Clinical Trial Results

NOVARTIS

Research Sponsor:	Novartis
Drug Studied:	FTY720 / fingolimod
National Clinical Trial #:	NCT01623596
Protocol #:	CFTY720DUS09
Trial Date:	June 2012 to July 2015
Short Trial Title:	A trial to test if people stayed on treatment with fingolimod longer than other treatment for relapsing remitting multiple sclerosis

Thank you!

As a clinical trial participant, you belong to a large community of participants around the world. You helped researchers answer important health questions about medical treatments.

Thank you for taking part in the clinical trial for the drug fingolimod. You helped researchers learn more about how fingolimod works in people with relapsing-remitting multiple sclerosis (RRMS). This trial started in June 2012 and ended in July 2015.

Novartis, the sponsor of this trial, thanks you for your help and believes it is important for you to know the results of your trial. An independent non-profit organization called CISCRP and a medical writing organization called Synchrogenix prepared this summary of the trial results for you. 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, research nurse, or other team member at your trial site.

CISCRP
THE CENTER FOR INFORMATION & STUDY ON CLINICAL RESEARCH PARTICIPATION

What's happened since the trial ended?

Your trial started in June 2012 and ended in July 2015. You were in the trial for up to 1 year, but the entire trial lasted about 3 years. There were 875 participants at 117 trial centers in the United States. When the trial ended in July 2015, the sponsor reviewed the data and created a report of the results. This is a summary of that report.

Why was the research needed?

Researchers wanted to learn more about treatment for patients with RRMS. Earlier studies have shown that fingolimod and other multiple sclerosis disease-modifying treatments, sometimes called MS-DMTs, have helped patients with RRMS. MS-DMTs also include drugs such as interferons and glatiramer acetate.

Some MS-DMTs, such as fingolimod, are taken by mouth, while other MS-DMTs are taken by injection (shot) and are known as injectable MS-DMTs, or MS-iDMTs. Earlier trials have shown that many patients do not take their MS-iDMTs for as long as they are supposed to. Instead, they stop taking them before their doctor tells them to stop.

In this trial, researchers wanted to know which treatment participants would stay on longer over a 12-month period.

The main questions researchers asked in the trial were as follows:

- Which treatment did participants stay on longer over 12 months?
- What medical problems did participants have?

To answer these questions, researchers asked men and women like you to volunteer for this trial. All the participants had RRMS and were between 18 and 65 years old. Like you, either everyone was treated with only one type of MS-iDMT or was never treated with an MS-iDMT before this trial. During the trial, participants could not use any other treatment for RRMS and women could not be pregnant.

What kind of trial was this?

This was an "open-label trial." This means that the participant and the trial staff knew which treatment each participant took. You were randomly assigned to take either fingolimod or an MS-iDMT during the treatment period. Half of the participants took fingolimod and half took an MS-iDMT.

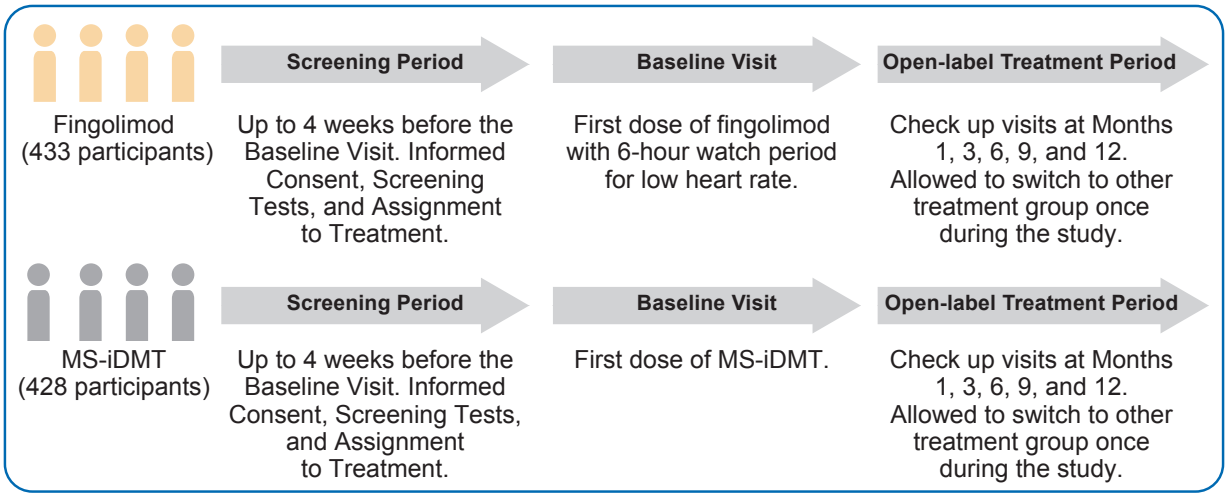
What happened during the trial?

There were 2 groups in this trial:

1. **Fingolimod** – 433 participants took 0.5 milligram (mg) of fingolimod by mouth every day for 12 months.
2. **MS-iDMT** – 428 participants took one of the MS-iDMTs. The trial doctors decided which MS-iDMT to give each participant based on the best MS-iDMT available and what kind of MS-iDMT the participant may have taken in the past. Participants were asked to take the assigned MS-iDMT as prescribed by the trial doctor for 12 months. The chart below shows both groups.

Participants were allowed to switch from one group to the other once during the study. Participants could switch before the 3-month visit if they felt that the treatment was not working or if they were having any problems with the treatment. If participants decided to switch after the 3-month visit, they could do so for any reason.

Two Groups in This Trial



During the **Screening Period**, you gave consent to participate in the trial. You had blood tests, a checkup, and answered questions about your MS and any other health problems. You had a magnetic resonance imaging (MRI) test of your brain. You had your eyes checked, and you had your heart checked with an electrocardiogram (ECG).

At the **Baseline Visit,** you had a checkup and filled out questionnaires about how you were managing physically, how your work and daily living activities were affected by your MS, your quality of life, and how satisfied you were with your current medicine. You were given a test called a cognitive test to check how well you were thinking, reasoning, understanding, learning, and remembering things. You were given the first dose of trial medicine. If you took fingolimod, you were watched and had your heart rate and blood pressure checked every hour for 6 hours after taking the medicine. You had an ECG before and after taking it. You were then given your trial medicine and instructions on how to take it at home.

During the **Treatment Period,** you went to office visits at 1, 3, 6, 9, and 12 months after the Baseline Visit. At each of these visits, you filled out questionnaires and had a checkup, had vital signs checked, and had blood tests. At the 3-month visit, you also had your eyes checked. At the 6- and 12 month visits, you had another MRI, and a cognitive test.

What were the results of the trial?

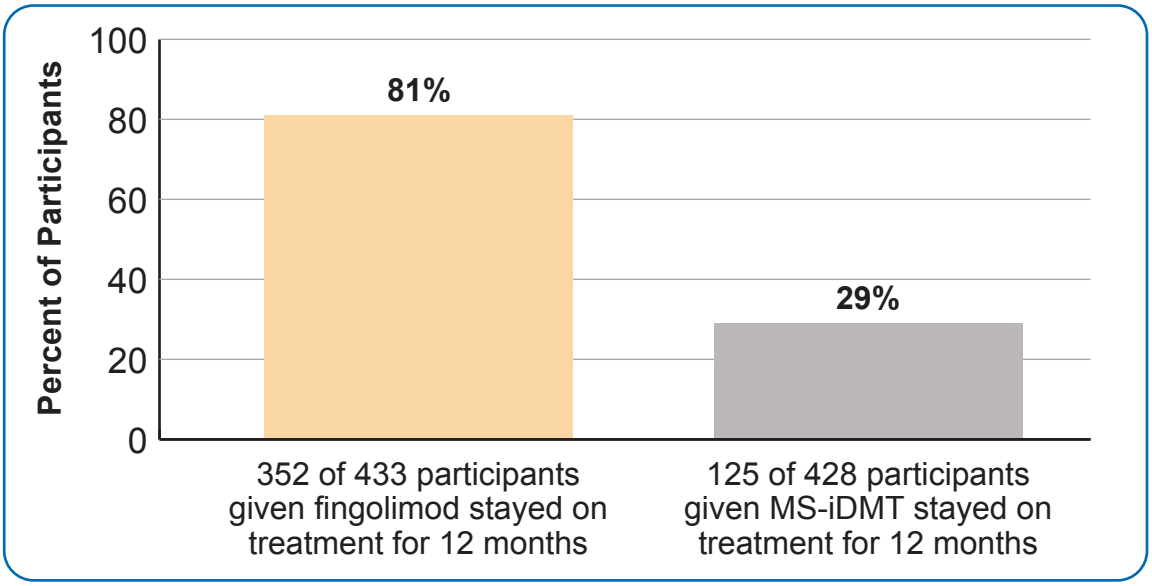
This is a summary of the overall findings from your trial and may not be the same for each participant. Researchers look at results of many studies to decide which treatments work best and are safest for patients. Other studies may provide new information or different results. You should not make changes to your treatment based on the results of a single trial without first talking to your doctor.

Which treatment did participants stay on longer over 12 months?

More participants in the fingolimod group than in the MS-iDMT group stayed on treatment for 12 months. In the fingolimod group, 352 of 433 participants (81%) stayed on treatment for 12 months. In the MS-iDMT group, 125 of 428 participants (29%) stayed on treatment for 12 months.

These results are shown in the chart below.

Percent of Participants Who Stayed on Treatment for 12 Months



What medical problems did participants have?

A lot of research is needed to know whether treatment causes a medical problem. So when new treatments are being studied, researchers keep track of all medical problems that patients have. These medical problems are called “adverse events.” An adverse event is any sign or symptom that may or may not be caused by the trial drug.

How many participants had adverse events in the trial?

Researchers looked at adverse events by patient-year or by how many adverse events occurred for every year participants took each trial drug. In order to look at the adverse event rates in the trial (called AE rates), researchers divided the number of adverse events the participants had by the total number of years all participants were exposed to the trial drugs (called patient-years). This gave researchers AE rates that were compared between the fingolimod and MS-iDMT groups.

More than half the participants in the trial who took at least 1 dose of trial drug and had at least 1 check up after starting the trial drug had adverse events. Researchers found that those participants who received MS-iDMTs had a higher rate of adverse events than participants who took fingolimod. Participants who took fingolimod had about 4 AEs for every year they took fingolimod, while participants who took MS-iDMTs had 7 AEs for every year they took those drugs. Most adverse events were not serious, and trial doctors believed that they were related to the known side effects of shots such as pain or redness where the shot was given.

Adverse event rates per patient-year in the trial	Fingolimod 433 participants	MS-iDMT 428 participants
What was the adverse event rate during the trial?	4.0 per patient-year	7.0 per patient-year
What was the rate of participants who stopped treatment because of adverse events?	0.1 per patient-year	0.5 per patient-year
How many had an adverse event related to treatment?	180 participants (42%)	242 participants (57%)

Did any participants have serious adverse events?

An adverse event is considered serious when it is life-threatening, causes lasting problems, or the patient needs hospital care.

In this trial, participants had less than 1 serious adverse event per patient-year for both the fingolimod group and the MS-iDMT group. The most common serious adverse event for participants taking fingolimod was infections, while the most common serious adverse event in participants taking MS-iDMTs was MS relapse.

What were the most common adverse events?

The table below shows the AE rates for the most common adverse events that happened in at least 10% of participants in this trial.

AE rates per patient-year for the most common adverse events in the trial	Fingolimod 433 participants	MS-iDMT 428 participants
Lymphopenia (low white blood cell count)	0.087	0.01
Headache	0.12	0.22
Fatigue (tiredness)	0.15	0.17
Influenza (flu-like) illness	0.03	0.36
Nasopharyngitis (inflamed nose and throat)	0.12	0.11
Injection site pain (pain where treatment shot was given)	0.00	0.36
Injection site reaction (reaction where treatment shot was given)	0.00	0.26
Injection site erythema (redness where treatment shot was given)	0.00	0.23

Where can I learn more about this trial?

A scientific summary of the results is available on the Novartis Clinical Trial Results website (www.novartisclinicaltrials.com). After agreeing to enter the Novartis website, type "**CFTY720DUS09"** into the keyword search box and click **"Go"**. If you have questions about the results, please speak with the doctor or staff at your trial site.

Official Trial Title: A 12-month, Prospective, Randomized, Active-Controlled, Open-Label study to Evaluate the Patient Retention of Fingolimod vs. Approved First-Line Disease Modifying Therapies in Adults With Relapsing Remitting Multiple Sclerosis (PREFERMS)

Novartis, the sponsor of this trial, has its headquarters at Basel, Switzerland. The phone number for general information is 1 (888) 669-6682.

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.

CISCRP
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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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