

Clinical Trial RESULTS



Research Sponsor: AstraZeneca AB

Drugs Studied: AZD7594

National Clinical Trial #: NCT02648438

Protocol #: D3741C00004

Study Date: January 2016 to June 2016

Short Study Title: A study in healthy participants to compare how AZD7594 is taken up in the bloodstream when taken through different types of inhalers, through the mouth, or through an injection into the bloodstream.

Thank you!

As a clinical study participant, you belong to a large community of participants around the world. You help researchers answer important health questions and discover new medical treatments.

Thank you for taking part in the clinical study for the drug AZD7594. This drug is being developed to treat asthma and chronic obstructive pulmonary disease, also called COPD. You and all of the participants helped researchers learn how AZD7594 acts in the body and if the drug causes medical problems.

AstraZeneca AB, the sponsor of this study, thanks you for your help and thinks it is important for you to know the results of your study. An independent non profit organization called CISC RP prepared this summary of the study results for you with the help of a medical writing organization. We hope it helps you understand and feel proud of your important role in medical research. If you have questions about the results, please speak with the doctor or staff at your study site.

What's happened since my study ended?

Your study started in January 2016 and ended in June 2016. It included 30 participants at 1 study site in the United States. When the study ended, the sponsor reviewed the data and created a report of the results. This is a summary of that report.

Why was the research needed?

Before a new drug can be given to patients, the company developing the drug must do research studies to show that it is safe and effective. The first step in studying a new drug is to test it in healthy people, or people without any serious health problems.

The study drug, AZD7594, is being developed to treat asthma and COPD. Inhalers that contain steroids are used in patients with asthma and COPD to reduce inflammation, or the swelling that can occur in tissues in the lungs. This swelling can sometimes make breathing difficult. AZD7594 does not contain steroids but it works in a similar way to inhalers that do contain steroids.

Researchers in your study compared different forms of AZD7594. One form was a pressurized metered dose inhaler, also called a pMDI. The other 2 forms were dry powder inhalers, called DPI 1 and DPI 2. In all three forms, AZD7594 was put into a sealed chamber. A dose of the study drug was released every time you pressed the inhaler and breathed in.

Researchers wanted to see how much AZD7594 entered each participant's blood after taking it with these different inhalers. They also wanted to compare doses given through an inhaler with doses given through intravenous therapy, also called an IV. An IV is when doctors use a needle to inject a treatment into a participant's vein. Researchers compared these doses with doses given in liquid form through the mouth as well.

Researchers wanted to know:

- How much AZD7594 entered the blood when participants took it using DPI 1 compared to DPI 2?
- How did AZD7594 act in the body when participants took it using DPI 1 compared with DPI 2 or a pMDI?
- What medical problems did participants have after they took AZD7594?

What kind of study was this?

Your study was an "open-label" study. This means that the participants and study staff knew what study drug each participant took.

In this study, everyone took the study drug, but may have taken it using a different inhaler.

Your study included healthy men who were 21 to 45 years old.

What happened during the study?

You and other participants were in the study for up to 10 weeks.

The study had 4 parts, each lasting 5 days, with a total of 30 participants.

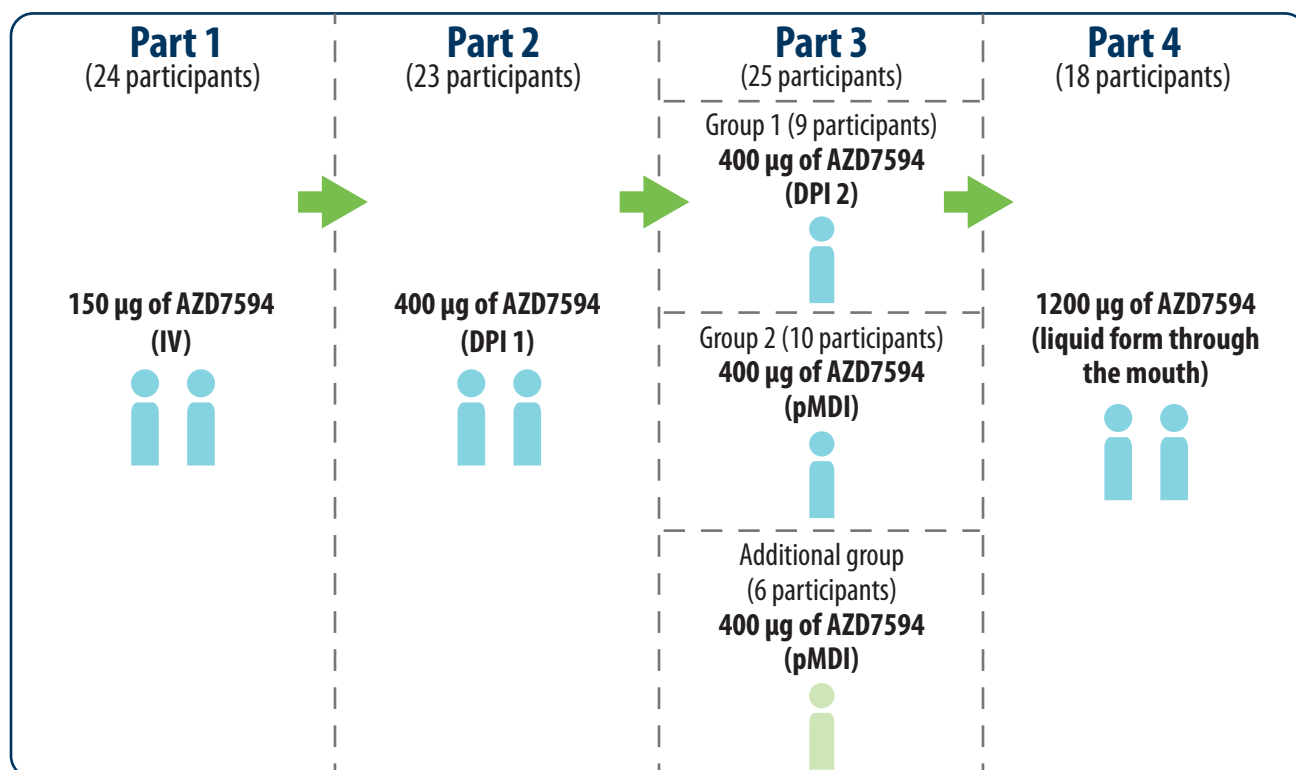
During Part 1, 24 participants took 150 micrograms, or μg , of AZD7594 through an IV. One participant withdrew before Part 2.

During Part 2, 23 participants took 400 μg of AZD7594 using the DPI 1 inhaler. Four additional participants withdrew before Part 3.

During Part 3, researchers split the remaining 19 participants into 2 groups. Group 1 had 9 participants that took 400 μg of AZD7594 using the DPI 2 inhaler. Group 2 had 10 participants that took 400 μg of AZD7594 using a pMDI inhaler. Another group was added to make sure the other Part 3 pMDI inhaler results were accurate. This group had 6 participants who took 400 μg of AZD7594 using a pMDI inhaler only. One additional participant withdrew before Part 4.

During Part 4, 18 remaining participants took 1200 μg of AZD7594 in liquid form through the mouth.

The figure below shows how the study was done.



Throughout the study, researchers did blood tests, physical exams and other tests to check your overall health. Researchers also checked your heart using an electrocardiogram or ECG. At your first visit, researchers repeated some of the tests to make sure you were still healthy.

There was a “washout period” of 7 to 14 days between treatments. During the washout periods, you did not take any drugs. This helped get rid of any effects from previous treatments.

What were the study results?

How much AZD7594 entered the blood when participants took it using DPI 1 compared with DPI 2?

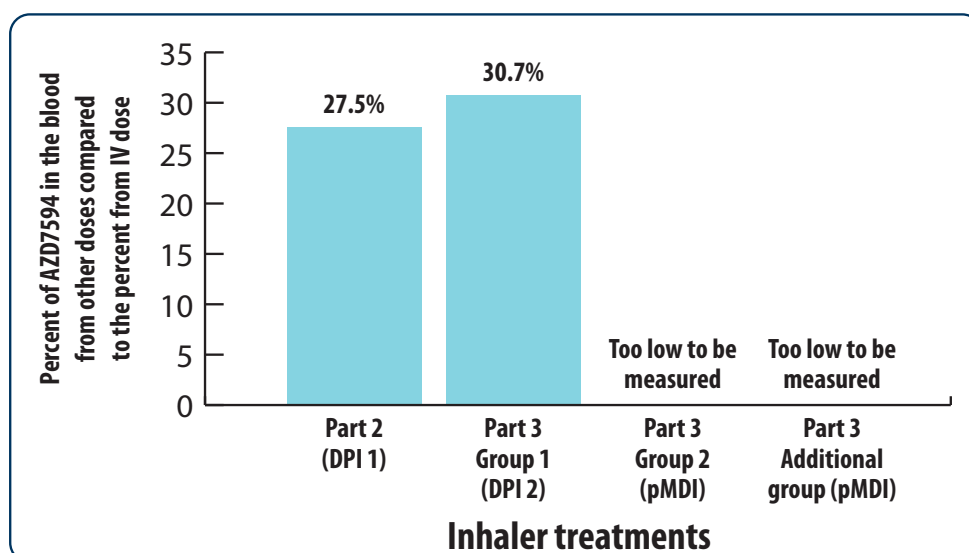
Researchers looked at how much of AZD7594 was in the bloodstream when participants took the study drug in the inhalers, which reached the lungs only, and when participants took the study drug in liquid form through the mouth, which reached the stomach only, compared to the IV.

How much AZD7594 reached the blood through the lungs only?

Researchers found that:

- Participants in Part 2 who used DPI 1 had an average of 27.5% of AZD7594 reach the bloodstream through the lungs.
- Participants in Group 1 of Part 3 who used DPI 2 had an average of 30.7% of AZD7594 reach the bloodstream through the lungs.

The figure below shows how much AZD7594 reached the bloodstream through the lungs after the inhaler doses. Participations in Group 2 of Part 3 who used the pMDI did not have levels of AZD7594 that could be measured. The researchers added an additional group in Part 3 who used a pMDI to make sure these results were accurate. The amount of AZD7594 in the additional group also was too low to measure.



How much AZD7594 reached the blood through the stomach only?

Researchers found that:

- When the participants were given AZD7594 as a liquid through the mouth, very little of the study drug reached the bloodstream. The amount was less than 1% of the amount of AZD7594 found in participants' bloodstreams when the study drug was given as an IV therapy.

How much AZD7594 reached the blood through the lungs and stomach together?

Researchers found that:

- Participants in Part 2 who used DPI 1 had an average of 28.2% of AZD7594 reach their bloodstream through the lungs and stomach together.
- Participants in Group 1 of Part 3 who used DPI 2 had an average of 30.9% of AZD7594 reach their bloodstream through the lungs and stomach together.

How did AZD7594 act in the body when participants took it using DPI 1 compared with DPI 2 or a pMDI?

Researchers found:

- The levels of AZD7594 in the bloodstream following the dose given through the DPI 1 was 28% of the amount in the bloodstream when the dose was given as an IV therapy. For DPI 2, that number was 31 %.
- The levels of AZD7594 in the bloodstream following the dose given as a liquid through the mouth were very low, less than 1 % of the amount in the bloodstream when AZD7594 was given as an IV therapy.
- While comparing the 2 DPI inhalers to each other, researchers found that the amounts of AZD7594 in the bloodstream after participants took those doses were about the same. The highest amount of AZD7594 found in the bloodstream following a dose from DPI 2 was 60% of the total amount of AZD7594 found in the bloodstream following a dose from DPI 1.
- When the pMDI was used, very low amounts of AZD7594 were found in the bloodstream. The researchers did not know why these amounts were so low. An additional group of participants took a second pMDI and the amounts of AZD7594 found in the bloodstream were also very low.
- When AZD7594 was inhaled using DPI 1 and DPI 2, the amounts of AZD7594 in the blood dropped much slower compared to when AZD7594 was given as an IV therapy. It took between 27 and 83 hours for half of the AZD7594 to leave the bloodstream when the inhalers were used.

What medical problems did participants have during the study?

A lot of research is needed to know whether a drug causes a medical problem. So, when new drugs are being studied, researchers keep track of all medical problems that participants have during the study. These medical problems are called “adverse events”. They may or may not be caused by the study drug.

How many participants had medical problems in the study?

The table below shows how many participants in each treatment group developed medical problems.

| | Part 1 IV (24 participants) | Part 2 DPI 1 (23 participants) | Part 3 Group 1 DPI 2 (9 participants) | Part 3 Group 2 pMDI (10 participants) | Part 3 Additional Group pMDI (6 participants) | Part 4 Liquid form (18 participants) |
|---|-----------------------------------|--------------------------------------|--|--|--|--|
| How many participants developed medical problems? | 2 (8.3%) | 0 (0.0%) | 2 (22.2%) | 1 (10.0%) | 1 (16.7%) | 1 (5.6%) |

How many participants developed serious medical problems?

A medical problem is considered serious when it is life threatening, causes lasting problems, or needs hospital care. No participants developed serious medical problems in this study, and no participants died during this study.

What were the most common medical problems in the study?

| | Part 1 IV (24 participants) | Part 2 DPI 1 (23 participants) | Part 3 Group 1 DPI 2 (9 participants) | Part 3 Group 2 pMDI (10 participants) | Part 3 Additional Group pMDI (6 participants) | Part 4 Liquid form (18 participants) |
|---|--|---|--|--|--|---|
| Dizziness | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 1 (10.0%) | 1 (16.7%) | 0 (0.0%) |
| Redness in the outer layer of the eye | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 1 (5.6%) |
| Pain at the site of the injection | 1 (4.2%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Viral infection of the nose, throat, and upper airways | 0 (0.0%) | 0 (0.0%) | 1 (11.1%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Pooling of blood under the skin | 1 (4.2%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Muscle pain | 1 (4.2%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Nasal congestion | 0 (0.0%) | 0 (0.0%) | 1 (11.1%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |

Where can I learn more about the study?

If you have questions about the results, please speak with the doctor or staff at your study site. You can find more information about your study online at www.clinicaltrials.gov/show/results/NCT02648438.

Official study title: A Study to Assess the Bioavailability and to Compare the Pharmacokinetics of AZD7594 Inhaled Via Monodose Inhaler and Multiple-dose Dry Powder Inhalers (DPI) or Pressurized Metered-dose Inhaler (pMDI) in Healthy Male Subjects

The phone number for the AstraZeneca Information Center is 1-877-240-9479.

The results presented here are for a single study. Other studies may provide new information or different results. You should not make changes to your therapy based on the results of a single study without first consulting your healthcare professional.

Thank you

It is said that the greatest gift is one which is given anonymously, giving when you do not know whether you will get direct personal benefit.

This is the gift that you have given by taking part in a clinical trial. It is a brave and selfless act, one that advances medical knowledge and benefits public health.

Thank you for the gift of your participation in clinical research.



The Center for Information & Study on Clinical Research Participation (CISCRP) is a non-profit organization focused on educating and informing the public about clinical research participation. CISCRP is not involved in recruiting participants for clinical trials, nor is it involved in conducting clinical trials.

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