

Summary of Clinical Trial Results

A study of atezolizumab (immunotherapy) with chemotherapy compared with chemotherapy on its own in people with a type of lung cancer called ‘non-squamous non-small cell lung cancer’

See the end of the summary for the full title of the study.

About this summary

This is a summary of the results of a clinical trial (called a ‘study’ in this document) – written for:

- Members of the public and
- People who took part in the study.

This summary is based on information known at the time of writing.

The study started in April 2016. This summary includes the results that were analysed in July 2019. At the time of writing this summary, this study is still going on – people are still receiving treatment.

The results from this study may be different from other studies with the same medicine. This is because there may be different conditions during the studies and different people take part. One study can’t tell us everything about how safe a medicine is and how well it works. It takes lots of people in many studies to find out everything we need to know.

This means that you should not make decisions based on this one summary – always speak to your doctor before making any decisions about your treatment.

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Glossary

- NSCLC = non-small cell lung cancer

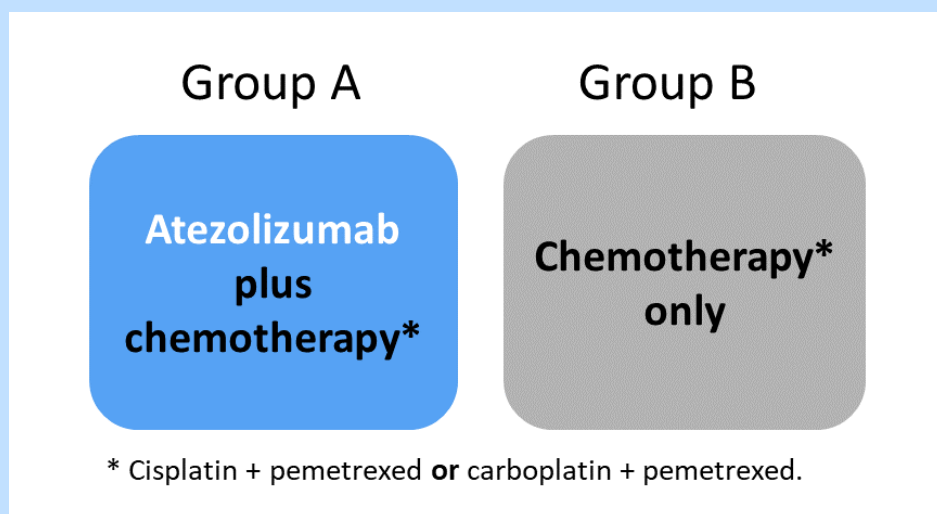
Thank you to the people who took part in this study

The people who took part helped researchers answer important questions about a type of lung cancer called ‘non-small cell lung cancer’ (NSCLC) and a new medicine being studied – ‘atezolizumab’ – taken together with different combinations of chemotherapy.

Key information about this study

Why was this study done?

- This study was done to compare how 3 combinations of drugs worked in people with a type of NSCLC that's called 'non-squamous'. The drug combinations were:
 - The medicine being studied, called 'atezolizumab', taken together with **either**:
 - Existing chemotherapy called 'carboplatin + pemetrexed' **or**
 - Existing chemotherapy called 'cisplatin + pemetrexed'
 - An existing chemotherapy combination (carboplatin + pemetrexed **or** cisplatin + pemetrexed)
- The people were divided into two study groups as shown here, so the effects of the different combinations of medicines could be compared.



- This study included **578 people in 26 countries**. 565 of these people received one of the treatments shown above.

What were the results?

- The main findings were that:
 - For the people in **Group A**, their cancer did not get worse for about 7.7 months on average after starting the treatment, compared with about 5.2 months on average for people in **Group B**.
 - People in **Group A** lived for about 17.5 months on average from the start of the study, compared with about 13.6 months on average for people in **Group B**.

How many people had side effects?

- **Group A**: 100 out of 291 people (34%) had serious side effects related to their treatment.
- **Group B**: 48 out of 274 people (18%) had serious side effects related to their treatment.

- At the time of writing this summary, the study is still happening. It is expected to end in January 2022.

1. General information about this study

Why was this study done?

People with the type of NSCLC called 'non-squamous' usually take medicine called chemotherapy that kills cancer cells or stops the cancer cells from growing. 'Non-squamous' means that this type of NSCLC does not contain squamous cells. Squamous cells are a type of lung cell that are affected by cancer. Squamous cell cancers are usually found in the centre of the lung, but non-squamous cell cancers usually start around the edges of the lungs.

Chemotherapy that kills cancer cells using platinum is called 'platinum-based chemotherapy' – this type of treatment can use two different types of chemotherapy drugs taken together. However, chemotherapy may work for only a short time and then the cancer gets worse again. Sometimes, it may not work at all and the people with lung cancer may not live very long.

New medicines are needed to be able to treat the cancer – shrink the tumour – more effectively, and to help people to live longer. If the tumour shrinks, people may also be able to manage their cancer better. Immunotherapy is a new type of medicine that helps a person's own immune system attack cancer cells. **Immunotherapy may work better in some people than in others, or it may work for only a short time.** This may be because the cancer cells can 'hide' from the immune system and/or learn to escape the immune system's attacks.

Some types of chemotherapy can 'wake up' the immune system so it is more likely to 'find' cancer cells. Taking immunotherapy together with chemotherapy could help the immunotherapy to work better at attacking cancer cells.

In this study, researchers wanted to see if taking an immunotherapy (atezolizumab) together with chemotherapy would help people with non-squamous NSCLC live longer. The researchers also wanted to see if this combination would stop the cancer from growing for longer than chemotherapy on its own. The people in this study did not take other medicine for lung cancer before taking part in this study.

What were the medicines being studied?

This study looked at different combinations of a new medicine (immunotherapy) and existing chemotherapy medicines in 2 groups of people who had non-squamous NSCLC:

- **Group A: atezolizumab** (new medicine) plus **cisplatin *or* carboplatin + pemetrexed** (existing chemotherapy)
- **Group B: cisplatin *or* carboplatin + pemetrexed** (existing chemotherapy)

Atezolizumab is the medicine being studied here, in combination with chemotherapy.

- This medicine is a type of immunotherapy.
- The body's immune system fights diseases like cancer. However, cancer cells can block (stop) the immune system from attacking the cancer. Atezolizumab releases this blockage – meaning that the immune system is able to fight the cancer cells.

- When people take atezolizumab, their tumour (cancer) may get smaller.

The existing **chemotherapy** medicines used in this study were:

- **Cisplatin:**
 - This medicine is a platinum chemotherapy drug.
 - Cisplatin affects the genetic material in cells – the DNA. This stops cancer cells from dividing into new cells and kills them.
- **Carboplatin:**
 - This medicine is a platinum chemotherapy drug.
 - Carboplatin works in the same way as cisplatin – it affects the genetic material in cells to stop the cancer cells from dividing into new cells and kills them.
- **Pemetrexed:**
 - This medicine is a type of chemotherapy drug called an ‘antimetabolite’.
 - Pemetrexed stops cancer cells making and repairing DNA so they can't grow and divide into new cells.
 - Pemetrexed can be taken on its own or with other cancer drugs such as cisplatin and carboplatin.

After people stopped taking the study drugs, they were given ‘maintenance therapy’ – treatment to stop the cancer from coming back.

What did researchers want to find out?

- Researchers did this study to compare atezolizumab plus chemotherapy with chemotherapy on its own – to see how well atezolizumab plus chemotherapy worked (see section 4 “What were the results of the study?”).
 - People in **Group A** took atezolizumab with chemotherapy (cisplatin *or* carboplatin + pemetrexed) to see whether this combination would work better than chemotherapy by itself (**Group B**) for people with non-squamous NSCLC.
- They also wanted to find out how safe the medicines were – by checking how many people had side effects in each treatment group and seeing how serious they were (see section 5 “What were the side effects?”).

The main questions that researchers wanted to answer were:

1. How much time was there between the start of treatment in **Group A** and **Group B** and people’s cancer getting worse?
2. How long did people in **Group A** and **Group B** live (during this study)?

What kind of study is this?

This was a ‘**Phase 3**’ study. This means that before this study started, atezolizumab had been tested in a small number of people with NSCLC. In this study, a larger number of people with NSCLC took either atezolizumab combined with chemotherapy or chemotherapy on its own. Phase 3 studies are done in a large number of people to see if

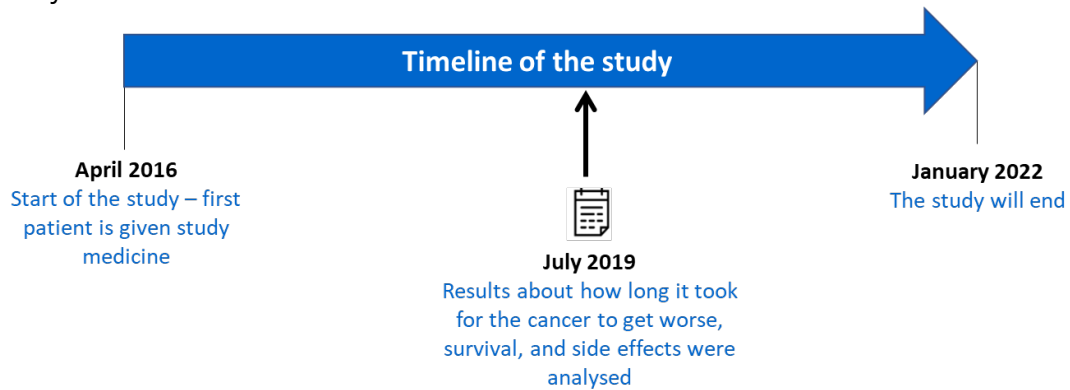
a drug works better than the usual treatment and is safe enough for it to be ‘approved’ by the health authorities as a treatment that can be prescribed by your doctor.

The study was ‘**randomised**’. This means that it was decided by chance which of the medicines people in the study would take – like tossing a coin. Randomly choosing which medicine people take makes it more likely that the 2 study groups will have a similar mix of people (for example, similar ages, similar number of men and women). Other than the different medicines given to people in each group, all other care was the same.

This was an ‘**open label**’ study. This means that both the people taking part in the study and the study doctors knew which of the study medicines people were taking.

When and where did the study take place?

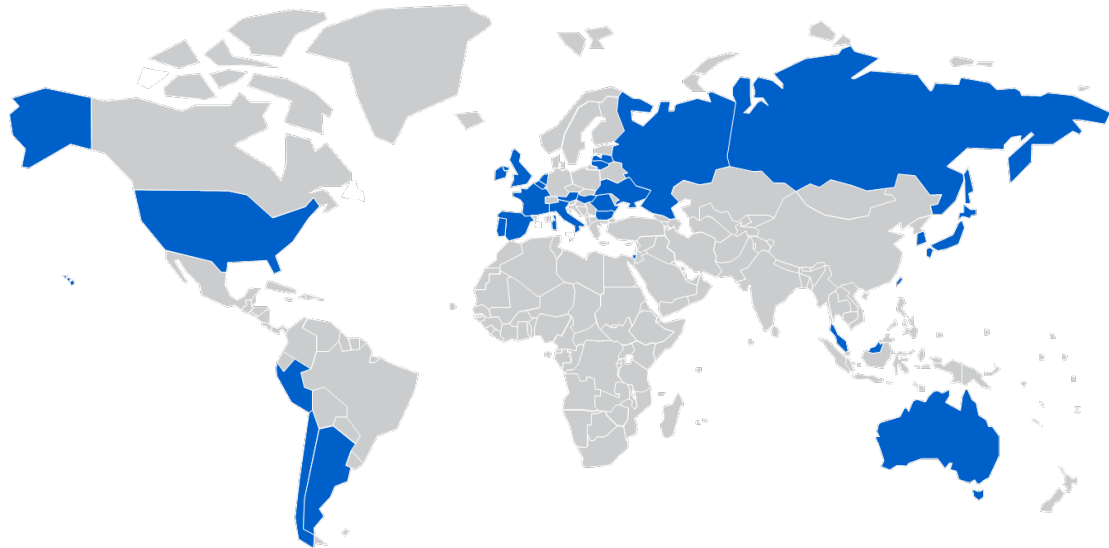
The study started in April 2016. This summary includes the results up until July 2019. At the time of writing this summary, study doctors are still collecting information about the safety of the medicine.



The symbol on the timeline (📄) shows when the information shown in this summary was analysed (July 2019 – 3 years and 3 months after the study started).

The study took place at 164 hospitals and clinics in 26 countries in Europe, Latin America, North America, Asia, and Australia.

This map shows the countries where this study took place.

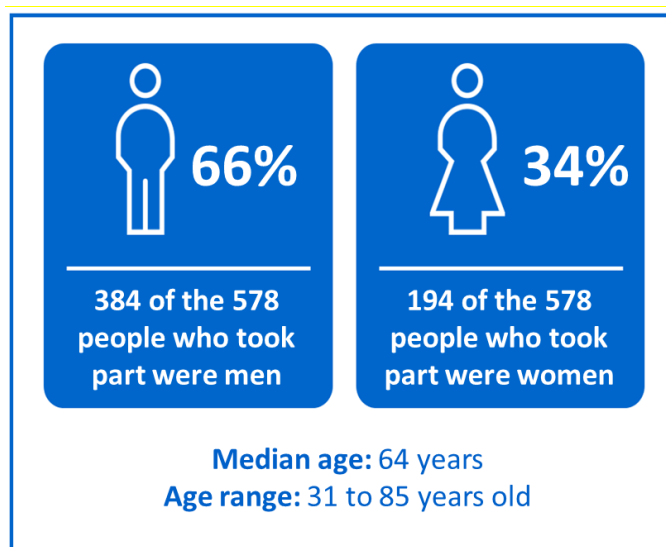


- Argentina
- Australia
- Austria
- Belgium
- Bulgaria
- Chile
- France
- Hungary
- Ireland
- Israel
- Italy
- Japan
- Latvia
- Lithuania
- Malaysia
- Netherlands
- Peru
- Portugal
- Republic of Korea
- Romania
- Russian Federation
- Spain
- Taiwan
- Ukraine
- United Kingdom
- United States

2. Who took part in this study?

In this study, 578 people with non-squamous NSCLC took part.

Here is more information on the people who took part in the study.



People could take part in the study if:

- They had advanced non-squamous NSCLC – called ‘advanced’ because the cancer had spread from where it started to nearby cells or to other parts of the body.
- They had not taken chemotherapy for their advanced lung cancer.
- The lung cancer did not have changes (mutations) in the genes called *EGFR* or *ALK*.

People could not take part in the study if:

- They had cancer that had spread to the brain or spinal cord and had not been treated.
- They had an illness that causes their immune system to attack their own body (called an ‘autoimmune disease’).
- They had taken any medicines before that work like atezolizumab.

3. What happened during the study?

During the study, people were selected at random, by a computer, to be in one of the 2 treatment groups.

The treatment groups were:

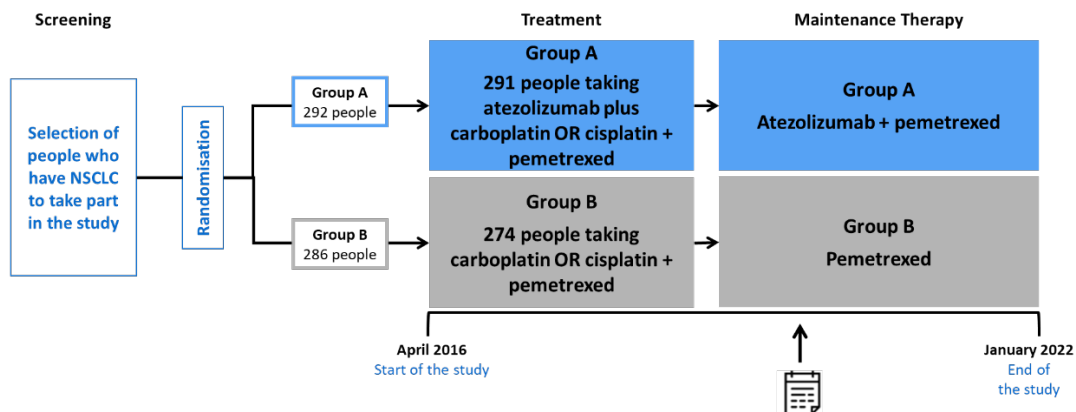
- **Group A:** atezolizumab (new medicine) plus cisplatin or carboplatin + pemetrexed (existing chemotherapy)
- **Group B:** cisplatin or carboplatin + pemetrexed (existing chemotherapy)

After people stopped taking the study drugs, they were given ‘maintenance therapy’ – treatment to stop the cancer from coming back.

This table shows the number of people who took each study treatment, and how often the drugs were taken.

	Group A Atezolizumab plus cisplatin or carboplatin + pemetrexed	Group B Cisplatin or carboplatin + pemetrexed
Number of people in this group (chosen by computer)	292	286
Number of people who took this medicine	291	274
How the drugs were taken	Injected into a vein	Injected into a vein
When the drugs were taken in each 3-week treatment cycle	Atezolizumab: day 1 Carboplatin or cisplatin: day 1 Pemetrexed: day 1	Carboplatin or cisplatin: day 1 Pemetrexed: day 1
Maintenance therapy given after the main treatment was completed	Atezolizumab + pemetrexed	Pemetrexed only

This picture shows more information about what has happened in the study so far – and what the next steps are.



The symbol on the timeline (📅) shows when the information shown in this summary was analysed (July 2019 – 3 years and 3 months after the study started).

- **When people in the study stop taking treatment, they were asked to go back to their study centre for more visits or received phone calls to check their overall health. This is important to determine how long people in this study live.**

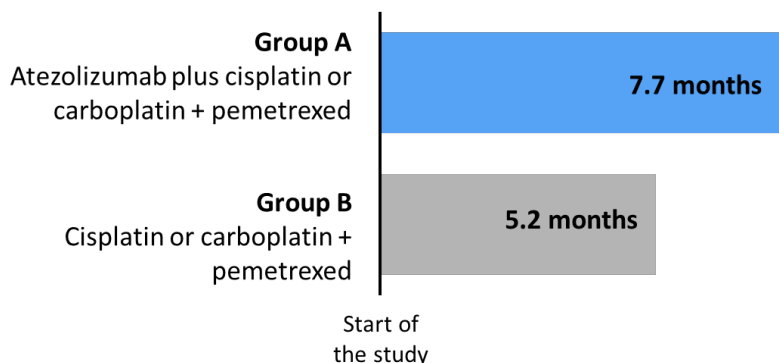
4. What were the results of the study?

Question 1: How much time was there between the start of treatment and people's cancer getting worse in **Group A** and **Group B**?

Researchers looked at how much time there was before people's cancer became worse (in other words, spread to another part of the body, spread further, or grew larger as shown by their scans) in 2 of the groups– **Group A** and **Group B**. This information was collected from all the people in both groups from April 2016 until July 2019.

- In **Group A**, the cancer became worse after around 7.7 months, on average (in some people it took longer to become worse and in others it became worse sooner than 7.7 months).
- In **Group B**, the cancer became worse after around 5.2 months, on average (in some people it took longer to become worse and in others it became worse sooner than 5.2 months).
- The difference between Group A and B is a real difference and not thought to be caused by chance.

On average, how much time was there between the start of treatment and the cancer getting worse?



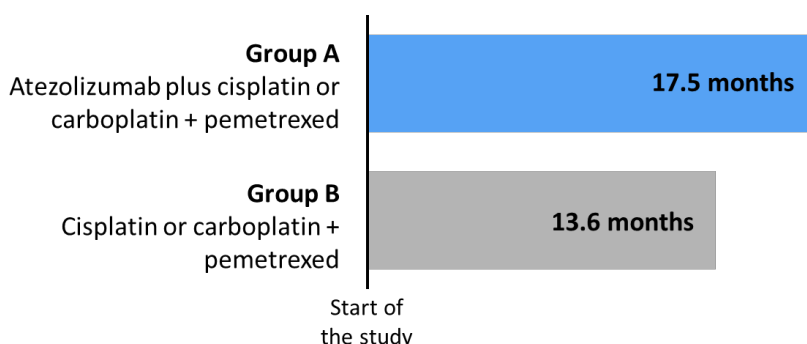
This information was collected from April 2016 until July 2019.

Question 2: How long did people in Group A and Group B live (during this study)?

Researchers also compared how long people in **Group A** and people in **Group B** lived on average. This information was collected from all the people in both groups from April 2016 until July 2019.

- People in **Group A** lived for about 17.5 months on average after starting the medicine.
- People in **Group B** lived for about 13.6 months on average after starting the medicine.
- These numbers for each treatment group are averages, which means that some people lived longer and some people lived for a shorter time.
- Unlike the results shown above, we do not know if this difference between Group A and B is a real difference – it could have been caused by chance.

On average, how long did people live in the study?



This information was collected from April 2016 until July 2019.

- In **Group A**, 192 out of 292 people (66%) died.
- In **Group B**, 197 out of 286 people (69%) died.

This section only shows the key results from this study. You can find information about all other results on the websites listed at the end of this summary (see section 8).

5. What were the side effects?

Side effects are medical problems (such as feeling dizzy) that may happen during the study.

- They are described in this summary because the study doctor believes the side effects were related to the treatments in the study.
- Not all of the people in this study had all of the side effects.
- Side effects related to the treatment may be mild to very serious.
- The side effects can be different from person to person.
- It is important to be aware that the side effects reported here are from this one study. Therefore, the side effects shown here may be different from those seen in other studies, or those that appear on the medicine leaflets.
- Serious and common side effects are listed in the next sections.

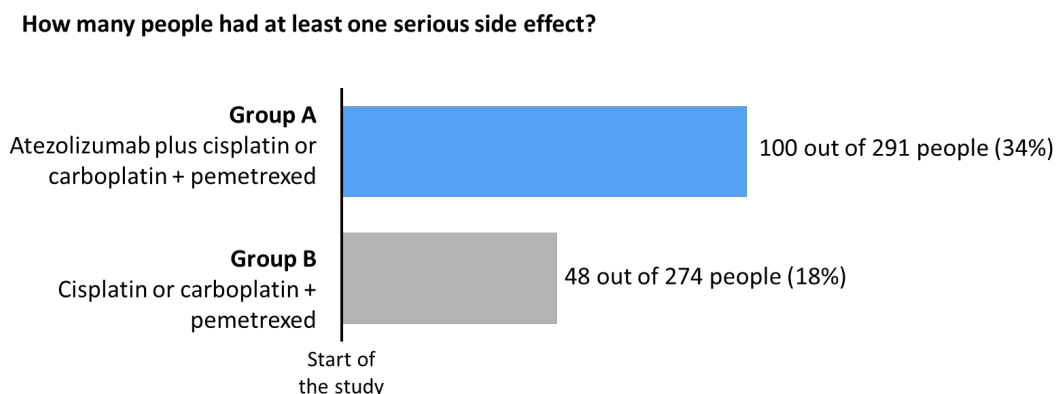
In **Group A**, 291 people took the study medicines and in **Group B**, 274 took the study medicines.

In **Group A**, 266 out of 291 people (91%) of people had at least one side effect that was thought to be related to the medicine being taken. In **Group B**, 240 out of 274 (88%) had at least one side effect that was thought to be related to the medicine being taken.

Serious side effects

A side effect is considered 'serious' if it is life-threatening, needs hospital care, causes lasting problems, or needs treatment with medicine to prevent lasting problems.

During this study, 148 out of 565 people, which is the same as 26 out of every 100 people (26%), who took part had at least one serious side effect that was related to the medicine being taken. The number of people who were given the study medicines and had serious side effects in each group are shown in this picture.



The table below shows the serious side effects that happened in more than 1 out of 100 (1%) of people in each group. Some people had more than one serious side effect.

Some people in the study died because of side effects that may have been related to one of the study medicines:

- 11 out of 291 people (4%) in **Group A** died
- 8 out of 274 people (3%) in **Group B** died.

During the study, some people decided to stop taking their medicine because of side effects – this is shown in this picture.

How many people decided to stop taking their medicine because of side effects?



Side effects of special interest

This table shows the 10 most common side effects of special interest in both treatment groups. These side effects are of special interest to researchers because they show that the medicines may be causing the immune system to attack other parts of the body and not just the cancer. Some people had more than one side effect.

Most common side effects of special interest reported in this study	Group A Atezolizumab plus cisplatin or carboplatin + pemetrexed (291 people total)	Group B Cisplatin or carboplatin + pemetrexed (274 people total)
Rash	26% (75 out of 291)	22% (59 out of 274)
Underactive thyroid	8% (24 out of 291)	2% (6 out of 274)
Inflammation (swelling) of the lung	6% (18 out of 291)	2% (6 out of 274)
Hepatitis	5% (13 out of 291)	Less than 1% (2 out of 274)
Reactions related to how the drug was given (infusion-related reactions)	2% (7 out of 291)	1% (3 out of 274)
Overactive thyroid	2% (7 out of 291)	1% (3 out of 274)
Inflammation of the brain	1% (4 out of 291)	Less than 1% (2 out of 274)
Inflammation of the pancreas	1% (4 out of 291)	Less than 1% (2 out of 274)
Severe reactions of the skin and/or mucous membranes	1% (4 out of 291)	Less than 1% (2 out of 274)
Inflammation of the kidneys	1% (4 out of 291)	Less than 1% (1 out of 274)

Other side effects

You can find information about other side effects (not shown in the sections above) on the websites listed at the end of this summary – see section 8.

6. How has this study helped research?

The information presented here is from one study of 578 people with non-squamous NSCLC. These results helped researchers learn more about NSCLC and treatment with atezolizumab plus chemotherapy.

Overall, this study showed that for people who were given atezolizumab plus platinum-based chemotherapy, their cancer took longer to get worse and they lived slightly longer than people who were given the chemotherapy on its own.

More people who were given atezolizumab plus chemotherapy had side effects than those who were given chemotherapy on its own. The people in this study did not have any new side effects that had not been seen before in people who took atezolizumab or chemotherapy in other studies.

7. Are there plans for other studies?

Other studies looking at the safety and effects of atezolizumab are happening. These studies are looking at the use of atezolizumab in different situations, for example:

- Together with other treatments.
- Given before or after another treatment to help that other treatment work better.
- For other types of lung cancer.
- Given to people as the first treatment for NSCLC that has spread to other parts of the body.

8. Where can I find more information?

You can find more information about this study on the websites listed below:

- <https://clinicaltrials.gov/ct2/show/NCT02657434>
- <https://www.clinicaltrialsregister.eu/ctr-search/trial/2015-003605-42/results>
- <https://forpatients.roche.com/en/trials/cancer/lung-cancer/a-study-of-atezolizumab-in-combination-with-carboplatin-or-cispl.html>

If you want to find out more about the results of this study, the full title of the paper we described here is: “Atezolizumab plus chemotherapy for first-line treatment of non-squamous non-small cell lung cancer: results from the randomized phase III IMpower132 trial”. The authors of the scientific paper are: Makoto Nishio, Fabrice Barlesi, Howard West, Simon Ball, Rodolfo Bordoni, and others. The paper is published in the *Journal of Thoracic Oncology*, and can be accessed by visiting: <https://doi.org/10.1016/j.jtho.2020.11.025>.

Who can I contact if I have questions about this study?

If you have any more questions after reading this summary:

- Visit the ForPatientsplatform and fill out the contact form: <https://forpatients.roche.com/en/trials/cancer/lung-cancer/a-study-of-atezolizumab-in-combination-with-carboplatin-or-cispl.html>
- Contact a representative at your local Roche office.

If you took part in this study and have any questions about the results:

- Speak with the study doctor or staff at the study hospital or clinic.

If you have questions about your own treatment:

- Speak to the doctor in charge of your treatment.

Who organised and paid for this study?

This study was organised and paid for by F. Hoffmann-La Roche Ltd; their headquarters are in Basel, Switzerland.

Full title of the study and other identifying information

The full title of this study is: “A Study of Atezolizumab in Combination With Carboplatin or Cisplatin + Pemetrexed Compared With Carboplatin or Cisplatin + Pemetrexed in Participants Who Are Chemotherapy-Naive and Have Stage IV Non-Squamous Non-Small Cell Lung Cancer (NSCLC) (IMpower132)”.

The study is known as ‘IMpower132’.

- The protocol number for this study is: GO29438.
- The ClinicalTrials.gov identifier for this study is: NCT02657434.
- The EudraCT number for this study is: 2015-003605-42.