

Comparing surgical treatment outcomes in patients with different levels of drug-resistant tuberculosis

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		<input type="checkbox"/> Protocol
Registration date 02/07/2019	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
Last Edited 02/07/2019	Condition category Infections and Infestations	<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Tuberculosis (TB) is a bacterial infection that commonly affects the lungs. There are antibiotics that can treat TB, but some strains of the bacteria are resistant to one or more of these antibiotics and the infection can become hard to treat using medicines. It is also possible to treat drug-resistant TB with surgery, by removing infected parts of the lung or collapsing the lung to close cavities. The aim of this study is to follow up patients with TB, whether they were treated with surgery or not, so investigate how surgical treatment affects their TB infection status, level of disability and survival.

Who can participate?

All patients at a Moscow Hospital who were diagnosed with drug-resistant TB between 2011 and 2017.

What does the study involve?

This is an observational study, which means that participants received treatment as usual depending on their condition. Patients received initial drug treatment according to Russian Federation guidelines and then were offered surgery if their doctor thought it was appropriate. Participants could receive drug treatment after surgery as appropriate.

What are the possible benefits and risks of participating?

There were no additional risk for participants enrolled in the study, because their treatment was performed according to guidelines. Participants could benefit from free examinations and additional follow-up and treatment.

Where is the study run from?

I.M. Sechenov First Moscow State Medical University (Russian Federation)

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

October 2011 to December 2017

Who is funding the study?
The investigator is funding the study.

Who is the main contact?
Professor Dmitry Giller, giller-thorax@mail.ru

Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
U1111-1236-2168

Study information

Scientific Title
Pulmonary tuberculosis surgical treatment in patients with multiple and extensive drug-resistant mycobacterial infection

Acronym
PTS MEDR

Study objectives

Radical and semi-radical surgical treatment application can increase treatment efficacy of patients with destructive pulmonary tuberculosis with multiple and extensive drug-resistant *Mycobacterium tuberculosis* infection.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 06/03/2013, I.M. Sechenov First Moscow State Medical University (Sechenov University) Local Ethics Committee 119991 (8 Trubetskaya str. Building 1, Moscow, Russia; +7 495 622-97-06), ref: 03-13

Study design

Observational retrospective study

Primary study design

Observational

Secondary study design

Study setting(s)

Hospital

Study type(s)

Treatment

Participant information sheet

Not available in web format, please use contact details to request a participant information sheet.

Health condition(s) or problem(s) studied

Pulmonary tuberculosis

Interventions

Patients with determined drug resistance were enrolled in study and divided into five groups depending on drug resistance: extensively drug-resistant (XDR), multiple drug-resistant (MDR), poly-drug-resistant (PolyDR), monodrug-resistant (MonoDR) and drug-sensitive (DS). Before surgery was considered, they were treated with antitubercular chemotherapy using one of the standard chemotherapy regimens in the Russian Federation (Guidelines for improving the diagnosis and treatment of respiratory tuberculosis (approved by order of the Ministry of Health of the Russian Federation dated December 29, 2014 No. 951) <https://www.garant.ru/products/ipo/prime/doc/70749840/>) depending on the degree of drug resistance and patient examination. Before surgery patients had on average 3-6 months of chemotherapy. Then surgery was performed. Some patients, especially with bilateral lesions had multistage surgical treatment. Overall 2172 surgeries was performed in 1259 patients. Surgeries performed were: thoracoplasty, segmentectomy, combined polysegmental resections, lobectomy, bilobectomy, lobectomy plus segmentectomy, pneumonectomy, pleuropneumonectomy, transsternal main bronchus occlusion. All patients signed consent before every intervention. Follow-up was performed regularly up to 5 years, with observation duration of 6 years. For a more objective assessment of the study results, each of the above groups were divided into three subgroups, depending on the radical surgery degree:

- Radical (no TB alterations in pulmonary parenchyma and intrathoracic lymphadenopathy [ITLN] verified with computerised tomography [CT])
- Semi-radical (remaining foci or tuberculomas without destruction in operated/contralateral lung; cases with remained cavern under thoracoplasty were also included, because tendency for cavity closure is usually observed in terms up to 6 months.)
- Palliative (cases with bilateral cavitary TB, when surgery was applied just on one side due to patient's rejection of treatment or low cardiorespiratory reserves; elimination of life-threatening conditions without destructions removal)

All groups received treatment in the same hospital and received the following tests:

- Blood test
- Mantoux test
- Diaskin test
- Spirometry
- Blood gases
- CT scan
- Fibrobronchoscopy;
- Microbiological examination of sputum, an operational material with the additional use of accelerated diagnostic methods of DR MBT (BACTEC, molecular genetic methods: real-time PCR
- Xpert MTB / RIF and PCR-TB biochips; cultural method);
- Morphological study of gross section
- Methods of statistical data processing.

Intervention Type

Procedure/Surgery

Primary outcome measure

1. Presence of cavities in pulmonary tissue (CV+/CV-) determined with CT scan/digital X-ray on discharge from the hospital
2. Presence of M tuberculosis assessed using AFB smear test of sputum (AFB+/AFB-) using sputum fluorescent microscopy and culture method on discharge from the hospital

Secondary outcome measures

1. Presence of cavities in pulmonary tissue (CV+/CV-) determined with CT scan/digital X-ray every year for 5 years (1st, 2nd, 3rd, 4th, 5th year) after discharge
2. Presence of M tuberculosis assessed using AFB smear test of sputum (AFB+/AFB-) using sputum fluorescent microscopy and culture method every year for 5 years (1st, 2nd, 3rd, 4th, 5th year) after discharge
3. TB relapse assessed by clinical follow-up up to 5 years (1st, 2nd, 3rd, 4th, 5th year) after discharge.
4. Degree of disability assessed by checking patients' documentation and anamnesis (patient's account of medical history) during follow-up up to 5 years (1st, 2nd, 3rd, 4th, 5th year) after discharge.
5. Survival assessed by follow-up up to 5 years (1st, 2nd, 3rd, 4th, 5th year) after discharge.

Overall study start date

16/10/2011

Completion date

23/12/2017

Eligibility

Key inclusion criteria

Every patient with a diagnosis of drug-resistant M tuberculosis admitted in our clinic between 2011 and 2017 was included in this study.

Participant type(s)

Patient

Age group

All

Sex

Both

Target number of participants

1259

Key exclusion criteria

Patients with unknown drug resistance admitted in our clinic between 2011 and 2017

Date of first enrolment

16/10/2011

Date of final enrolment

23/12/2017

Locations

Countries of recruitment

Russian Federation

Study participating centre

I.M. Sechenov First Moscow State Medical University (Sechenov University)

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Sponsor information

Organisation

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Sponsor type

University/education

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<https://www.sechenov.ru/eng/>

ROR

<https://ror.org/02yqqv993>

Funder(s)

Funder type

Other

Funder Name

Investigator initiated and funded

Results and Publications

Publication and dissemination plan

A publication titled "Long Term Surgical Treatment Results Of Multi And Extensive Drug Resistant Pulmonary Tuberculosis, Depending On Radical Surgery Degree" is planned to be submitted to a journal by 01/08/2019.

2019 results presented at the 27th European Conference on General Thoracic Surgery in https://emma.events/static/upload/ow76/events/ev222/Site/files/ESTS19_Publication_BoA_FINALVERSION.pdf (see abstract O-021)

Intention to publish date

01/02/2020

Individual participant data (IPD) sharing plan

The datasets generated and/or analysed during the current study during this study will be included in the subsequent results publication.

IPD sharing plan summary

Data sharing statement to be made available at a later date