

H120-CNIO LUNG CANCER CLINICAL RESEARCH UNIT

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OVERVIEW

Our Group combines basic preclinical studies with clinical and translational research, mainly in lung cancer and other solid tumours. In summary, the main research areas of our Group focus on 2 modalities: (1) the identification of new molecular biomarkers that can be used in the clinic for diagnostic, prognostic, predictive and pharmacogenomic purposes; and (2) developing novel treatment strategies. For example, we have comprehensively profiled bronchoalveolar lavage (BLA) fluids of COPD and lung cancer patients, showing a differential mi-RNA, protein and inflammatory cytokine expression between both diseases and different subtypes of lung cancer. On the other hand, we have developed a patient-derived xenograft (PDX) platform of non-small-cell lung cancers to test new drugs/targets. We are also developing PDXs of small-cell lung cancers. Finally, our Group has extensive experience in the development of new

“Our Group has significantly contributed to the discovery of biomarkers as well as to the early development of new drugs tailoring novel targets. We have co-led randomised clinical trials with biological therapies and immunotherapy in lung cancer and other solid tumours.”

drugs, as well as in conducting practice-changing phase II/III trials in the fields of precision oncology and immuno-oncology.

RESEARCH HIGHLIGHTS

New drug development and early clinical trials

Our Group has been actively involved in pharmacogenomic, pharmacokinetic, translational and clinical studies with novel antitumour agents in several types of solid tumours, particularly lung cancer. Our principal clinical research area has been immunotherapy and immune-based early clinical trials. As a first relevant example we can mention the CheckMate CA 209-032 trial testing nivolumab +/- ipilimumab in recurrent or extensive-stage small-cell lung cancer, which was fully recruited in 2016, with a substantial contribution by investigators from our Group. These important data have been recently published in *The Lancet Oncology*. In addition, Luis Paz-Ares is the principal investigator of a phase I trial (JDVF) testing a novel combination of pembrolizumab plus ramurumab in different types of solid tumours. Encouraging preliminary clinical data were presented at ASCO 2016 in the cohort of non-small-cell lung cancer, showing a response rate of 35 % and 7-months of progression-free survival in pretreated patients. Finally, a first-in-human trial with a novel T-cell bispecific antibody targeting carcinoembryonic antigen (CEA) expressed on tumour cells and CD3 on T-cells was initiated and is actively recruiting patients.

Conducting practice changing randomised controlled trials

Our Group has also made a substantial contribution in conducting pivotal trials with immune checkpoint inhibitors. In particular, an important phase III trial, led by Dr Paz-Ares (the international principal investigator), with pembrolizumab in completely resected non-small cell lung cancer patients is actively recruiting participants. Furthermore, the first randomised trial comparing second-generation (afatinib) versus first generation (gefitinib) tyrosine-kinase inhibitors in patients with EGFR-mutant lung cancers, also internationally led by Dr Paz Ares, was completed in 2016 and its results were recently published in *The Lancet Oncology*.

Novel biomarker development and translation

IL-11 and CCL-1 have been proposed as novel diagnostic biomarkers of lung adenocarcinoma in bronchoalveolar lavage fluid. This finding has potential implications in early lung cancer diagnosis. Moreover, different members of our Group contributed towards providing further insights into the role of PD-L1 expression and other potential immune biomarkers for the benefit of immune checkpoint inhibitors. ■

PUBLICATIONS

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