

# PARIS-Pembrolizumab in combination with radiotherapy in locally advanced non-small cell lung cancer (NSCLC)

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<b>Registration date</b> 19/07/2017	<b>Overall study status</b> Stopped	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 21/06/2019	<b>Condition category</b> Cancer	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

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## Contact information

Type(s)

Public

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## Additional identifiers

Clinical Trials Information System (CTIS)

2017-000444-17

Protocol serial number

34452

## Study information

Scientific Title

# A Phase I Study of Pembrolizumab anti PD-1 monoclonal antibody in combination with Radiotherapy in locally advanced Non-Small Cell Lung Cancer (NSCLC)

## Acronym

PARIS

## Study objectives

The aim of this study is to determine the recommended phase II dose of pembrolizumab, in combination with a standard dose of radical thoracic radiotherapy, in patients with locally advanced non-small cell lung cancer (NSCLC), in order to be used in future phase II trials. The safety and toxicity of the combination of pembrolizumab (at the recommended dose) and radiotherapy are also be investigated.

## Ethics approval required

Old ethics approval format

## Ethics approval(s)

North West - Greater Manchester South Research Ethics Committee, 22/05/2017, rec: 17/NW/0242

## Study design

Non-randomised; Interventional; Design type: Treatment, Drug, Radiotherapy

## Primary study design

Interventional

## Study type(s)

Treatment

## Health condition(s) or problem(s) studied

Lung Cancer

## Interventions

Participants receive the first dose of pembrolizumab two weeks before the start of radiotherapy. Pembrolizumab is subsequently delivered every three weeks, starting on the first day of radiotherapy and are continued after completion of radiotherapy for up to 12 months. Participants receive radiotherapy for up to six and a half weeks.

As this combination of treatment has not been given before, participants are registered initially into a dose finding phase where dose limiting toxicities (DLTs) is monitored during and for 12 weeks after completion of combined pembrolizumab and thoracic radiotherapy at each dose level in order to confirm the recommended phase II dose. Participants are given a different dose of pembrolizumab treatment depending on the group or 'cohort' they are recruited into.

The starting dose of pembrolizumab for the first patients are 200 mg (dose level 1). This dose may be reduced to a dose of 100 mg (dose level -1) if unacceptable numbers of dose limiting toxicities are experienced at dose level 1. A maximum of 12 participants are treated in the dose finding part of the study aiming to establish the recommended phase II dose (RP2D).

Once the recommended phase II dose is found, an expanded cohort of 13 participants are treated at this dose of pembrolizumab to obtain further safety data.

During radiotherapy treatment the patient are seen weekly for follow-up.

After completion of combination pembrolizumab and radiotherapy treatment, patient visits are scheduled at these time-points:

1. Weekly visits until toxicity resolved to grade 0-1 after radiotherapy. Patients in the dose finding cohort will also be seen weekly to week four regardless of toxicity.
2. Patients on maintenance Pembrolizumab: Three weekly visit up to 12 months
3. Patients not on maintenance Pembrolizumab: Monthly visits for up to four months post RT and then at months six, nine and 12.
4. CT scan assessment within a month of completing RT, three, six and 12 months (following RT) Thereafter, follow-up visits are scheduled according to host institution protocol.

All participants, including those withdrawn due to toxicity, are followed up for adverse reactions and serious adverse reactions until death, withdrawal of consent, or the end of the study (whichever occurs first).

## **Intervention Type**

Other

## **Phase**

Phase I

## **Primary outcome(s)**

1. Recommended phase II dose is measured using the amount of participants in the dose finding phase experiencing dose limiting toxicity (DLT) in the time period during and for 12 weeks after treatment with combined Pembrolizumab and thoracic radiotherapy
2. Dose limiting toxicity is measured using toxicities experienced from the start of treatment to 12 weeks post combination therapy

## **Key secondary outcome(s)**

1. Safety profile of Pembrolizumab combined with thoracic RT (acute and late toxicity) is measured by assessing the occurrence of SAEs, SARs, and SUSARs until 90 days after the participant has stopped trial treatment. The toxicity profile is measured by assessing the occurrence of adverse events until 30 days after the participant has stopped trial treatment.
2. Treatment compliance of Pembrolizumab combined with thoracic RT is measured by recording dose reductions, delays, omissions, and withdrawals throughout each participant's treatment on the study
3. Best overall response to Pembrolizumab combined with thoracic RT is measured using the RECIST criteria from the start of treatment until disease progression/recurrence (taking as reference for progressive disease the smallest measurements recorded since the treatment started)
4. Best overall response to Pembrolizumab combined with thoracic RT measured according to immune-related response criteria (irRC) is measured as the best confirmed irRC overall response over the study as a whole, recorded between the date of first dose until the last tumour assessment before subsequent therapy (except for local palliative radiotherapy for painful bone lesions) for the individual participant
5. Progression-free survival is measured using date of registration to first documented evidence of disease progression or death
6. Overall survival is measured from participant records from date of registration to death

## **Completion date**

## Eligibility

### Key inclusion criteria

1. Histologically or cytologically confirmed NSCLC
2. Unresectable stage III NSCLC not suitable for concurrent chemoradiotherapy i.e;
  - 2.1. Patient unsuitable for cisplatin (eg poor renal function);
  - 2.2. Large volume of disease with predicted dose to thoracic organs at risk that are likely to exceed the constraints for concurrent chemoradiotherapy, in the opinion of a clinical oncologist specialised in lung cancer
3. Stage IV NSCLC with dominant chest symptoms and low burden of metastatic disease who may benefit from thoracic RT
4. Patient considered suitable for radical radiotherapy
5. If chemotherapy has been given previously, the maximum interval between the last day of chemotherapy and the start of radiotherapy must be 6 weeks. The minimum interval between the last day of chemotherapy and the start of Pembrolizumab must be one week
6. Age  $\geq 18$
7. Life expectancy estimated to be greater than 6 months
8. Performance status (ECOG) 0 or 1 (see Appendix 1)
9. MRC dyspnoea score  $< 3$  (see Appendix 2)
10. FEV1  $\geq 40\%$  predicted and DLCO  $\geq 40\%$  predicted; Lung V20  $\leq 30\%$  in the dose finding part of the study and  $\leq 35\%$  in the expanded cohort
11. No prior thoracic radiotherapy (excluding patients that have had RT for Breast cancer providing that the overlap is minimal as per local investigators discretion or as discussed and agreed by CI as required) or T cell modulating antibodies (including anti-PD-1, anti-PD-L1, PD-L2, anti-CD137 and anti-CTLA4, including ipilimumab or any other antibody or drug specifically targeting T-cell co-stimulation or checkpoint pathways)
12. Measurable disease based on RECIST 1.1
13. Patient willing to undergo a repeat biopsy post RT
14. Written informed consent must be given according to GCP and national regulations.
15. Adequate organ function within 7 days of study treatment as defined in the protocol

### Participant type(s)

Patient

### Healthy volunteers allowed

No

### Age group

Adult

### Lower age limit

18 years

### Sex

All

### Key exclusion criteria

1. Mixed non-small cell and small cell tumours
2. Participation in a study of an investigational agent or using an investigational device within 4

weeks prior to the anticipated start of treatment.

3. Current or previous malignant disease within 3 years except CIN, non-melanoma skin cancer and low grade, low stage prostate cancer found as incidental finding and not requiring treatment
4. History of interstitial pneumonitis
5. Presence of brain metastases confirmed by CT or MR brain (unless suitable for local treatment such as SRS or Neurosurgery)
6. History of autoimmune disease requiring steroids or immunosuppressive medication
7. Uncontrolled hypothyroidism or hyperthyroidism
8. Other diseases requiring immunosuppressive therapy greater than 28 days prior to the anticipated first dose of trial treatment.
9. Other diseases requiring systemic glucocorticoid (doses  $\leq$  10 mg prednisolone or equivalent) prior to the first dose of trial treatment.
10. Received a prior autologous or allogeneic organ or tissue transplantation.
11. Chronic GI disease likely to interfere with protocol treatment.
12. Testing positive for human immunodeficiency virus, active hepatitis B or C infection.
13. Treatment with live vaccine within 30 days prior to the first dose of trial treatment.
14. Patients of reproductive potential who are unable to comply with effective contraception if sexually active during the study and for up to 120 days after the last dose of Pembrolizumab
15. Women who are pregnant or breastfeeding. Women of childbearing potential must have a negative serum or urine pregnancy test
16. Any psychological, familial, sociological or geographical condition potentially hampering compliance with the study protocol and follow-up schedule; those conditions should be discussed with the patient before registration in the trial

**Date of first enrolment**

01/08/2017

**Date of final enrolment**

01/02/2020

## **Locations**

**Countries of recruitment**

United Kingdom

England

**Study participating centre**

**The Christie Hospital**

Wilmslow Road

Withington

Manchester

United Kingdom

M20 4BX

**Study participating centre**

**St James's University Hospital**  
Beckett Street  
Leeds  
United Kingdom  
LS9 7TF

**Study participating centre**  
**Royal Marsden Hospital**  
Downs Road  
Sutton  
Surrey  
United Kingdom  
SM2 5PT

## **Sponsor information**

**Organisation**  
The Christie NHS Foundation Trust

**ROR**  
<https://ror.org/03v9efr22>

## **Funder(s)**

**Funder type**  
Government

**Funder Name**  
Cancer Research UK

**Alternative Name(s)**  
CR\_UK, Cancer Research UK - London, Cancer Research UK (CRUK), CRUK

**Funding Body Type**  
Private sector organisation

**Funding Body Subtype**  
Other non-profit organizations

**Location**  
United Kingdom

# Results and Publications

## Individual participant data (IPD) sharing plan

The data sharing plans for the current study are unknown and will be made available at a later date.

## IPD sharing plan summary

Data sharing statement to be made available at a later date

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes