

Comparison of two methods of lymph node removal in patients suffering from lung cancer

Submission date 09/11/2017	Recruitment status No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 20/11/2017	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 24/01/2025	Condition category Cancer	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Lung cancer is the number 1 killer among all malignancies in both sexes. The most effective way to treat it is complete surgical resection (removal of part of the lung), which is possible in less advanced cases. Together with the diseased part of the lung, also lymph nodes are removed, as they often are cancer deposits. The standard systematic lymph node dissection (SLND) removes nodes but this only removes nodes from one side of the chest. Unfortunately, cancer deposits can develop also in the contralateral (opposite) side of the chest. This study is aimed at assessment of bilateral removal of the lymph nodes during lung cancer surgery.

Who can participate?

Adults aged 18 with non-small cell lung cancer.

What does the study involve?

Participants are randomly allocated to one of two groups. Those in the first group have their lung resection done with the standard procedure. Those in the second group receive the standard procedure as well as an additional lymph node dissection in the other side of their chest through a neck incision. Participants are followed for operative time, blood loss, number of lymph nodes removed and any other complication during the surgery. Participants are followed up after the surgery for their pain and survival.

What are the possible benefits and risks of participating?

The potential benefit is more complete resection achieved with bilateral removal of lymph nodes, resulting in better chance for cure. There is a possible increased risk of adverse effects as the procedure is more invasive.

Where is the study run from?

This study is being run by Jagiellonian University and takes place in hospitals in Poland, China, Germany, Austria, and Turkey.

When is the study starting and how long is it expected to run for?

January 2017 to December 2025

Who is funding the study?

1. Jagiellonian University in Krakow (Poland)
2. Sun Yat-sen University Cancer Center (China)
3. Catholic Hospital Koblenz (Germany)
4. Otto Wagner Hospital, Vienna (Austria)
5. ELK Berlin Chest Hospital, Berlin (Germany)
6. Istanbul University, Cerrahpasa Medical Faculty (Turkey)
7. Thoraxzentrum Ruhrgebiet (Germany)
8. University of Giessen (Germany)

Who is the main contact?

Professor Jaroslaw Kuzdzal

Contact information

Type(s)

Scientific

Contact name

Prof Jaroslaw Kuzdzal

Contact details

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Additional identifiers

Protocol serial number

1072.6120.91.2017

Study information

Scientific Title

Comparison of unilateral and Bilateral Mediastinal Lymph node dissection in patients with non-small cell lung cancer

Acronym

BML-2

Study objectives

In patients operated on for non-small cell lung cancer, bilateral mediastinal lymph node dissection is associated with improved survival as compared with standard systematic lymph node dissection.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 30/06/2017, Bioethical Committee of the Jagiellonian University (ul. Podwale 3/5, Cracow, 31-118, Poland; +48123704386; kbet@cm-uj.krakow-pl), ref: 1072.6120.91.2017

Study design

Prospective multicentre study

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Non-small cell lung cancer

Interventions

Prospective multicentre study with 1:1 randomisation using computer-generated random numbers. The intervention group includes patients undergoes bilateral mediastinal lymph node dissection (BML), and the control group includes participants who undergo standard systematic lymph node dissection (SLND).

Randomisation in the ratio 1:1 using computer-based random digit generator. All participants receive anatomical lung resection with SLND is performed according to the ESTS guidelines. VATS and thoracotomy approaches are acceptable. In the BML group, additional contralateral lymph node dissection is performed during the same anaesthesia, via separate neck incision (using either the VAMLA technique,¹⁰ or modified TEMLA technique¹⁵).

The following intraoperative parameters are recorded: operative time, blood loss, number of lymph nodes removed from each nodal station, any complications.

The following postoperative parameters are recorded: volume of chest tube output, time of chest drainage, time of air leak, pain intensity measured using the visual analogue scale (VAS), any complications, tumour relapse and survival recorded at least every three months in the first three years, and at least every six months in the 4th and 5th year after surgery.

Patients with stage pII or pIII (according to the final pathological report) are referred for adjuvant platinum-based chemotherapy.

Intervention Type

Procedure/Surgery

Primary outcome(s)

1. Overall and cancer-specific 5-year survival rate is measured using the CRF data at 5-year survival is by definition measured 5 years after initiation of the treatment
2. DFS is measured using the CRF data at the time of closing the study 5 year after treatment of the last patient included

Key secondary outcome(s)

1. Operative time is measured using case report forms at the end of the procedure
2. Blood loss is measured using the scale of the suction device container at the end of the procedure
3. Pain intensity measured using VAS every 4 hours at the days 0, 1, 2, 3, 4, and 5
4. Complications is measured using the CRF data that include records of 45 categories of adverse effects at day of discharge
5. Length of hospital stay is measured using hospital records at the day of discharge
6. Number of removed lymph nodes in each station is counted by the pathologist during the final pathological examination of the surgical specimen

Completion date

31/12/2025

Eligibility

Key inclusion criteria

1. Age \geq 18 years
2. Proven or suspected NSCLC
3. Clinical stage I, II or minimal N2 IIIA, assessed on the basis of CT, PET-CT (except of T1a-b), bronchoscopy and EBUS/EUS (except of T1a-b)
4. General fitness enabling appropriate pulmonary resection (according to the ERS/ESTS guidelines) (both genders are included, this info has been given elsewhere in your on-line form)

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Sex

All

Total final enrolment

307

Key exclusion criteria

1. History of other malignance (except on non-melanoma skin cancer)
2. Final pathological report of tumour other than NSCLC
3. Final pathological report of carcinoid or salivary gland-type tumour
4. Intraoperative finding of M1 disease

Date of first enrolment

30/11/2017

Date of final enrolment

24/05/2022

Locations**Countries of recruitment**

Austria

China

Germany

Poland

Türkiye

Study participating centre**John Paul II Hospital**

Department of Thoracic Surgery

Jagiellonian University

Krakow

Poland

31-202

Study participating centre**Sun Yat-sen University Cancer Center**

Department of Thoracic Surgery

Guangzhou

China

510060

Study participating centre**Istanbul University**

Department of Thoracic Surgery

Cerrahpasa Medical Faculty

Istanbul

Türkiye

34734

Sponsor information**Organisation**

Jagiellonian University

ROR

<https://ror.org/03bqmcz70>

Funder(s)

Funder type

University/education

Funder Name

Uniwersytet Jagielloński w Krakowie

Alternative Name(s)

Universitas Jagellonica Cracoviensis, Jagiellonian University in Krakow, UJ

Funding Body Type

Private sector organisation

Funding Body Subtype

Universities (academic only)

Location

Poland

Funder Name

Sun Yat-sen University Cancer Center

Funder Name

Catholic Hospital, Koblenz, Germany

Funder Name

Otto Wagner Hospital, Vienna, Austria

Funder Name

ELK Berlin Chest Hospital, Berlin, Germany

Funder Name

Istanbul University, Cerrahpasa Medical Faculty, Istanbul, Turkey

Funder Name

Thoraxzentrum Ruhrgebiet (Germany)

Funder Name

University of Giessen

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are not expected to be made available due to the legal regulations of patients' data protection. The data will be stored at the John Paul II Hospital, Krakow, Poland.

IPD sharing plan summary

Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		02/07/2024	04/07/2024	Yes	No
Results article		08/01/2025	10/01/2025	Yes	No
Participant information sheet		13/11/2017	02/04/2019	No	Yes