

20720

Efficacy and safety of lifileucel and pembrolizumab in patients with immune check point inhibitor-naïve advanced melanoma: Final results from IOV-COM-202 study

A.J.S. Furness¹, H. Gogas², B. Doger de Spéville³, G.K. In⁴, S. Thomas⁵, Y.K. Hong⁶, K. He⁷, S. Lee⁸, T. Medina⁹, F. Graf Finckenstein¹⁰, M. Vance¹¹, R. FIAZ¹², M. Catlett¹³, R. Qi¹⁴, B. Thompson¹⁵, J. Dean¹⁶, S. Zhu¹⁷, B. Gastman¹⁸, P. Terheyden¹⁹

¹ Renal and Melanoma Unit; Solid Tumour Cellular Therapy Lead, The Royal Marsden Hospital - Chelsea, London, United Kingdom, ² Internal Medicine, Athens Medical School, NKUA, Athens, Greece, ³ Start-Madrid Phase 1 Unit, University Hospital Fundacion Jimenez Diaz, Madrid, Spain, ⁴ Department of Medicine, USC Norris Comprehensive Cancer Center, Los Angeles, United States of America, ⁵ Hematology and Oncology, AdventHealth Cancer Institute, Orlando, United States of America, ⁶ Division of Surgical Oncology, Cooper University Hospital, Camden, United States of America, ⁷ Department of Medicine, OSUCCC - The Ohio State University Comprehensive Cancer Center - James, Columbus, United States of America, ⁸ Department of Medical Oncology, Fred Hutchinson Cancer Research Center, Seattle, United States of America, ⁹ Medical oncology - cutaneous oncology Department, University of Colorado Cancer Center Anschutz Cancer Pavilion, Aurora, United States of America, ¹⁰ Oncology Department, Iovance Biotherapeutics, Inc., San Carlos, United States of America, ¹¹ Department of Oncology, Iovance Biotherapeutics, Inc., San Carlos, United States of America, ¹² Clinical Research, Iovance Biotherapeutics, Inc., San Carlos, United States of America, ¹³ Department of Clinical Sciences, Iovance Biotherapeutics, Inc., San Carlos, United States of America, ¹⁴ Bioinformatics And Translational, Iovance Biotherapeutics, Inc., San Carlos, United States of America, ¹⁵ Bioinformatics, Iovance Biotherapeutics Inc., San Carlos, United States of America, ¹⁶ Bioinformatics, Iovance Biotherapeutics, Inc., San Carlos, United States of America, ¹⁷ Biostatistics, Iovance Biotherapeutics, Inc., San Carlos, United States of America, ¹⁸ Translational Medicine and Research, Iovance Biotherapeutics, Inc., San Carlos, United States of America ¹⁹ Department of Dermatology, University Of Lübeck, Lübeck, Germany

Background

Despite advances in immune checkpoint inhibitor (ICI)-based therapy in front-line advanced melanoma, most of the patients (pts) do not achieve long term benefit. Lifileucel, a one-time autologous tumor-infiltrating lymphocyte (TIL) cell therapy, induces durable responses in pts with advanced melanoma previously treated with ICI. IOV-COM-202 (NCT03645928) cohort 1A evaluated the safety and efficacy of lifileucel combined with pembrolizumab (pembro) in front-line advanced melanoma.

Methods

Study primary endpoint is overall response rate (ORR) by RECIST v1.1. Pts received nonmyeloablative lymphodepletion (cyclophosphamide, fludarabine), lifileucel followed by up to 6 doses of interleukin-2. T- cell receptor sequencing (TCR seq) was performed on lifileucel drug products (DP), blood samples and tumor tissue (n= 13 pts). Single cell RNA (scRNA) seq was performed on tumor and DP (n= 2 /13 pts).

Results

As of Dec 12, 2025, pts who received lifileucel doses $\geq 5.6 \times 10^9$ total viable cells achieved deep and durable responses with an ORR of 62% (15/24; 95% CI 40.6, 81.2), complete response (CR) rate of 29.2% (7/24) and partial response (PR) rate of 33.3% (8/24). The median duration of response was not reached with median follow-up of 26.9 months, 13/15 responders showed durations of ≥ 12 months, 10/15 pts had an ongoing or last study assessment of CR or PR at time of data cut. The median progression-free survival was 19.8 months. Safety was consistent with known safety profiles of the treatment regimen. Greater persistence of tumor-derived TCRs was observed in responders vs non-responders. scRNA/TCR seq revealed sustained high proportions of predicted tumor-reactive T cells with reinvigorated phenotypes in the TIL product.

Conclusions

This study is the first to prospectively evaluate frontline TIL therapy plus pembro in a contemporary population with advanced melanoma. These encouraging data represent the final analysis of COM-202, Cohort 1A and support our ongoing randomized phase III trial assessing lifileucel plus pembro vs pembro in advanced melanoma; TILVANCE-301 (NCT05727904).

Clinical trial identification

NCT03645928, EudraCT 2018-001608-12, EU Trial (CTIS) Number 2024-510779-39-00, Latest protocol version 9.0 is dated 03Mar2025.

Legal entity responsible for the study

Iovance Biotherapeutics, Inc.

Funding

Iovance Biotherapeutics, Inc.

Disclosure

A.J.S. Furness: Financial Interests, Personal, Speaker, Consultant, Advisor, Speaking Fees: BMS, Eisai, Iovance Biotherapeutics, Ipsen, Merck and Pfizer; Financial Interests, Personal, Other, Support for attending meetings and/or travel: Achilles Therapeutics, Adaptimmune, ESMO, Iovance Biotherapeutics; Financial Interests, Personal, Advisory Board: Achilles Therapeutics, Aivita, GSK, Immunocore and Neogene; Financial Interests, Personal, Speaker, Consultant, Advisor, Advisory Boards: Iovance Biotherapeutics, BioNTech; Financial Interests, Personal, Speaker, Consultant, Advisor, Consulting: Iovance Biotherapeutics, BioNTech; Financial Interests, Personal, Other, Patents planned, issued or pending: WO2019008375A1 (co-inventor of methods of identifying responders to cancer treatment). H. Gogas: Financial Interests, Personal, Speaker, Consultant, Advisor, speaking fees: Bristol Myers Squibb, Eisai, Iovance Biotherapeutics, Ipsen, Merck, and Pfizer; Financial Interests, Personal, Other, support for attending meetings and/or travel: Achilles Therapeutics, Adaptimmune, ESMO, and Iovance Biotherapeutics; Financial Interests, Personal, Advisory Board: Achilles Therapeutics, Aivita, GSK, Immunocore, and Neogene; Financial Interests, Personal, Speaker, Consultant, Advisor: Iovance Biotherapeutics and BioNTech; Financial Interests, Personal, Other, is a co-inventor on a pending patent (WO2019008375A1) related to methods of identifying responders to cancer treatment.: patent (WO2019008375A1). G.K. In: Financial Interests, Institutional, Funding: Pfizer, Regeneron, Replimune, Bicara, Merck, Georgiamune, Obsidian, Immunocore, Iovance Biotherapeutics, and Xencor; Financial Interests, Personal, Advisory Board: Pfizer, Bristol Myers Squibb, Regeneron, and Replimune. S. Thomas: Financial Interests, Personal, Other, Employment with: Iovance Biotherapeutics. K. He: Financial Interests, Personal, Advisory Board: Mirati, Iovance, BMS, AstraZeneca, Lyell, Beigene, BioNTech, Regeneron Pharmaceuticals, Obsidian, Amgen, SyntheKine, Eli Lilly, ImmunityBio; Financial Interests, Personal and Institutional, Coordinating PI: mirati, OncoC4; Financial Interests, Personal and Institutional, Steering Committee Member: Iovance, Beigene, lyell; Financial Interests, Personal and Institutional, Local PI: bms; Financial Interests, Institutional, Local PI: Amgen, GSK, Genentech, Obsidian, SyntheKine; Financial Interests, Institutional, Coordinating PI: Servier, BioNTech. S. Lee: Financial Interests, Institutional, Funding: Iovance, Lyell, Seagen, Kite, and Black Diamond; Financial Interests, Personal, Ownership Interest, Travel Support: Dava Oncology. F. Graf Finckenstein: Financial Interests, Personal, Other, Employment, Stock or Stock Options, travel support, Patents, Royalties, Other Intellectual Properties: Iovance Biotherapeutics; Financial Interests, Personal, Other, Other Intellectual Properties: Bristol Myers Squibb. M. Vance: Financial Interests, Personal, Other, Employment with and stock or stock options: Iovance Biotherapeutics. R. FIAZ: Financial Interests, Personal, Other, Employment with and stock or stock options with: Iovance Biotherapeutics. M. Catlett: Financial Interests, Personal, Other, Employment with and stock or stock options with: Iovance Biotherapeutics. R. Qi: Financial Interests, Personal and Institutional, Other, Employment with and stock or stock options with: Iovance Biotherapeutics. B. Thompson: Financial Interests, Personal, Other, Employment with and stock or stock options with: Iovance Biotherapeutics. J. Dean: Financial Interests, Personal, Other, Employment with and stock or stock options with: Iovance Biotherapeutics. S. Zhu: Financial Interests, Personal, Other, Employment with and stock or stock options: Iovance Biotherapeutics. B. Gastman: Financial Interests, Personal, Other, Employment with and reports stock or stock options and travel/accommodation support: Iovance Biotherapeutics. P. Terheyden: Financial Interests, Personal, Speaker, Consultant, Advisor, consulting fees: Almirall, Biotest, Bristol Myers Squibb, Sanofi, L’Oréal, Novartis, Pierre Fabre, Merck Serono, Roche, Kyowa Kirin, Biofrontera, and 4SC; Financial Interests, Personal, Other, Honoraria: Bristol Myers Squibb and Pierre Fabre; Financial Interests, Personal, Other, support for attending meetings and/or travel: Bristol Myers Squibb and Pierre Fabre. All other authors have declared no conflicts of interest.