

FIRST-NEC (GFPC 01-2022): A multicenter phase II study evaluating the efficacy and safety of the combination of durvalumab with etoposide and platinum as first line treatment in patients with advanced large-cell neuroendocrine lung carcinomas (LCNECs).

Dominique Arpin, Julien Gautier, Audrey Mansuet-Lupo, Romain Corre, Aymeric De Monfort, Sylvie Chabaud, Chantal Decroisette Phan Van Ho, Sébastien Couraud, Marie Wislez, Simonneau Yannick, Solene Chaleat, Charles Ricordel, Anne Claire Toffart, Didier Debieuvre, Ivana Sondarjee, Jean-Bernard Auliac, Diane Damotte, Laurent Greillier, David Pérol, Luc Odier; Hôpitaux Nord Ouest Villefranche sur Saone, Gleizé, France; Centre Léon Bérard, Lyon, France; Department of Pathology, Cochin Hospital, AP-HP centre, Université Paris Cité, Paris, France; Centre Hospitalier Intercommunal de Cornouaille, Service de Pneumologie, Quimper, France; Department of Clinical Research and Innovation, Centre Léon Bérard, Lyon, France; Department of Medical Oncology, Centre Léon Bérard, Lyon, France; Pneumology, Lyon Sud Hospital, Hospices Civils de Lyon, Pierre-Bénite, France; Pneumology Department, Hôpital Cochin, Paris, France; CHU Dupuytren Limoges (Service pathologies respiratoires), Limoges, France; Service des Maladies Respiratoires, Centre Hospitalier d'Aix en Provence, Aix En Provence, France; Service de Pneumologie, CHU Rennes, Rennes, France; Hôpital Albert Michallon, CHU Grenoble Alpes, La Tronche, France; Respiratory disease department, GHRMSA - Emile Muller Hospital, Mulhouse, France; CHI Creteil, Creteil, France; Department of Pathology, Cochin Hospital, AP-HP centre, Université Paris Cité, Paris, France; Department of Multidisciplinary Oncology and Therapeutic Innovations, Assistance Publique-Hôpitaux de Marseille, Aix Marseille University, Marseille, France; Hôpital Nord Ouest, Gleize, France

Background: LCNECs of the lung are rare lung tumors (2%) with difficult histopathological diagnosis (70–80% confirmation rate after centralized review). Platinum-based regimen is currently the recommended first-line treatment for advanced LCNECs. However it results in poor median progression-free survival (PFS) and overall survival (OS) of 5 months and 7.7 months, respectively. Retrospective studies have suggested efficacy of immune checkpoint inhibitors against LCNECs with significantly prolonged OS. In addition, the CASPIAN trial demonstrated the superiority of durvalumab plus platinum-etoposide over chemotherapy alone in patients with extensive-stage neuroendocrine small cell lung cancer, with an acceptable toxicity profile. **Methods:** This ongoing single-arm phase II trial is designed to evaluate the efficacy and safety of durvalumab in combination with platinum-etoposide as first line treatment in pts with locally diagnosed advanced LCNEC. Key selection criteria are age \geq 18 years, ECOG PS 0–1, measurable disease (RECIST 1.1) and locally advanced (Stage III) ineligible for loco-regional therapy or metastatic (Stage IV). Central confirmation of the histopathological diagnosis will be performed for all pts at the start of treatment. All pts will receive 4 cycles of induction with durvalumab 1500mg, platinum (either carboplatin AUC5 or cisplatin 80mg/m² at D1) and etoposide 100mg/m² (D1–D3), repeated every 3 weeks. Durvalumab 1500mg will be continued alone every 4 weeks for a maximum of 24 additional cycles or until disease progression or unacceptable toxicity. The primary endpoint is to determine, in pts with confirmed diagnosis, 12-month progression-free rate (12M-PFR) as per central radiological review. Secondary endpoints include PFS, OS and safety. Radiological criteria will be described using the RECIST 1.1 both as per investigator's assessment and as per central radiological review. Biomarkers will be studied as predictive and prognostic factors of efficacy. Efficacy will be assessed sequentially every ten pts using a Bayesian approach. Analogous to a frequentist approach from an A'Hern-Fleming single-stage design, 51 evaluable pts will be enrolled. A futility stopping rule will stop the trial if there is a high probability ($>80\%$) that the 12M-PFR is less than or equal to P_0 (15%). Finally, a trial emulation will be performed as an exploratory analysis to assess PFS and OS compared to an external control arm by using real-world data from the ESME database. Since the start of recruitment (June 2024), 13 patients with a confirmed diagnosis have been included. Clinical trial information: NCT06393816. Research Sponsor: French ministry of health / French National Cancer Institute (INCa); PHRC-K23-033; AstraZeneca; Not applicable (drug supply).