LUME-Meso: A study to test nintedanib in addition to chemotherapy in patients with malignant pleural mesothelioma

This is a summary of a clinical study about a type of cancer in the lining of the lungs and chest cavity called malignant pleural mesothelioma (MPM). This summary describes the results of the study.

We thank all patients who took part in this study. You helped to answer important questions about nintedanib and the treatment of mesothelioma.

What was this study about?

We wanted to find out whether a medicine called nintedanib in combination with standard chemotherapy helps patients with a type of cancer in the lining of the lungs and chest cavity called MPM.

Why was this study needed?

MPM is a cancer in the lining of the lungs and chest cavity. MPM is deadly and difficult to treat. Most patients already have advanced cancer when they are diagnosed. After beginning standard treatment with chemotherapy, patients live one year on average. The study was needed to test if adding nintedanib helps extend a patient's life further.

Which medicines were studied?

We studied the medicine nintedanib in combination with standard pemetrexed and cisplatin chemotherapy.

Nintedanib is a medicine that helps to stop cancer from growing and spreading. Nintedanib blocks the development of new blood vessels in growing tumours. It is used in combination with chemotherapy to treat a certain type of lung cancer called non-small cell lung cancer. Nintedanib is taken as a capsule by mouth.

Pemetrexed and cisplatin is used as standard combination treatment for patients with MPM. It is a type of chemotherapy and is given by infusion into a vein.

Who took part in this study?

All patients in this study were adults with MPM. They had not been treated with surgery and had not received previous treatment with chemotherapy.

Overall, 458 patients took part in the study. The study included 334 men and 124 women. The average age was 64 years. The youngest patient was 28 years old and the oldest patient was 86 years old.

This study was done in Europe, North Africa/South Africa, Asia, Australia, Central America, South America, and North America. The table below shows the countries that the study was done in.

Region	Countries	Number of Patients
Europe	Austria, Belgium, Croatia, Czech Republic, Denmark, France, Germany, Israel, Italy, Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, Turkey, United Kingdom	291
North Africa	Egypt	32
Asia	Japan	29
Australia	Australia	29
Central America	Mexico	26
South America	Argentina, Chile	25
North America	Canada, United States of America	22
South Africa	South Africa	4

Patients in Israel were counted as part of Europe

How was this study done?

The patients were divided into 2 groups. Every patient had an equal chance of being in either group. One group received nintedanib with chemotherapy. The other group received placebo with chemotherapy, or in other words, chemotherapy alone. The placebo capsules looked just like the nintedanib capsules, but did not contain any medicine. In this way, the patients did not know which treatment they were taking. The doctors did not know either.

Patients in the nintedanib with chemotherapy group started on a nintedanib dose of 200 milligrams twice a day. The doctors decreased the dose if the patients had health problems that they could not tolerate. Patients in the placebo with chemotherapy group took placebo capsules twice a day.

All patients began at doses of pemetrexed and cisplatin based on their body size. They were given pemetrexed and cisplatin according to the prescribing information once every 3 weeks. The doctors decreased the dose if the patients had health problems that they could not tolerate. The standard treatment with chemotherapy took up to 6 months. After that, patients continued with nintedanib or placebo alone.

To compare nintedanib with chemotherapy to chemotherapy alone, we measured 'progression-free survival'. This is the time from starting the study treatment until the cancer grew or the patient died. We also measured the time from starting the study treatment until the patients died. This is called 'overall survival'.

Patients visited the doctors regularly. During these visits, the doctors collected information about the patient's health.

What were the results of this study?

For patients who took nintedanib with chemotherapy, the progression-free survival was 6.8 months on average. It was 7.0 months for patients who took chemotherapy alone. The average overall survival was 14.4 months for patients in the group who took nintedanib and chemotherapy. It was 16.1 months for patients in the group who took chemotherapy alone.

We did statistical tests on these results. The statistical tests showed that nintedanib with chemotherapy was not different from chemotherapy alone for progression-free survival and overall survival.

Did patients have any unwanted effects?

Yes, patients in both groups had unwanted effects. Unwanted effects are health problems that the doctors think were caused by the study medicines. In this study, 204 out of 227 patients (90%) in the nintedanib with chemotherapy group had unwanted effects. 190 out of 228 patients (83%) in the placebo with chemotherapy group had unwanted effects.

The table below shows the 6 most common drug related unwanted effects in the nintedanib with chemotherapy group as reported by the investigator.

Unwanted effect	Nintedanib with chemotherapy (227 patients)	Placebo with chemotherapy (228 patients)
Nausea	127 patients (56%)	106 patients (47%)
Diarrhoea	95 patients (42%)	42 patients (18%)
Vomiting	78 patients (34%)	49 patients (22%)
Reduced number of a type of white blood cells (neutropenia)	69 patients (30%)	60 patients (26%)
Decreased appetite	54 patients (24%)	48 patients (21%)
Fatigue	49 patients (22%)	47 patients (21%)

Some unwanted effects were serious because they required a visit to hospital or a longer stay in hospital, were life threatening, or fatal. Unwanted effects were also serious if they led to disability or the doctor thought they were serious for any other reason. In this study, 55 patients (24%) in the nintedanib with chemotherapy group had serious unwanted effects and 45 patients (20%) in the chemotherapy alone group had serious unwanted effects, as assessed by the investigator. 3 patients (1%) in the nintedanib with chemotherapy group died from unwanted effects. 4 patients (2%) in the chemotherapy alone group died from unwanted effects.

Where can I find more information about this study?

You can find further information about the study at these websites:

1. Go to http://www.trials.boehringer-ingelheim.com/ and search for the study number 1199-0093.
2. Go to www.clinicaltrialsregister.eu/ctr-search and search for the EudraCT number 2012-005201-48.
3. Go to www.clinicaltrials.gov and search for the NCT number NCT01907100.

Boehringer Ingelheim sponsored this study.

The full title of the study is: 'LUME-Meso: Double blind, randomised, multicentre, phase II/III study of nintedanib in combination with pemetrexed / cisplatin followed by continuing nintedanib monotherapy versus placebo in combination with pemetrexed / cisplatin followed by continuing placebo monotherapy for the treatment of patients with unresectable malignant pleural mesothelioma'.

This study started in September 2013 and finished in August 2018.

Are there additional studies?

If we do more clinical studies with nintedanib, you will find them on the websites listed above. To search for these studies, use the word nintedanib.

Important notice

This summary shows only the results from one study and may not represent all of the knowledge about the medicine studied. Usually, more than one study is carried out in order to find out how well a medicine works and the side effects of the medicine. Other studies may have different results.

You should not change your therapy based on the results of this study without first talking to your treating physician. Always consult your treating physician about your specific therapy.

Boehringer Ingelheim has provided this lay summary in accordance with European Union transparency obligations.