, emotional functioning, professional performance, and disability scores. Pain is a frequent health determinant in cancer survivors. Referral to specialised pain services may be a reasonable move in some cases.

Keywords: long-term cancer survivors; neuropathic pain; breast cancer; quality of life; patient outcome assessment

check for updates

Citation: Pérez, C.; Ochoa, D.; Sánchez, N.; Ballesteros, A.I.; Santidrián, S.; López, I.; Mondéjar, R.; Carnaval, T.; Villoria, J.; Colomer, R. Pain in Long-Term Cancer Survivors: Prevalence and Impact in a Cohort Composed Mostly of Breast Cancer Survivors. *Cancers* **2024**, *16*, 1581. https://doi.org/10.3390/cancers16081581

Academic Editor: Yusuke Shiozawa

Received: 26 March 2024
Revised: 16 April 2024
Accepted: 17 April 2024
Published: 20 April 2024

1. Introduction

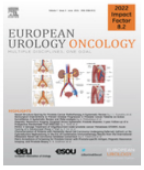
Pain is the most common symptom of cancer at diagnosis and rises in prevalence throughout and beyond cancer treatment [1]. Cancer survival has considerably increased in recent years due to major advances in diagnosis, treatment, and rehabilitation. The 5-year cancer survival rate in Europe exceeds 60% for the most common tumours [2], and around 40% of patients are alive over 10 years after diagnosis [3]. Each year, this should account for over 100,000 new long-term survivors in a medium-sized Western country like Spain [4], many of whom will fully overcome the oncologic disease but will continue to be

7. Publicacion del artículo " Prospective Assessment of Bone Metabolism Biomarkers and Survival in Metastatic Castration-resistant Prostate Cancer Patients Treated with Radium-223: The PRORADIUM Study. "

Eur Urol Oncol (IF: 2.51; **Q1**).

EUROPEAN UROLOGY ONCOLOGY 7 (2024) 447–455

available at www.sciencedirect.com
journal homepage: euoncology.europeanurology.com



European Association of Urology

Prospective Assessment of Bone Metabolism Biomarkers and Survival in Metastatic Castration-resistant Prostate Cancer Patients Treated with Radium-223: The PRORADIUM Study

Nuria Romero-Laorden [a,b,†], David Lorente [c,†], Guillermo de Velasco [d,e], Rebeca Lozano [f], Bernardo Herrera [g,h], Javier Puente [i], Pedro P. López [j], Ana Medina [k], Elena Almagro [l], Enrique Gonzalez-Billalabeitia [d,e], Jose Carlos Villla-Guzman [m], Aránzazu González-del-Alba [n], Pablo Borrega [o], Nuria Laínez [p], Ana Fernández-Freire [q], Amaia Hernández [r], Alejo Rodriguez-Vida [s], Isabel Chirivella [t], Eva Fernandez-Parra [u], Fernando López-Campos [v], Maria Isabel Pacheco [a], Rafael Morales-Barrera [w], Ovidio Fernández [x], Rosa Villatoro [y], Raquel Luque [z], Susana Hernando [aa], Daniel C. Castellano [d,e], Elena Castro [d,bb], David Olmos [d,j,]*

[a] *Medical Oncology Department, Hospital Universitario La Princesa, Madrid, Spain;* [b] *Cátedra UAM-Fundación Instituto Roche de Medicina Personalizada de Precisión, Madrid, Spain;* [c] *Medical Oncology Department, Hospital Provincial de Castellón, Castellón de la Plana, Spain;* [d] *Medical Oncology Department, Hospital Universitario 12 de Octubre, Madrid, Spain;* [e] *Biomarkers in Genito-Urinary Cancers Group, I+12 Biomedical Research Institute, Madrid, Spain;* [f] *Medical Oncology Department, Hospital Universitario de Salamanca, Salamanca, Spain;* [g] *Urology Department, Hospital Universitario Virgen de la Victoria, Málaga, Spain;* [h] *Genitourinary Cancers Traslational Research Unit, Instituto de Investigación Biomédica de Málaga (IBIMA), Málaga, Spain;* [i] *Hospital Clínico San Carlos, Instituto de Investigación Sanitaria del Hospital Clínico San Carlos, Madrid, Spain;* [j] *Genomics and Therapeutics in Prostate Cancer Group, I+12 Biomedical Research Institute, Madrid, Spain;* [k] *Fundación Centro Oncológico de Galicia, A Coruña, Spain;* [l] *Hospital Universitario Quirón, Pozuelo de Alarcón, Spain;* [m] *Hospital General Universitario de Ciudad Real, Ciudad Real, Spain;* [n] *Department of Medical Oncology, Puerta de Hierro-Majadahonda University Hospital, Madrid, Spain;* [o] *Hospital San Pedro de Alcántara, Cáceres, Spain;* [p] *Department of Medical Oncology, Navarra University Hospital, Pamplona, Spain;* [q] *Hospital Universitario Torrecárdenas, Almería, Spain;* [r] *Medical Oncology Department, Gipuzkoa Cancer Unit, OSI Donostialdea - Onkologikoa Foundation, San Sebastián, Spain;* [s] *Medical Oncology Department, Hospital del Mar, CIBERONC, IMIM Research Institute, Barcelona, Spain;* [t] *Medical Oncology Department, INCLIVA Biomedical Research Institute, University of Valencia, Valencia, Spain;* [u] *Hospital Universitario de Valme, Sevilla, Spain;* [v] *Department of Radiation Oncology, Hospital Universitario Ramón y Cajal, Madrid, Spain;* [w] *Vall d'Hebron Institute of Oncology, Vall d'Hebron University Hospital, Universitat Autònoma de Barcelona, Barcelona, Spain;* [x] *Medical Oncology Department, Complexo Hospitalario Universitario de Ourense, Ourense, Spain;* [y] *Hospital Universitario Costa del Sol, Marbella, Spain;* [z] *Hospital Universitario Virgen de las Nieves, Instituto de Investigación Biosanitaria ibs.Granada, Granada, Spain;* [aa] *Fundación Hospital Alcorcón, Alcorcón, Spain;* [bb] *Translational Cancer Genetics Group, I+12 Biomedical Research Institute, Madrid, Spain*

Article info

Article history:
Received 15 July 2023
Received in Revised form
3 September 2023
Accepted 7 September 2023
Available online 12 October 2023

Associate Editor:
Guillaume Ploussard

Abstract

Background: Radium-223 is an active therapy option for bone metastatic castration-resistant prostate cancer (mCRPC). The lack of adequate biomarkers for patient selection and response assessment are major drawbacks for its use.
Objective: To assess the prognostic value of bone metabolism biomarkers (BMBs) in ra-223–treated mCRPC patients.
Design, setting, and participants: A prospective cohort study of mCRPC patients treated with Ra-223 (PRORADIUM study: NCT02925702) was conducted.
Outcome measurements and statistical analysis: The main objective of the study was to evaluate the association between high (≥median) baseline values in at least three bone formation (bone alkaline phosphatase [BAP] and C-terminal type-I collagen propeptide)

† These authors contributed equally as joint-first authors.
* Corresponding author. Genomics and Therapeutics in Prostate Cancer, Clinical and Translational GU Cancer Research Program, Medical Oncology Department, I+12 Biomedical Research Institute, Hospital Universitario 12 de Octubre, Av. de Córdoba, s/n, 28041 Madrid, Spain. Tel. +34 635 616 915.
E-mail address: dolmos.imas12@h12o.es (D. Olmos).

https://doi.org/10.1016/j.euo.2023.09.015

8. Publicación del artículo científico " Distribution of PD-L1, TROP2 and HER2- "lowness" in early triple-negative breast cancer: an opportunity for treatment de-escalation. "

Clinical and Translational Oncology (IF: 3.4; **Q3**)

Clinical and Translational Oncology
https://doi.org/10.1007/s12094-023-03329-9

BRIEF RESEARCH ARTICLE

Distribution of PD-L1, TROP2 and HER2- "lowness" in early triple-negative breast cancer: an opportunity for treatment de-escalation

Maria Jose Bueno[1] · Silvana Mouron[1] · Eduardo Caleiras[2] · Mario Martínez[3] · Luis Manso[4] · Ramón Colomer[5] · Miguel Quintela-Fandino[1]

Received: 21 July 2023 / Accepted: 25 September 2023

Abstract

Background HER2, TROP2 and PD-L1 are novel targets in triple-negative breast cancer (TNBC). The combined expression status of these targets, and whether they can define prognostic subgroups, is currently undefined.

Methods Immunohistochemistry was used to determine HER2, TROP2 and PD-L1 levels in 459 TNBC cases, that received in the adjuvant/neoadjuvant setting active surveillance, CMF, anthracycline-, anthracycline plus taxane-, or carboplatin-containing regimes.

Results HER2-low patients with PD-L1 > 1 CPS (double-positive, herein "DP") had a mean PFS of 4768 days (95% CI: 4267–5268) versus 3522 days (95% CI: 3184–3861) for non-DP patients ($P = 0.002$). Regarding the received adjuvant treatment, DP patients (versus non-DP) receiving anthracyclines plus taxanes exhibited a mean PFS time of 4726 (95% CI: 4022–5430) versus 3302 (95% CI: 2818–3785) days ($P = 0.039$). Finally, 100% of DP patients that received a carboplatin-based regimen were long-term disease-free.

Conclusions Early HER2-low, PD-L1-positive TNBC patients have a very good prognosis, particularly if treated with anthracycline/taxane- or carboplatin-containing regimes.

Keywords Triple-negative breast cancer · PD-L1 · TROP2 · HER2-low · Carboplatin

Introduction

Traditionally, triple-negative breast cancer (TNBC) has been viewed as a disease lacking druggable targets [1]. Recently, the positive effects of immunotherapies in the early [2, 3] and advanced [4–6] disease settings challenge this view. Similarly, the efficacy of the antibody–drug conjugates (ADCs) sacituzumab govitecan against TROP-2 and trastuzumab deruxtecan against HER2 have improved clinical outcomes in the general TNBC subpopulation [7] and in the HER2-low (positive, non-amplified) TNBC subpopulation [8], respectively. Whether these targets expression/co-expression and/or their levels of expression determine different TNBC sub-types, or drive its clinical history regardless of the use of those drugs is currently unknown; however, these datasets of the drug development focus on three novel targets (PD-L1, TROP2 and HER2) in this disease.

In the past, we have approached the complexity of TNBC with complex taxonomic techniques mixing genomics and phosphoproteomics to find prognostic [9]

Maria Jose Bueno and Silvana Mouron have contributed equally to this manuscript.

✉ Miguel Quintela-Fandino
mquintela@cnio.es

[1] Breast Cancer Clinical Research Unit, CNIO Spanish National Cancer Research Center, Melchor Fernandez Almagro 3, 28029 Madrid, Spain

[2] Histopathology Unit, CNIO Spanish National Cancer Research Center, Madrid, Spain

[3] Pathology Department, Hospital Universitario 12 de Octubre, Madrid, Spain

[4] Medical Oncology Department, Hospital Universitario 12 de Octubre, Madrid, Spain

[5] Medical Oncology Department, Hospital Universitario de La Princesa, Madrid, Spain

Published online: 18 October 2023

9. Publicacion del artículo " NFκB and NLRP3/NLRC4 inflammasomes regulate differentiation, activation and functional properties of monocytes in response to distinct SARS-CoV-2 proteins."

Nat Commun (IF: 14.92; **Q1**)

nature communications

Article

https://doi.org/10.1038/s41467-024-46322-8

NFκB and NLRP3/NLRC4 inflammasomes regulate differentiation, activation and functional properties of monocytes in response to distinct SARS-CoV-2 proteins

Received: 14 April 2023

Accepted: 22 February 2024

Published online: 07 March 2024

Check for updates

Ilya Tsukalov[1,11], Ildefonso Sánchez-Cerrillo[2,3,11], Olga Rajas[4], Elena Avalos[4], Gorane Iturricastillo[4], Laura Esparcia[1,2], María José Buzón[5], Meritxell Genescà[5], Camila Scagnetti[2], Olga Popova[1], Noa Martin-Cófreces[1,2], Marta Calvet-Mirabent[1,2], Ana Marcos-Jimenez[1,2], Pedro Martínez-Fleta[1,2], Cristina Delgado-Arévalo[2], Ignacio de los Santos[3,6], Cecilia Muñoz-Calleja[2,3], María José Calzada[1,7], Isidoro González Álvaro[8], José Palacios-Calvo[9], Arantzazu Alfranca[2,10], Julio Ancochea[4], Francisco Sánchez-Madrid[1,2,10] & Enrique Martin-Gayo[1,2,3]

Increased recruitment of transitional and non-classical monocytes in the lung during SARS-CoV-2 infection is associated with COVID-19 severity. However, whether specific innate sensors mediate the activation or differentiation of monocytes in response to different SARS-CoV-2 proteins remain poorly characterized. Here, we show that SARS-CoV-2 Spike 1 but not nucleoprotein induce differentiation of monocytes into transitional or non-classical subsets from both peripheral blood and COVID-19 bronchoalveolar lavage samples in a NFκB-dependent manner, but this process does not require inflammasome activation. However, NLRP3 and NLRC4 differentially regulated CD86 expression in monocytes in response to Spike 1 and Nucleoprotein, respectively. Moreover, monocytes exposed to Spike 1 induce significantly higher proportions of Th1 and Th17 CD4 + T cells. In contrast, monocytes exposed to Nucleoprotein reduce the degranulation of CD8 + T cells from severe COVID-19 patients. Our study provides insights in the differential impact of innate sensors in regulating monocytes in response to different SARS-CoV-2 proteins, which might be useful to better understand COVID-19 immunopathology and identify therapeutic targets.

In a small proportion of individuals, SARS-CoV-2 infection can lead to an increased risk to develop severe Coronavirus Disease 2019 (COVID-19)[1], which is characterized by the progression into life threatening conditions, including pneumonia, acute respiratory distress syndrome (ARDS) and cardiovascular disease[2–4]. It has now been established that a number of risk factors including pre-existing inflammatory clinical conditions[5], immunosuppression[6–8] and genetic factors affecting the generation of interferon (IFN)-specific autoantibodies[9,10] can influence the development of severe COVID-19 pathology. Several studies have provided evidence supporting hyperinflammatory and dysregulated immune responses in severe COVID-19 patients. Such inflammatory state is characterized by increased detection of proinflammatory

A full list of affiliations appears at the end of the paper. e-mail: enrique.martin@uam.es

10. Publicacion del articulo " Beneficial effect of temporary methotrexate interruption on B and T cell responses upon SARS-CoV-2 vaccination in patients with rheumatoid arthritis or psoriatic arthritis"

NPJ Vaccines (IF: 5.7; **Q1**).

npj | vaccines

www.nature.com/npjvaccines

ARTICLE OPEN

Check for updates

Beneficial effect of temporary methotrexate interruption on B and T cell responses upon SARS-CoV-2 vaccination in patients with rheumatoid arthritis or psoriatic arthritis

Pedro Martínez-Fleta[1,12], Esther F. Vicente-Rabaneda[2,12], Ana Triguero-Martínez[2,11], Emilia Roy-Vallejo[3,11], Miren Uriarte-Ecenarro[2], Francisco Gutiérrez-Rodríguez[2], Patricia Quiroga-Colina[2], Ana Romero-Robles[2], Nuria Montes[2], Noelia García-Castañeda[2], Gina P. Mejía-Abril[4], Jesús A. García-Vadillo[2,5], Irene Llorente-Cubas[2], José R. Villagrasa[6], José M. Serra López-Matencio[7], Julio Ancochea[8,9,10], Ana Urzainqui[1], Laura Esparcia-Pinedo[1], Arantzazu Alfranca[1,5,11], Hortensia de la Fuente[1,11], Rosario García-Vicuña[2,5], Francisco Sánchez-Madrid[1,5,11], Isidoro González-Álvaro[2,13]✉ and Santos Castañeda[2,9,13]✉

B and T cell responses were evaluated in patients with rheumatoid arthritis (RA) or psoriatic arthritis (PsA) after 1 or 2 weeks of methotrexate (MTX) withdrawal following each COVID-19 vaccine dose and compared with those who maintained MTX. Adult RA and PsA patients treated with MTX were recruited and randomly assigned to 3 groups: MTX-maintenance ($n = 72$), MTX-withdrawal for 1 week ($n = 71$) or MTX-withdrawal for 2 weeks ($n = 73$). Specific antibodies to several SARS-CoV-2 antigens and interferon (IFN)-γ and interleukin (IL)-21 responses were assessed. MTX withdrawal in patients without previous COVID-19 was associated with higher levels of anti-RBD IgG and neutralising antibodies, especially in the 2-week withdrawal group and with higher IFN-γ secretion upon stimulation with pools of SARS-CoV-2 S peptides. No increment of RA/PsA relapses was detected across groups. Our data indicate that two-week MTX interruption following COVID-19 vaccination in patients with RA or PsA improves humoral and cellular immune responses.

npj Vaccines (2024)9:21 ; https://doi.org/10.1038/s41541-024-00805-3

INTRODUCTION

Vaccination has proven to be the main strategy to attenuate severe symptoms leading to hospitalisation due to COVID-19 in the general population. mRNA vaccines have prevailed in most countries due to their safety, high immunogenicity, low cost, and their quick and easy manufacture[1,2]. However, at the time of recruiting participants for this study (March through September 2021, during first vaccination campaign in Spain) there were few data addressing the immunogenicity of COVID-19 vaccines in immunocompromised individuals, such as patients with immune-mediated inflammatory diseases (IMID). Furthermore, at the beginning of the pandemic initial data suggested that patients with rheumatoid arthritis (RA), among other IMID, may be more susceptible to developing severe COVID-19, leading to hospitalisation or intensive care unit admission, although later evidence revealed the great importance of other factors such as advanced age and comorbidities[3–7].

RA patients are usually treated with disease-modifying anti-rheumatic drugs (DMARDs) such as methotrexate (MTX), either in monotherapy or in combination with other conventional synthetic (csDMARDs), biologic (bDMARDs) or targeted synthetic (tsDMARDs) DMARDs. Hence, the humoral response to vaccination might be impaired due to these immunomodulatory treatments, as it has been previously described for influenza and pneumococcal vaccines[8]. Additionally, it has been hypothesised that DMARDs could have a negative effect on T cell responses upon pneumococcal vaccination[9]. Accordingly, functional in vitro studies are necessary to try to unravel the role of these immunomodulatory drugs on vaccine immunogenicity.

Temporary MTX discontinuation has been proposed as a possible strategy to strengthen the antibody response after vaccination[10]. In fact, two prospective randomised studies have evaluated the effect of a temporary MTX interruption on the immune response in patients with RA vaccinated against influenza, showing that a 2-week MTX discontinuation was safe (no increase in disease activity was observed upon discontinuation) and had a beneficial impact on humoral response[11,12]. A short interruption of MTX after COVID-19 vaccine doses has also proven to be effective to improve antibody response in these patients[13–17]. However, few data regarding T cell response after MTX interruption are available. In this context, we postulated that temporary MTX interruption after COVID-19 vaccine administration could be beneficial for RA and psoriatic arthritis (PsA) patients

[1]Department of Immunology, Hospital Universitario de La Princesa IIS-Princesa (Instituto de Investigación Sanitaria del Hospital Universitario de La Princesa), Madrid, Spain. [2]Department of Rheumatology, Hospital Universitario de La Princesa IIS-Princesa (Instituto de Investigación Sanitaria del Hospital Universitario de La Princesa), Madrid, Spain. [3]Department of Internal Medicine, Hospital Universitario de La Princesa IIS-Princesa (Instituto de Investigación Sanitaria del Hospital Universitario de La Princesa), Madrid, Spain. [4]Clinical Pharmacology Department, Hospital Universitario de La Princesa, Instituto Teófilo Hernando, Instituto de Investigación Sanitaria La Princesa (IP), Universidad Autónoma de Madrid (UAM), Madrid, Spain. [5]Department of Medicine, Universidad Autónoma de Madrid (UAM), Madrid, Spain. [6]Department of Preventive Medicine, Hospital Universitario de La Princesa IIS-Princesa (Instituto de Investigación Sanitaria del Hospital Universitario de La Princesa), Madrid, Spain. [7]Department of Hospital Pharmacy, Hospital Universitario de La Princesa IIS-Princesa (Instituto de Investigación Sanitaria del Hospital Universitario de La Princesa), Madrid, Spain. [8]Department of Pneumology, Hospital Universitario de La Princesa IIS-Princesa (Instituto de Investigación Sanitaria del Hospital Universitario de La Princesa), Madrid, Spain. [9]Cátedra UAM-Roche, EPID-Future, Department of Medicine, Universidad Autónoma de Madrid (UAM), Madrid, Spain. [10]Centro de Investigación en Red de Enfermedades Respiratorias (CIBERES), Instituto de Salud Carlos III (ISCIII), Madrid, Spain. [11]CIBER Cardiovascular CIBERCV, Madrid, Spain. [12]These authors contributed equally: Pedro Martínez-Fleta, Esther F. Vicente-Rabaneda. [13]These authors jointly supervised this work: Isidoro González-Álvaro, Santos Castañeda. ✉email: isidoro.ga@ser.es; scastas@gmail.com

Published in partnership with the Sealy Institute for Vaccine Sciences

11. Publicacion del articulo " Analysis of humoral and cellular immunity after SARS-CoV-2 vaccination in patients with multiple sclerosis treated with immunomodulatory drugs"

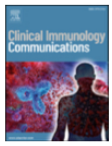
Clin Immunol Commun (Report missing IFs)

Clinical Immunology Communications 3 (2023) 6–13

Contents lists available at ScienceDirect

Clinical Immunology Communications

journal homepage: www.elsevier.com/locate/clicom



Full Length Article

Analysis of humoral and cellular immunity after SARS-CoV-2 vaccination in patients with multiple sclerosis treated with immunomodulatory drugs

Virginia Meca-Lallana[a,1], Laura Esparcia-Pinedo[b,1,*], Clara Aguirre[a], Carolina Díaz-Pérez[a], Ainhoa Gutierrez-Cobos[c], Mónica Sobrado[a], Estefanía Carabajal[a], Beatriz del Río[a], Noelia Ropero[b], Ramón Villagrasa[d], José Vivancos[a], Francisco Sanchez-Madrid[b], Arantzazu Alfranca[b]

[a] Demyelinating Diseases Unit, Neurology Department. Hospital Universitario de la Princesa, Calle de Diego de León 62, 28006 Madrid, Spain
[b] Immunology Department. Hospital Universitario de la Princesa, Calle de Diego de León 62, 28006 Madrid, Spain
[c] Microbiology Department. Hospital Universitario de la Princesa, Calle de Diego de León 62, 28006 Madrid, Spain
[d] Preventive Medicine Unit. Hospital Universitario de la Princesa, Calle de Diego de León 62, 28006 Madrid, Spain

A B S T R A C T

We analyzed immune response to SARS-CoV-2 vaccination by measuring specific IgG titers and T-cell reactivity to different SARS-CoV-2 peptides in multiple sclerosis patients taking different disease-modifying treatments. Of the 88 patients included, 72 developed any kind of immune response after vaccination. Although DMTs such as fingolimod and anti-CD20+ treatments prevented patients from developing a robust humoral response to the vaccine, most of them were still able to develop a cellular response, which could be crucial for long-term immunity. It is probably advisable that all MS patients take additional/booster doses to increase their humoral and/or cellular immune response to SARS-CoV-2.

1. Introduction

Over 450 million people around the world have been infected with SARS-CoV-2 and around 6 million people have died from this infection (COVID-19) [1]. Multiple sclerosis (MS) is an inflammatory autoimmune disease of the CNS that is often treated with immunomodulatory medications, which in some cases increase the risk of opportunistic infection and infection-related mortality rates [2]. Thus, there have been concerns about the severity of disease in infected patients and the effectiveness of vaccines against SARS-CoV-2.

However, various studies have shown that patients with MS are not at greater risk of infection or severe COVID-19 than the general population [3,[4]. Worse outcomes are more likely in older MS patients and those that suffer from comorbid conditions, such as obesity, which would also be expected in the general population.

Furthermore, the use of disease-modifying therapies (DMTs) that modulate or suppress the immune system is not associated with increased COVID-19 severity [3,5,6], with the possible exception of anti-CD20 therapies, which can reduce the SARS-CoV-2 antibody response due to B cell depletion [7].

Live or attenuated vaccines are contraindicated with almost all MS treatments because of the risk of reactivation of the inoculated microorganism. Inactive vaccines may also be less effective, which is why administration is recommended before the start of DMT treatment. If this is not possible, administration should be carried out during treatment, even if the response is not optimal [8,9]. Careful analysis of the humoral and cellular immune responses elicited by SARS-CoV-2 vaccination in MS patients treated with immunomodulatory drugs is key to understanding the degree of protection conferred and determining the optimal vaccination strategy.

The antibody-driven (humoral) response to SARS-CoV-2 vaccines, dependent on B cells, can wane over a 3–10-week period after a second dose [10], but the cellular response, mediated by T lymphocytes, is thought to be longer lasting, as has been observed in patients who have recovered from SARS and SARS-CoV-2 [11]. The cellular response could also be more resistant to virus mutations in emerging variants than antibodies [12].

Recent studies have shown significant levels of protective cellular immunity to SARS-CoV-2 in MS patients exposed to the virus and after vaccination, even if the vaccine-specific humoral response was impaired [13,14]. For example, there is evidence that patients on anti-CD20 therapies could mount a robust T cell response after SARS-CoV-2 vaccination despite having a reduced humoral response [15,16].

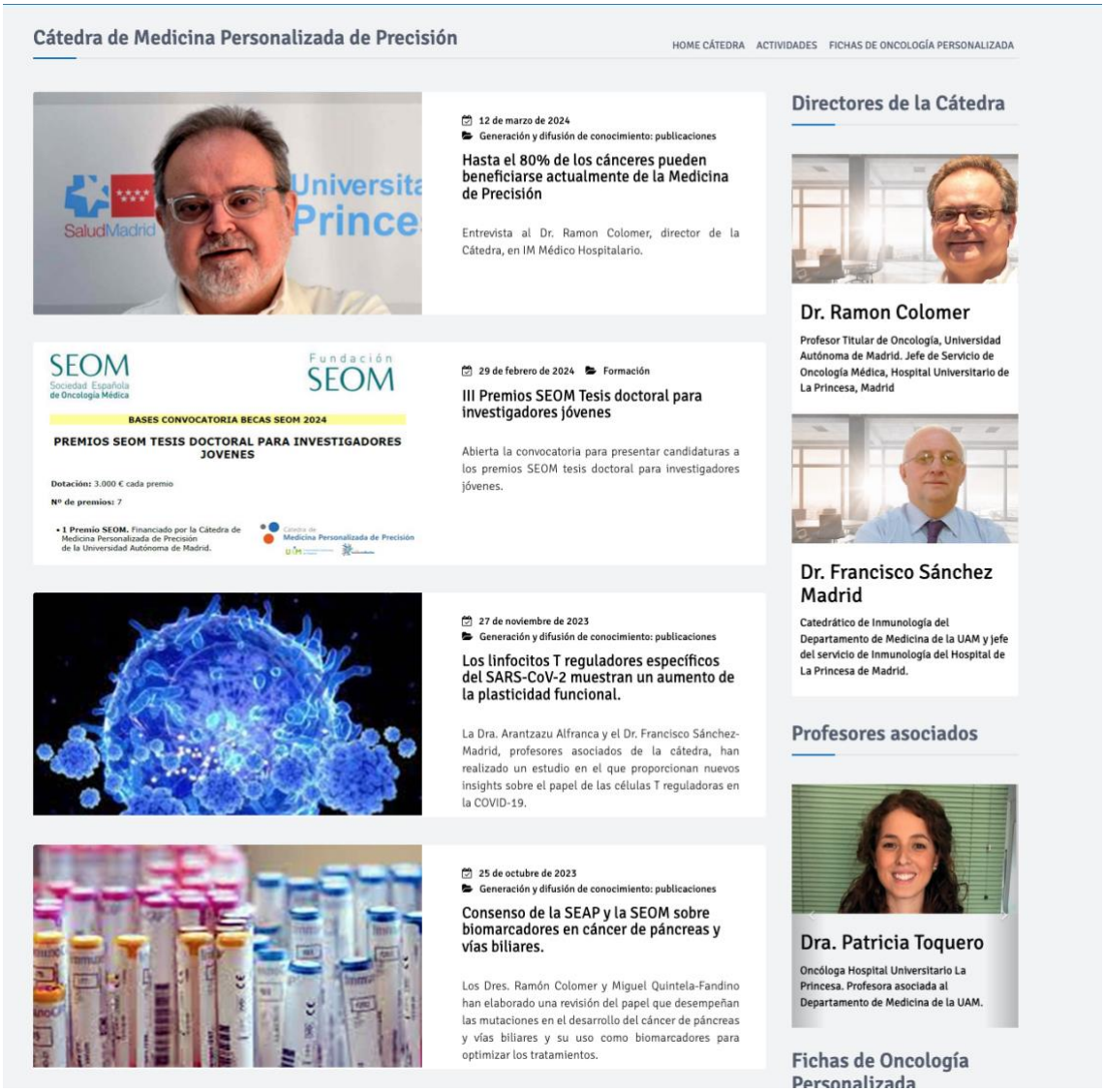
The aim of this study was to investigate the humoral and cellular immunity developed in MS patients taking different DMTs between 4 and 6 weeks after the last dose of a SARS-CoV2 vaccine.

* Corresponding author.
E-mail address: l.esparciapinedo@gmail.com (L. Esparcia-Pinedo).
[1] Equal contribution

https://doi.org/10.1016/j.clicom.2023.02.001
Received 31 January 2023; Accepted 2 February 2023

Difusión del Conocimiento

1. Mantenimiento y actualización de la *website* de la Cátedra de Medicina de Precisión, de modo que sirva de plataforma de difusión de sus actividades



La dirección es la siguiente: https://www.institutoroche.es/catedra

2. Grabación del video docente: Cómo integrar la Inteligencia Artificial en el día a día de la Oncología (28/11/24), en el curso ONCO IA: Inteligencia artificial en Oncología, dirigido por Rodrigo Dientsmann

3. Moderación y Coordinación de la Jornada de difusión sobre el documento de Consenso SEOM-SEAP de Biomarcadores en Cáncer de Mama. 13/11/24

4. Publicación del artículo "La Medicina personalizada de Precisión, clave en la Oncología del presente e imprescindible en la Oncología del futuro", 27/11/24

iSanidad

Acceder

PROFESIONALES | ACTUALIDAD | ANÁLISIS | ENTIDADES PÚBLICAS Y PRIVADAS | ISANIDADENTAL

OPINIÓN

La Medicina Personalizada de Precisión, clave en la Oncología del presente e imprescindible en la Oncología del futuro

Dr. Ramon Colomer, director de la Cátedra Universidad Autónoma de Madrid - Fundación Instituto Roche de Medicina Personalizada de Precisión

27 de noviembre de 2024

Dr. Ramon Colomer, director de la Cátedra Universidad Autónoma de Madrid – Fundación Instituto Roche de Medicina Personalizada de Precisión, profesor Titular de Oncología de la Universidad Autónoma de Madrid y jefe de Servicio de Oncología Médica en el Hospital Universitario de La Princesa (Madrid)

La Medicina Personalizada de Precisión ha supuesto un cambio de paradigma en la forma de prestar la asistencia sanitaria y su uso generalizado favorece que se empleen intervenciones médicas predictivas, preventivas, diagnósticas, terapéuticas y de seguimiento cada vez más eficaces y segura. La medicina

Formación

1. Convocatoria y Concesión de la Beca SEOM 2024 Tesis Doctoral sobre Medicina Personalizada de Precisión para investigadores jóvenes

SEOM
Sociedad Española de Oncología Médica

Fundación SEOM

BASES CONVOCATORIA BECAS SEOM 2024

PREMIOS SEOM TESIS DOCTORAL PARA INVESTIGADORES JOVENES

Dotación: 3.000 € cada premio

Nº de premios: 7

- **1 Premio SEOM.** Financiado por la Cátedra de Medicina Personalizada de Precisión de la Universidad Autónoma de Madrid.

Cátedra de Medicina Personalizada de Precisión

- **6 Premios SEOM.**

Objetivo los premios SEOM de tesis doctorales:
El objetivo de los premios Doctorado SEOM es premiar la realización de tesis doctorales sobre temas relacionados con la oncología y sobre la oncología de precisión.

18 de octubre de 2024 Participación en jurados de premios y becas Volver

Un estudio sobre la biología molecular del cáncer de próstata es el ganador del III Premio a la Tesis Doctoral de Medicina Personalizada de Precisión para Investigadores Jóvenes de SEOM

La Dra. Rebeca Lozano Mejorada, del Complejo Asistencial Universitario de Salamanca, es la ganadora del Premio a la Tesis Doctoral.

La Dra. Rebeca Lozano Mejorada recibe el premio de manos del Dr. Ramon Colomer, director de la Cátedra y profesor docente e investigador de la Facultad de Medicina de la Universidad Autónoma de Madrid; junto con el Dr. César A. Rodríguez, presidente de

2. Renovación de Plaza de Profesor Asociado en la Facultad de Medicina de la UAM, 2025

Código de Concurso: UAM2024-ACS101
Centro: Facultad de Medicina. Hospital Universitario La Princesa
Departamento: Medicina
Área de Conocimiento: Oncología
Nº de plazas: 1
Procedencia de la plaza: MD8781-Y (Cátedra UAM-FUNDACION INSTITUTO ROCHE)
Categoría: Profesor Asociado en Ciencias de la Salud
Dedicación: tiempo parcial 3 horas
Actividades: Enseñanza teórico/práctica en el área de Oncología.

La convocatoria se realizará en 2025

3. Redacción del capítulo "Medicina Personalizada de Precisión" en el libro Oncología para Estudiantes, Universidad Autónoma de Madrid, 2025

Universidad Autónoma de Madrid

Capítulo 3. Medicina Personalizada de Precisión en Oncología

Ramon Colomer, Rebeca Mondéjar, Nuria Romero-Laorden, Miguel Quintela Fandiño

Hospital Universitario La Princesa, Cátedra UAM-Fundación Instituto Roche de Medicina Personalizada de Precisión y Centro Nacional de Investigaciones Oncológicas, Madrid

Investigación

1. Continuación del Proyecto de Investigación titulado "Integrating longitudinal patient-generated data and multi-omic profiling for comprehensive precision oncology in womens' cancers" (Expediente No: PMP22/00032), dentro de la Convocatoria de Proyectos de Investigación de Medicina Personalizada del Instituto de Salud Carlos III.

Este proyecto de investigación está explorando distintos aspectos de la Medicina Personalizada de Precisión de una manera integrada. La financiación concedida para el período 2023-2025 ha sido de 2.439.992,50 €. En este proyecto multicéntrico participan las siguientes instituciones:

20/2/23 10:33 Las 'gemelas digitales' de mujeres con cáncer permitirán hacer una asignación "mucho más exacta" de los tratamientos | Salud y bienestar | EL...

EL PAÍS

LA SALUD VA POR BARRIOS · NUTRIR CON CIENCIA · ENFÓRMATE · NOSOTRAS RESPONDEMOS · SALUD MENTAL · ÚLTIMAS NOTICIAS

CÁNCER >

Las 'gemelas digitales' de mujeres con cáncer permitirán hacer una asignación "mucho más exacta" de los tratamientos

Un proyecto español analiza datos sobre los hábitos de vida, la alimentación y las emociones de las pacientes para averiguar la trayectoria que seguirá la enfermedad en cada caso

Miguel Ángel Quintela, de pie a la derecha, posa con otros nueve investigadores del proyecto en la sede del CNIO en Madrid.
LUIS SEVILLANO

Tabla de reclutamiento hasta Diciembre de 2024

CENTRO / SITE		RECLUTADAS			DISCONTINUADAD DEL ESTUDIO		
		C. Mama	C. Pulmón	C. Colon	C. Mama	C. Pulmón	C. Colon
1	Hospital Universitario de Fuenlabrada	5	4	3		2	
2	Instituto de Investigación Sanitaria Hospital de La Princesa	2	9	1		2	
3	Hospital Clínico Universitario de Valencia	8	-	-	1		
4	ICO Hospitalet Bellvitge	24		1			
5	Hospital Universitario Son Espases	12	3	-		1	
6	Hospital Universitario de Navarra	4	2	5			1
7	Hospital Universitario Virgen de la Macarena	6	10	1		4	
8	Hospital San Pedro de Alcántara	8	-	-			
9	Complexo Hospitalario Universitario de A Coruña	11	2	2	2		
TOTAL		80	30	13	3	9	1
		123			13		

2. Otros proyectos de investigación de los miembros de la Cátedra activos en 2024

- Estudios en poblaciones minoritarias de cáncer:
    - Pacientes con cáncer de mama hormono-positivo y amplificación de FGFR1/2 con fallo a inhibidores de CDK4/6 y aromatasa (rogaratinib). Dr M Quintela
    - Paciente con cáncer de mama triple-negativo y sobre-activación de CDK4/6 y ERK (binimetinib+palbociclib). Dr M Quintela
- Creación de un grupo emergente de investigación en biomarcadores de respuesta inmune en cáncer de próstata en el Hospital La Princesa y otros centros asociados. Dra N Romero-Laorden
- Caracterización clínica y molecular del cáncer de próstata avanzado en el Hospital Universitario de la Princesa. Secuenciación de 100 casos de CPRC de forma retrospectiva (PROYECTO CAPPRICE). Dra N Romero-Laorden
- Inmunoterapia de Precisión
    - Caracterizacion evolutiva del fenotipo inmune en cancer de prostata metastasico. Dra N Romero-Laorden
    - Biomarcadores de respuesta inmune en pacientes con cancer de prostata resistente a la castracion (CPRC). Dra N Romero-Laorden
    - Evaluación del papel de CCL21 en la respuesta al tratamiento con anticuerpos anti-PD-1 en cáncer de pulmón no microcítico (FIS22/01542). Dra A Alfranca
    - Treg-less: Targeting CCR7-mediated homeostasis of Tregs to Break the Immune Tolerance in Solid tumors (PLEC2022-009312). Dra A Alfranca
- Plataformas ISCIII de apoyo a la I+D+I en Biomedicina y Ciencias de la Salud **(**PT23/00060**)**, financiado por el ISCIII y con cofinanciación de fondos FEDER; Dr R Colomer (IP: Dr Francisco Abad)

Otras Actividades Relevantes en 2024

1. Participación en el Grupo de Trabajo de Medicina de Precisión de la Sociedad Española de Oncología Médica (SEOM)

OBSERVATORIO Medicina de Precisión

- Mapa con respuestas por CCAA a la encuesta de SEOM sobre Medicina de Precisión

Miembros de la Comisión

- Dr. César A. Rodríguez Sánchez *(Coordinador)*
- Dr. Javier de Castro Carpeño
- Dr. Ramón Colomer i Bosch
- Dra. Carmen Estéban Estéban
- Dra. Enriqueta Felip Font
- Dra. Rosario García Campelo
- Dra. Pilar Garrido López
- Dr. Antonio González Martín
- Dra. Sara López-Tarruella Cobo
- Dr. Javier Puente Vázquez
- Dra. María José Safont Aguilera
- Dr. César Serrano García
- Dr. David Vicente Baz

2. Coordinación de la Comisión de Becas y Premios de la Sociedad Española de Oncología Médica (SEOM)

3. Funcionamiento la Unidad Funcional de Dermatooncología de Precisión en el Hospital de la Princesa de Madrid

Esta UF está formada por miembros de los Servicios de Dermatología, Oncología Médica, con la participación de Radiología, Anatomía Patológica, entre otros.

Funciona con éxito desde septiembre de 2022, coordinada por los Dres Pedro Rodríguez Jiménez y Berta Hernández Marín.