PDC*line Pharma presents primary clinical results from phase I/II trial on PDC*lung01 cancer vaccine at ESMO-IO 2024

PDC*lung01, in combination with pembrolizumab, demonstrates the potential to provide meaningful clinical benefit compared to pembrolizumab alone in stage IV Non-Small Cell Lung Cancer patients with PD-L1 ≥ 50% and is associated with mild safety profile

Combination of high dose PDC*lung01 vaccine with pembrolizumab in 42 evaluable patients resulted in confirmed objective response rate of 55%, achieving predefined objective of trial, and median progression-free survival of 8.9 months. A higher immune response is significantly associated with better clinical outcomes (Progression-Free Survival)

Liège, Belgium, and Grenoble, France, December 12, 2024 – PDC*line Pharma, a clinical-stage biotech company developing a new class of potent and scalable active immunotherapies for cancers, today announces the primary clinical results from the last cohort of patients in its phase I/II clinical trial with PDC*lung01 (PDC-LUNG-101, NCT03970746), in an oral presentation at the European Society for Medical Oncology - Immuno-Oncology Congress 2024 (ESMO-IO 2024), December 11 – 13, 2024, Geneva, Switzerland.

PDC*lung01 is the company's off-the shelf therapeutic cancer vaccine candidate for Non-Small Cell Lung Cancer (NSCLC). The primary analysis of the last cohort of patients (B2 cohort) demonstrated that the high dose PDC*lung01 cancer vaccine combined with pembrolizumab is immunologically active and provides a promising anti-tumor response, especially Best Overall Response (BOR) and Progression-Free Survival (PFS), and a good safety profile, with the majority of reported side effects being mild and in line with most types of vaccines.

"We are pleased that PDC*lung01 in combination with anti-PD-1 showed a very promising and durable response as well as a significant immune response in the last cohort of patients of the phase I/II trial, with indications of a relationship with clinical outcome in cohort B2. The data suggest that this combination could offer a clinically meaningful tumor response in stage IV NSCLC patients, along with a compelling safety profile," said Prof Johan Vansteenkiste, emeritus professor in respiratory oncology at KU Leuven in Belgium and chair of the Data and Safety Monitoring Board (DSMB).

The phase I/II trial (PDC-LUNG-101) aimed to assess the safety, tolerability, immunogenicity and preliminary clinical activity of PDC*lung01 in NSCLC patients, alone or in combination with anti-PD-1 treatment. PDC*lung01 was administered weekly through both subcutaneous and intravenous routes, in six consecutive doses. The trial was conducted across 17 European clinical sites.

PDC*lung01 was administered to a total of 67 evaluable HLA-A*02:01 positive NSCLC patients, at two dose levels and settings:

- As a single agent in the adjuvant setting for stage II & IIIa NSCLC (cohorts A1: Low Dose, A2: High Dose)

- Combined with standard of care anti-PD-1 in first-line stage IV NSCLC patients with a PD-L1 tumor proportion score of ≥50% and no targetable driver mutation (cohorts B1: Low Dose, B2: High Dose)

Clinical activity parameters, such as Objective Response Rate (ORR) and PFS, were assessed only in cohorts B1 and B2. PDC*line Pharma has reported primary analysis for 42 evaluable patients in the B2 cohort that reached 9-month follow-up as predefined in the statistical analysis plan of the trial. With a database cut-off date on July 18, 2024, the patients' median follow-up was 19.5 months (95% CI 13.8-25.6).

Key highlights from the oral presentation

Title: Phase I/II trial evaluating the therapeutic cancer vaccine PDC*lung01 in combination with anti-PD-1 in untreated stage IV NSCLC patients

- ***PDC*lung01 demonstrated significant immune response with a significant association with clinical outcome***
  A tumor antigen-specific and effector memory CD8+ T-cell response (with a Limit Of Quantification – LOQ - of 0.003%) was induced against the lung cancer antigens of PDC*lung01 in 56% of patients. Remarkable expansions of anti-tumor CD8+ T-cells were observed, up to 2.3% of total CD8+ T-cells. Furthermore, a significant correlation was observed between the amplitude of antigen-specific CD8+ T-cell response and the PFS, for patients with no primary resistance to pembrolizumab.
- ***PDC*lung01, in combination with pembrolizumab, is associated with a promising objective response rate and progression free survival in first line setting stage IV NSCLC patients (PD-L1 ≥50%)***
  A target of 15% absolute increase in confirmed ORR versus pembrolizumab alone (KEYNOTE-042) met pre-specified statistical success criteria for the 42-evaluable patients per protocol population. The Best Overall Response (BOR) according to RECIST 1.1 included 23 confirmed Partial Response (55%) and 12 Stable Disease (29%) with an ORR of 55% (80% CI 43.7%; 65.4%) versus 39% for external comparator KEYNOTE-042. The Disease Control Rate* (DCR) is 76% (80% CI: 83.8, 65.4) and Clinical Benefit Rate† (CBR) is 64%. A median PFS of 8.9 months has been reached, representing a 36% relative improvement vs KEYNOTE-042 (+2.4 months increase). The 9-month PFS rate was 50% (80% CI 39.1%; 60.9%). Median duration of response and median overall survival were not reached.
- ***PDC*lung01 treatment at high dose with pembrolizumab exhibited a mild safety profile***
  In the B2 cohort, 48 patients received at least one dose of PDC*lung01. Among them, 45 received at least five doses of PDC*lung01 and had one post-baseline radiological evaluation, qualifying them as evaluable per protocol. Overall, the high dose of PDC*lung01 showed a mild safety profile. Most of the related Treatment Emergent Adverse Events (TEAEs) were consistent with Adverse Events (AEs) associated with subcutaneous or intravenous injections of other vaccines (grades 1-2), with only one grade 4 related TEAE. Only 2% of related TEAEs led to discontinuation (vs 9.1% for pembrolizumab alone in KEYNOTE-042).

The oral presentation is available here.

"Reaching our predefined objective of a 15% absolute increase in objective response rate compared to KEYNOTE-042 marks a significant milestone for PDC*lung01. Moreover, the observed 36% relative improvement in median progression-free survival highlights the potential of this combination therapy. Notably, the strong correlation between the magnitude of antigen-specific CD8+ T-cell responses and progression-free survival reinforces the scientific rationale behind our approach and its promise for improving the

* DCR: Disease control rate defined as confirmed responders + patients with stable disease for at least 3 months (per protocol definition)

† CBR: Clinical benefit rate defined as confirmed responders + patients with stable disease for at least 6 months

outcome for untreated stage IV NSCLC patients. We are committed to advancing this innovative approach to provide new hope for patients facing this challenging disease," said Dr. Frédérique Cantero, medical director at PDC*line Pharma.

Further data from the trial will become available at the end of 2025, once all patients have reached two years of follow-up. Based on these very encouraging findings, PDC*line Pharma is preparing a randomized phase IIb study in untreated stage IV NSCLC (and PD-L1 ≥50%) in combination with pembrolizumab, with initiation planned in 2026.

"We are thrilled by these promising results, which position PDC*lung01 as the first cancer vaccine of its kind tested in metastatic NSCLC with high PD-L1 expression. Its unique mechanism of action and favorable safety profile make it an excellent complement to pembrolizumab and other existing or emerging therapies for this patient population. Moreover, our off-the-shelf technology has significant potential for expansion into other clinical settings and indications. Our upcoming randomized Phase IIb trial is a critical step toward confirming clinical proof of concept and fostering collaborations with industrial partners to bring our innovative technology to market," said Eric Halioua, CEO of PDC*line Pharma.

About PDC*lung01
PDC*lung01 is a cell suspension of seven active agents, made of irradiated human Plasmacytoid Dendritic Cells (PDC*line), loaded with HLA-A*02:01-restricted peptides, derived from NY-ESO-1, MAGE-A3, MAGE-A4, Multi-MAGE-A, MUC1, Survivin and Melan-A tumor antigens. PDC*line is a potent professional antigen-presenting cell that is able to prime and boost the patient's antitumor cytotoxic CD8+ T-cells and is synergistic with anti-Programmed Death-1 (PD-1) treatment.

About PDC*line Pharma
Founded in 2014 as a spin-off of the French Blood Bank (EFS), PDC*line Pharma is a Belgian-French clinical-stage biotech company that develops an innovative class of active immunotherapies for cancers, based on a GMP-grade allogeneic therapeutic cell line of Plasmacytoid Dendritic Cells (PDC*line). PDC*line is much more potent than conventional dendritic cell-based vaccines in priming and boosting antitumor antigen-specific cytotoxic T-cells, including the T-cells specific for neoantigens, and is synergistic with checkpoint inhibitors. The technology can potentially be applied to any type of cancer. Following a first-in-human phase I feasibility study in melanoma, PDC*line Pharma focuses on the development of PDC*lung01, a candidate for Non-Small-Cell Lung Cancer (NSCLC) currently in phase I/II trials, and PDC*neo with neoantigens in preclinical development. The company has a staff of 42, with an experienced management team. It has raised more than €62M in equity and non-dilutive funding. In March 2019, PDC*line Pharma granted an exclusive license to the LG Chem Life Sciences company in South Korea and an exclusive option in other Asian countries, for the development and commercialization of the PDC*lung01 cancer vaccine for lung cancer. The total deal is worth $123M, plus tiered royalties on net sales in Asia.
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