Clinical Results Summary

A clinical study to learn about the safety and effects of quizartinib in people with advanced solid tumors

Protocol number: AC220-004

Thank You!

Daiichi Sankyo, Inc., the sponsor of this study, would like to thank the participants who took part in this study for quizartinib, also known AC220. Each participant helped to advance medical research for people affected with advanced solid tumors. Their contribution to medicine and healthcare is greatly appreciated.

Important note: This summary only shows the results of a single study. Other studies may have different findings. Researchers and health authorities look at the results of many studies to understand which treatments work and how they work. It takes a lot of people in many studies around the world to advance medical science and healthcare.

Do not use the results of this study to make health decisions. Please talk to a doctor before changing any treatment you are taking or if you have any questions about these study results.
What was the main purpose of this study?

Advanced solid tumors

A solid tumor is a type of cancer that starts in an organ, muscle, or bone of the body. A tumor is considered to be “advanced” if it has spread to other parts of the body. Symptoms of advanced tumors can include pain, breathing problems, loss of appetite, weight loss, feeling very tired, depression, vomiting, and feeling sick to the stomach. The occurrence of these symptoms depends on where in the body the tumor first started growing and how much it has spread.

A group of proteins called a ‘kinases’ help tumor cells divide and grow. It is believed that by stopping these proteins from working, the growth of the tumor cells can be stopped. AC220, also known as quizartinib, is being tested for its ability to stop the growth of tumor cells by preventing these proteins from working.

Although many treatments are available for advanced solid tumors, some people either do not respond to treatment or their cancer comes back after being treated.

In this study, researchers wanted to learn more about the safety and effects of quizartinib in people with advanced solid tumors.

Treatment given in this study

The treatment given in this study was:

Quizartinib

An investigational drug being tested for the treatment of advanced solid tumours.
Main purpose of this study

The main question the researchers wanted to answer in this study was:

How many participants had side effects during the study?

Other purpose of this study

Researchers also wanted to answer the following question:

- How many participants had tumors that completely disappeared or became at least 30% smaller after treatment with quizartinib?

How long was this study?

The study was designed so that participants could continue in it as long as their tumor did not get worse and they did not have serious side effects. The study started in January 2010 and ended in November 2011. The study was completed as planned and a study report was created. This summary is based on that report.
Who was in this study?

This study included 13 participants from the United States of America. Participants could take part in this study if they:

- had an advanced solid tumor,
- were at least 18 years of age,
- were able to be out of bed for more than 50% of waking hours,
- had fully recovered from the side effects of their previous cancer therapy before starting study treatment,
- had no other treatment options for their disease.

What happened during this study?

This was a Phase 1 study. Phase 1 studies are done to find out how a new study treatment works in a small number of participants. This Phase 1 study helped researchers to find the highest dose of a drug that can be safely given to participants.

This was an open-label study, which means that both the researchers and the participants knew which treatment was given to which participant.

Participants were screened to find out if they could take part in the study.

Participants took quizartinib by mouth in a liquid form, once daily, on an empty stomach for 28 days (1 cycle). This cycle of treatment could be repeated for as long as participants benefited from the treatment without any serious side effects.

The researchers gave 135 milligrams (mg) of quizartinib to the first group of participants. However, 3 out of 5 participants who got the 135 mg dose experienced severe side effects called dose limiting toxicities (DLTs)*. Therefore, researchers gave a 90 mg dose of quizartinib to the next group of participants. At 90 mg, no new severe side effects were observed.

* DLTs are defined as severe side effects that study doctors checked in order to decide if they could increase the dose of quizartinib or not.

Researchers monitored participants’ heart rate and overall health at regular time intervals during the study.
What were the key results of this study?

Key results from this study are shown for the total group of participants as average results. This summary does not show the results from each individual participant. An individual participant’s results could be different from the total group of participants. A full list of the questions the researchers wanted to answer and a detailed presentation of the results can be found on the websites listed at the end of this summary.

The main question the researchers wanted to answer in this study was:
How many participants had side effects during the study?

Side effects are medical problems (such as a feeling tired) that happened during the study, which the study doctor (investigator) thought may or may not be related to the treatment in the study.

During the study, all 13 participants had side effects.

Side effects which the study doctor (investigator) thought may be related to the study treatment are presented in the section ‘What side effects did the study participants have during the study?’

What were the other results of this study?

How many participants had tumors that completely disappeared or became at least 30% smaller after treatment with quizartinib?

No participants had tumors that completely disappeared or became at least 30% smaller after treatment.

The cancer remained stable without changes in 46% (6 out of 13) of participants.

What side effects did the study participants have during the study?

Side effects are considered serious if they cause death, are life-threatening, cause disability, cause lasting problems, cause birth defects, or require hospitalization. Some participants stop study treatment because of side effects.

Side effects other than those related to the study treatment (quizartinib) are not reported here. For more information on medical problems, please visit the websites listed at the end of this summary.
What were the most common serious side effects?

During the study, 23% (3 out of 13)* participants had serious side effects.

<table>
<thead>
<tr>
<th>Quizartinib 90 mg Percentage (Number of participants)</th>
<th>Quizartinib 135 mg Percentage (Number of participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% Low blood platelet count</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>13% (1 out of 8) Fever in patients with low neutrophils</td>
<td>0%</td>
</tr>
<tr>
<td>0% Low count for all blood cells</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>13% (1 out of 8) Low leukocytes count</td>
<td>0%</td>
</tr>
<tr>
<td>0% Severe infection that spreads from the urinary tract throughout the body</td>
<td>20% (1 out of 5)</td>
</tr>
</tbody>
</table>

- Neutrophils are a type of white blood cells that fight bacteria.
- Platelets are a type of blood cells which help in preventing/stopping bleeding.
- Leukocytes are also a type of white blood cells that fight bacteria.

*Note that 1 participant in the quizartinib 90 mg group had 2 serious side effects and 1 participant in the quizartinib 135 mg group had 2 serious side effects.

There were no deaths due to the study treatment.
What were the most common non-serious side effects?
The most common non-serious side effects, which happened in at least 20% of participants in any treatment group, are presented below:

<table>
<thead>
<tr>
<th>Quizartinib 90 mg Percentage (Number of participants)</th>
<th>Quizartinib 135 mg Percentage (Number of participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% (2 out of 8) Changes in sense of taste</td>
<td>60% (3 out of 5)</td>
</tr>
<tr>
<td>13% (1 out of 8) Changes in electrical activity in heart</td>
<td>40% (2 out of 5)</td>
</tr>
<tr>
<td>0% Decreased appetite</td>
<td>40% (2 out of 5)</td>
</tr>
<tr>
<td>25% (2 out of 8) Low neutrophil(^a) count</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>0% Dizziness</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>50% (4 out of 8) Feeling tired</td>
<td>60% (3 out of 5)</td>
</tr>
<tr>
<td>0% Fever in patients with low neutrophil(^a)</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>13% (1 out of 8) Low blood platelet(^b) count</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>0% Low count for all blood cells</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>13% (1 out of 8) Low leukocyte(^c) count</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>25% (2 out of 8) Nausea</td>
<td>0%</td>
</tr>
<tr>
<td>0% Shortness of breath</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>0% Severe infection that spreads from the urinary tract throughout the body</td>
<td>20% (1 out of 5)</td>
</tr>
<tr>
<td>25% (2 out of 8) Swelling in lower legs and hands</td>
<td>0%</td>
</tr>
<tr>
<td>25% (2 out of 8) Vomiting</td>
<td>0%</td>
</tr>
</tbody>
</table>

\(^a\) Neutrophils are a type of white blood cells that fight bacteria.
\(^b\) Platelets are a type of blood cells which help in preventing/stopping bleeding.
\(^c\) Leukocytes are also a type of white blood cells that fight bacteria.
How many participants had to stop treatment because of side effects?

Two participants stopped treatment early due to side effects. One participant stopped treatment early due to changes in electrical activity in the heart. One participant stopped treatment early due to a low count of all blood cell types. Both participants were in the 135 mg quizartinib treatment group.

How was this study useful for patients and researchers?

This study helped researchers to learn about the safety and effects of quizartinib in people with advanced solid tumor.

Findings from this study may be used in other studies to learn whether patients with advanced solid tumor are helped by this treatment. Other studies for quizartinib are ongoing.

Please remember, this summary only shows the results of a single study. Other studies may have different findings. Please talk to a doctor before changing any treatment you are taking or if you have any questions about these study results.
Where can I learn more about this study?
You can find more information about this study on the following website


Please remember that the results on this website may be presented in a different way. If you were a study participant and have questions about the results of this study, please speak with the doctor or staff at your study site.

Full study title:
A Phase 1 Open-Label, Dose Finding, Safety and Tolerability Study of AC220 Administered Daily to Patients with Advanced Solid Tumors.

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