Clinical Study Results

AstraZeneca

Research sponsor: AstraZeneca

Drug studied: Dapagliflozin

Short study title: A study to learn how dapagliflozin affects blood sugar levels in people with type 2 diabetes who already have damaged kidneys

Thank you!

Thank you for taking part in the clinical study for the study drug dapagliflozin. You and all of the participants helped researchers learn more about how dapagliflozin affects the blood sugar levels in people with type 2 diabetes who already have damaged kidneys.

AstraZeneca sponsored this study and thinks it is important to share the results of this study with you and the public. An independent non-profit organization called CISCRP and a medical writing organization called Synchrogenix helped prepare this summary of the study results for you. We hope it helps you understand and feel proud of your important role in medical research.

If you participated in this study and have questions about the results, please speak with the doctor or staff at your study site.

What is happening with this study now?

The participants were in this study for up to about 33 weeks. But, the entire study took about 2 and a half years to finish.

This study started in June 2015 and ended in November 2017. This study included 321 participants in Bulgaria, Canada, the Czech Republic, Italy, Poland, Spain, Sweden, and the United States.

The sponsor reviewed the data collected when this study ended and created a report of the results. This is a summary of that report.

Why was the research needed?

Researchers are looking for a better way to treat people with type 2 diabetes. Before a drug can be approved for patients to take, researchers do clinical studies to find out how it works and how safe it is.

In this study, the researchers wanted to find out if dapagliflozin works in a large number of participants with type 2 diabetes who already have damaged kidneys. They also wanted to find out if the participants had any medical problems during the study.

The body does not use insulin normally in people with type 2 diabetes. This makes the amount of sugar, also called glucose, in the blood too high. High blood sugar levels can lead to several medical problems in people with type 2 diabetes, such as kidney damage.

Dapagliflozin is a drug that is already approved to treat type 2 diabetes. In this study, the researchers wanted to learn how dapagliflozin affects the blood sugar levels in people with type 2 diabetes who already have damaged kidneys. Dapagliflozin stops the kidneys from absorbing sugar before it leaves the body.

The main questions the researchers wanted to answer in this study were:

- How did dapagliflozin affect the blood sugar levels of participants?
- What medical problems did participants have during the study?

To answer the questions in this study, the researchers asked for the help of men and women with type 2 diabetes who already had damaged kidneys. The participants in this study were 43 to 74 years of age.

What kind of study was this?

Part 1 of this study was "single-blind". This means the researchers knew what the participants were taking but the participants did not. All of the participants took a placebo in Part 1. A placebo looks like a drug but does not have any medicine in it. The researchers used a placebo to help make sure any of the effects they saw in the participants who took the drug in Part 2 were actually caused by the drug.

During Part 1, all of the participants took a placebo. The researchers gave all of the participants the same treatment during this part so that the study results for Part 2 would be as accurate as possible.

Part 2 of this study was "double-blind". This means none of the participants, study doctors, or other study staff knew what treatment each participant took. Some studies are done this way because knowing what treatment the participants are taking can affect the results of the study. When the study ended, the research sponsor found out which treatment participants took so they could create a report of the study results.

A computer program was used to randomly choose the treatment each participant took during Part 2. This helped make sure the groups were chosen fairly. The researchers did this so that comparing the results of each treatment was as accurate as possible.

During Part 2, the participants took either dapagliflozin or a placebo.

All of the treatments in this study were taken in tablet form by mouth.

What happened during this study?

Before this study started, the study doctors:

- did a physical examination to make sure the participants could join this study
- checked the blood sugar levels and kidney health of the participants to see how damaged their kidneys were
- asked about the medical history of the participants, how they were feeling, and what medicines they were taking

Part 1

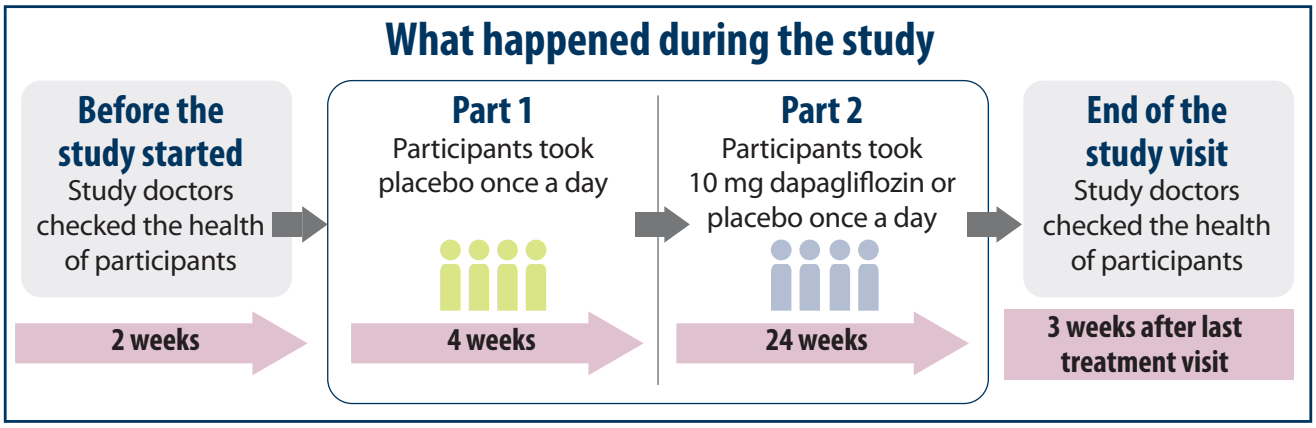
Once the study doctors said that the participants could join this study, the participants took a placebo once a day for 4 weeks. After the first 4 weeks, the participants were put into 2 new treatment groups for Part 2.

Part 2

Once the participants joined Part 2 of this study, they took either dapagliflozin or the placebo once a day for 24 weeks. Each dapagliflozin dose contained 10 milligrams, also known as mg, of the drug.

At the end of this study, the participants went back to the study site for another visit. The study doctors did a physical examination to check the overall health of the participants. The study doctors also took more blood samples and checked the kidneys of the participants.

The figure below shows how this study was done.



What were the results of this study?

This is a summary of the main results from this study overall. The results each participant had might be different and are not in this summary. A full list of the questions the researchers wanted to answer can be found on the websites listed at the end of this summary. If a full report of the study results is available, it can also be found on these websites.

Of the 321 participants in this study, 11 participants left this study early. Most of the participants who left early took different amounts of insulin than they were allowed to during this study. This means the researchers could not be sure if the results they collected from these participants were from the study drug or the insulin. So, the researchers could not use all of the results for these 11 participants.

How did dapagliflozin affect the blood sugar levels of participants?

The researchers found that the participants who took dapagliflozin in Part 2 had lower blood sugar levels than the participants who took the placebo in Part 2.

The researchers wanted to learn how dapagliflozin affects the blood sugar levels in people with type 2 diabetes who already have damaged kidneys. High blood sugar levels can lead to medical problems in people with type 2 diabetes.

The researchers measured the blood sugar levels of the participants at different time points throughout this study.

After 24 weeks of treatment in Part 2:

	157 participants who took dapagliflozin	0.37% average decrease in blood sugar levels
	159 participants who took the placebo	0.03% average decrease in blood sugar levels

What medical problems did participants have?

This section is a summary of the medical problems the participants had during this study that the study doctors thought might be related to the study drug. These medical problems are called “adverse reactions”. An adverse reaction is considered “serious” when it is life threatening, causes lasting problems, or requires hospital care.

These adverse reactions may or may not be caused by the study drug. A lot of research is needed to know whether a drug causes an adverse reaction. The websites listed at the end of this summary may have more information about the adverse reactions or other medical problems that happened in this study.

How many participants had serious adverse reactions?

There were 0.3% of participants who had the serious adverse reaction of fainting during this study. This happened in 1 out of 321 participants.

How many participants had adverse reactions?

There were 8.4% of participants overall who had adverse reactions during this study. This was 27 out of 321 participants.

There were 10.6% of participants in the dapagliflozin treatment group who had adverse reactions during this study. This was 17 out of 160 participants.

There were 6.2% of participants in the placebo treatment group who had adverse reactions during this study. This was 10 out of 161 participants.

There were 1.9% of participants overall who stopped taking treatment because of adverse reactions. This was 6 out of 321 participants.

There were 1.9% of participants in the dapagliflozin treatment group who stopped taking treatment because of adverse reactions. This was 3 out of 160 participants.

There were 1.9% of participants in the placebo treatment group who stopped taking treatment because of adverse reactions. This was 3 out of 161 participants.

None of the participants died during this study.

What adverse reactions did the participants have?

The most common adverse reaction was a urinary tract infection.

The table below shows the most common adverse reactions in this study that happened in at least 2 participants in either treatment group. There were other adverse reactions, but these happened in fewer participants.

Most common adverse reactions

	Dapagliflozin 10 mg (Out of 160 participants)	Placebo (Out of 161 participants)
Urinary tract infection	1.3% (2)	1.2% (2)
Frequent need to urinate	1.9% (3)	0.0% (0)
Frequent thirst	1.3% (2)	0.0% (0)
Gout, also known as arthritis in the joints	1.3% (2)	0.0% (0)
Vaginal itching	1.3% (2)	0.0% (0)
Kidney damage	0.0% (0)	1.2% (2)

How has this study helped patients and researchers?

The results presented here are from a single study. These results helped the researchers learn how dapagliflozin affects the blood sugar levels in people with type 2 diabetes who already have damaged kidneys.

Researchers look at the results of many studies to decide which treatments work best and are safest. Other studies may provide new information or different results. Always talk to a doctor before making any treatment changes.

Further clinical studies with dapagliflozin are planned.

Where can I learn more about this study?

You can find more information about this study on the websites listed below. If a full report of the study results is available, it can also be found here.

- www.clinicaltrials.gov. Once you are on the website, type **"NCT02413398"** into the search box and click **"Search"**.
- www.clinicaltrialsregister.eu. Once you are on the website, click **"Home & Search"**. Then, type **"2015-000804-24"** in the search box and click **"Search"**.

Official study title: A Multicentre, Double-Blind, Placebo-Controlled, Parallel Group, Randomized, Phase III Study to Evaluate the Glycaemic Efficacy and Renal Safety of Dapagliflozin in Patients with Type 2 Diabetes Mellitus and Moderate Renal Impairment (CKD 3A) Who Have Inadequate Glycaemic Control

Protocol number: D1690C00024

AstraZeneca is the sponsor of this study and has its headquarters at 1800 Concord Pike in Wilmington, Delaware.

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

Thank you!

Clinical study participants belong to a large community of people who take part in clinical research around the world. They help researchers answer important health questions and find medical treatments for participants.