

Clinical Study Results

1. Study Name

What does this summary cover?

This summary shows the main results from one clinical study. The results are only for this study. Other studies may find different results. Researchers and health authorities look at the results of many studies to decide which medicines work best and are safest for patients.

Title of the Study:	A Multicenter Single-arm Extension Study to Characterize the Long-term Safety of Cinacalcet Hydrochloride in the Treatment of Secondary Hyperparathyroidism in Pediatric Subjects with Chronic Kidney Disease on Dialysis
Brief Title:	How Does Long-term Cinacalcet Use Affect Children with Secondary Hyperparathyroidism Caused by Chronic Kidney Disease?
Protocol Number:	20140159
EU Trial Number	2014-003563-38
Other Identifiers	NCT02341417
Date of This Summary	04 June 2018

2. Who Sponsored This Study?

Amgen Inc.

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Amgen Inc. is the sponsor of the study and manufactured cinacalcet, the investigational medicine in this study. Amgen would like to thank everyone who participated in this study or allowed their child to participate, and feels it is important to share the results of this study.

Approved

3. General Information About the Clinical Trial

Where and when was the study done?

- This study took place in the United States, France, Belgium, Czech Republic, Poland, Greece, Ukraine, and the Russian Federation.
- The study began in June 2015 and ended in March 2017.
- The study was completed as planned.

Why was the study done?

Chronic kidney disease (also called “CKD”) is a serious health problem where the kidneys are diseased or damaged. The kidneys are not able to control the amount of water flowing through the body or filter waste out of the blood like they should. CKD will continue to get worse over time. Once the kidneys fail, treatment includes dialysis. Dialysis uses a machine to filter the blood like healthy kidneys would. About 2 million people around the world need dialysis.

Patient with CKD often have a problem called secondary hyperparathyroidism (also called “SHPT”). SHPT is caused by too much of a certain hormone (called parathyroid hormone, or “PTH”). PTH controls how much calcium is in the blood. Calcium is an important mineral our body needs for a healthy heart, bones, nervous system, and hormone control. PTH causes minerals, like calcium, to leave the bones and enter the blood. About 88% of dialysis patients will get SHPT.

Standard care for patients with SHPT may include vitamin D and medicines that remove extra salts and minerals from the blood if there are too many. Cinacalcet is a medicine that is approved by the health agencies in some countries to treat SHPT in adults and some children. Cinacalcet has not been tested or approved for all types of patients with SHPT. When used in studies like this one, it is called an “investigational medicine.”

This was a “phase 3 study,” which is the latest stage for testing investigational medicines in humans before a medicine is approved for use. This was called an “open-label extension” study. It was “open-label” because all of the participants and study doctors knew they were taking cinacalcet. It was an “extension” because it took place after another cinacalcet study with the same participants ended.

The main goal of this study was for researchers to learn how cinacalcet affects children and teenagers with SHPT who take it for a long period of time.

4. What Patients/People Were Included in This Study?

Who took part in the study?

This study included 28 children and teenagers with SHPT who previously took part in 1 of 2 other Amgen cinacalcet studies. 15 participants in this study took cinacalcet before in a previous study (called “Previous Cinacalcet” in this summary). The other 13 participants were not given cinacalcet in their previous study, only standard of care for SHPT (called “No Previous Cinacalcet” in this summary).

10 boys and 18 girls participated in this study. They were between the ages of 2 and 18 years old when they started the extension study. 11 participants were younger than 12 years old, and 17 participants were over the age of 12 years.

This study took place at 16 different study centers in Europe, Russia, and the United States:

Number of Participants from Each Country



Participants were examined by a study doctor and chosen to be in the study if they:

- previously completed 1 of the 2 other Amgen cinacalcet studies
- had normal calcium levels in the blood
- had the correct amount of fluids in their body, also known as “dry weight”
- did not have a history of certain heart problems that could be affected by calcium
- did not have new or worsening seizure disorders
- had normal liver function, based on blood tests
- were available to complete the study, and did not have a kidney transplant scheduled before the end of the study


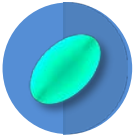
5. Which Medicines Were Studied?

What investigational medicines were studied?

All participants in this study took cinacalcet. Participants were treated daily with cinacalcet for 28 weeks. About 4 weeks after their treatment ended, participants visited their study doctors to see how they were doing after taking cinacalcet:



Cinacalcet was taken every day at about the same time. It could have been taken different ways based on the dose the study doctor wanted the participant to take, and if the participants could swallow whole pills (capsules or tablets):

5 mg Capsule: 	A rounded pill made of 2 halves (or shells) that can be pulled apart. The capsule is filled with cinacalcet powder. The 2 halves were opened and powder sprinkled onto soft food and eaten, or added to a sugary syrup and swallowed. The sugary syrup with the cinacalcet could be added to feeding tubes of participants who could not swallow food or water.
30 mg Tablet: 	A solid green pill covered in a waxy coating. The tablet could not be crushed or broken, and was swallowed whole.

6. What Were the Side Effects?

What is an adverse reaction (sometimes called side effects)?

A lot of research is needed to know whether a medicine causes a side effect. All medicines can cause side effects, or unwanted medical problems that may happen when you take a medicine. In a clinical study, the study doctors record side effects that they believe are possibly caused by the investigational medicine each patient is receiving. These are also called “adverse reactions” and can be considered “related” to the investigational medicine.

What side effects related to the treatment were seen?

A side effect was recorded as “serious” if it caused death, was life threatening, required the participant to stay in a hospital, or caused a birth defect. There were no treatment-related serious side effects reported in this study.

The table below shows how many participants had side effects that were considered related to cinacalcet.

Participants With Treatment-related Side Effects During the Study

	Previous Cinacalcet (15 participants)	No Previous Cinacalcet (13 participants)
How many participants had serious side effects?	0 participants	0 participants
How many participants had non-serious side effects?	4 participants (27%)	5 participants (38%)
How many participants died from side effects?	0 participants	0 participants
How many participants stopped taking the study medicine because of side effects?	0 participants	0 participants

The table below shows the non-serious side effects that occurred in at least 1 participant and were considered related to treatment. Some participants had more than 1 side effect.

Treatment-related Non-serious Side Effects During the Study

Non-Serious Side Effect	Previous Cinacalcet (15 participants)	No Previous Cinacalcet (13 participants)
Painful sores on the inside of the stomach	1 participant (7%)	0 participants
Low levels of calcium attached to proteins in the blood	1 participant (7%)	1 participant (8%)
Low levels of free calcium in the blood	2 participants (13%)	3 participants (23%)
Low levels of parathyroid hormone in blood	0 participants	1 participant (8%)
High calcium levels in the blood	1 participant (7%)	0 participants
Muscle cramps with pain	0 participants	1 participant (8%)
Muscle stiffness	0 participants	1 participant (8%)
Tingling or prickling “pins and needles” pain	0 participants	1 participant (8%)

This section only shows the most frequently reported side effects. Information about other side effects may be available at the websites listed at the end of this summary.

7. What Were the Overall Results of the Study?

A main goal of the study was to learn how cinacalcet affects children and teenagers with SHPT who took it for a long period of time.

Cinacalcet can help SHPT patients by lowering the level of PTH in the blood. Then, the lower PTH levels result in lower calcium levels. When calcium gets very low, some additional health problems can begin. These problems include weak and broken bones, sudden uncontrolled brain activity (seizures), or problems with the timing of heart beats.

To learn about the safety of using cinacalcet in children and teenagers for a long time, study doctors looked to see if any known possible risks were reported in this study.

Cinacalcet Risks Observed During the Study

Cinacalcet Risks	Previous Cinacalcet (15 participants)	No Previous Cinacalcet (13 participants)
Heart failure	0 participants	0 participants
Sudden uncontrolled brain activity (seizures)	0 participants	0 participants
Allergic reaction	2 participants (13%)	0 participants
Low levels of free calcium in the blood	2 participants (13%)	3 participants (23%)
Low blood pressure	0 participants	0 participants
Heart beat timing interruptions or heart beating too fast	0 participants	0 participants
Pancreas problems	0 participants	0 participants
Liver problems	1 participants (7%)	0 participants
Broken bones	0 participants	1 participant (8%)
Tumors or other cancer	0 participants	0 participants
Other nervous system problems (not including seizures)	1 participant (7%)	3 participant (23%)
Too little blood flow or oxygen reaching the heart	0 participants	0 participants
Mistakes taking or giving cinacalcet doses	0 participants	0 participants

Approved

This study was completed as planned. 23 of the 28 participants completed treatment. 3 participants no longer met the requirements to be in the study. 1 participant chose to stop. 1 participant passed away during the study due to pneumonia (infection of the lungs). Study doctors determined the pneumonia was not related to cinacalcet.

These are just some of the main results of the study. More results may be available at the websites listed at the end of this summary.

8. How Has This Study Helped Patients and Researchers?

What is important to know about these results?

These results are only for this clinical study, which looked at a sample of 28 children and teenagers with SHPT due to CKD. Not all participants in the study had the same results. The results for any individual participant could have been better or worse than the results for their group. These results are not an explanation of what a treatment can and cannot do for an individual. No single clinical study can give a complete picture of the benefits and risks of a medicine. Other studies may find different results.

This research may help patients and families in the future by helping doctors understand how cinacalcet works in children and teenagers over longer periods of treatment.

9. Are There Plans for Further Studies?

Will there be more studies with cinacalcet?

If more clinical studies are done, they may be listed on public websites, such as those below. Search for study medicine names “cinacalcet,” “Sensipar,” or “Mimpara” on these or other websites:

- www.clinicaltrials.gov
- www.clinicaltrialsregister.eu
- amgentrials.com

10. Where Can I Find More Information About This Study?

Where can I learn more?

Amgen has committed to make research results available to the public. This summary has been provided as part of that commitment and should not be used for any other purpose. It should not be considered to make a claim for any product or to guide treatment decisions.

Some information in this summary may be different from the approved labelling for cinacalcet. Your healthcare professional should refer to the full prescribing information for proper use of cinacalcet.

To find out more about this study, check these websites:

- www.clinicaltrials.gov. Use the study identifier NCT02341417
- www.clinicaltrialsregister.eu. Use the study identifier 2014-003563-38
- amgentrials.com. Use the study identifier 20140159

If you participated in the study and have questions about the study results, the doctor or staff at your study site may be able to answer them.