Clinical Trial Results

NOVARTIS

Research Sponsor:	Novartis
Location of Headquarters:	Basel, Switzerland
Drug Studied:	Bimagrumab (BYM338)
Protocol #:	CBYM338X2205E1
Full Trial Title:	An open-label, long-term study to evaluate the safety and tolerability of BYM338 in patients with sporadic inclusion body myositis
Full Scientific Summary:	www.novctrd.com
Trial Date:	March 2014 to August 2016

Thank you!

Thank you for taking part in the clinical trial for the trial drug bimagrumab, also called BYM338. You and all the other patients helped researchers learn more about whether bimagrumab helps people with sporadic inclusion body myositis, also called sIBM.

Novartis sponsored this trial and thinks it is important to share the results of the trial with you and the public. An independent non-profit organization called CISCRP 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 participated in the trial and have questions about the results, please speak with the doctor or staff at your trial site.

What has happened since the trial ended?

Your trial included 10 patients at 2 trial sites in the United States and lasted for up to 2 years. It ended early because the results from another larger and longer trial with bimagrumab in patients with sIBM showed it did not help patients as much as researchers had expected.

After your trial was stopped, the sponsor reviewed the data collected from you and the other 9 patients and created a report of the results. This is a summary of that report.

Why was the research needed?

Before a drug can be approved for patients to take, researchers do clinical trials to find out how well it works and how safe it is. In this trial, researchers were looking for a way to treat sIBM. This disease causes muscle loss and weakness, especially in the arms and the thighs. sIBM is a disease that gets worse over time. People with this muscle disease may end up losing their ability to stand up from a chair, walk without walking aids, and pick up things with their hands.

Doctors currently do not have a treatment for sIBM. In this trial, researchers wanted to learn if bimagrumab can increase the strength of the muscle and the muscle mass, which is the amount of muscle in the body. In doing so, researchers also wanted to know if bimagrumab could help people with sIBM walk farther, move around easier, and function better in their activities of daily life.

Bimagrumab is a type of drug called an antibody. Antibodies are normally made by the body's immune system to fight off infection. Researchers are now able to use antibodies as medications to treat a variety of medical conditions. Bimagrumab blocks the release of a protein found on muscle cells, which is involved in muscle growth. When this protein is not released, muscle cells are able to grow larger. The main questions researchers wanted to answer in this trial were:

- What medical problems did patients have during the trial?
- How did bimagrumab affect patients' muscles?
- How much bimagrumab got into the blood?

To answer these questions in this trial, researchers asked for the help of men and women with sIBM. The patients in this trial were 50 to 81 years old. All patients had completed another trial with bimagrumab before starting this trial. On average, there were about 2 years between when patients finished the first trial and when they started this trial.

What kind of trial was this?

This trial was an "open label" trial. This means that the patients, trial doctors, trial staff, and sponsor staff knew what treatment the patients were getting. All of the patients in this trial got bimagrumab.

What happened during the trial?

Before the trial started, the trial doctors examined you carefully to make sure that you could take part in the trial. This was called the “screening visit”. During this visit, the doctors did the following:

- Checked your heart health
- Took blood and urine samples
- Checked your height, weight, temperature, blood pressure, and heart rate
- Asked about any medicines you were taking
- Measured your muscle mass
- Tested your muscle strength and walking ability

The trial doctors then checked you and the other patients again 5 days before you got the first dose of bimagrumab. This was called the “baseline visit”.

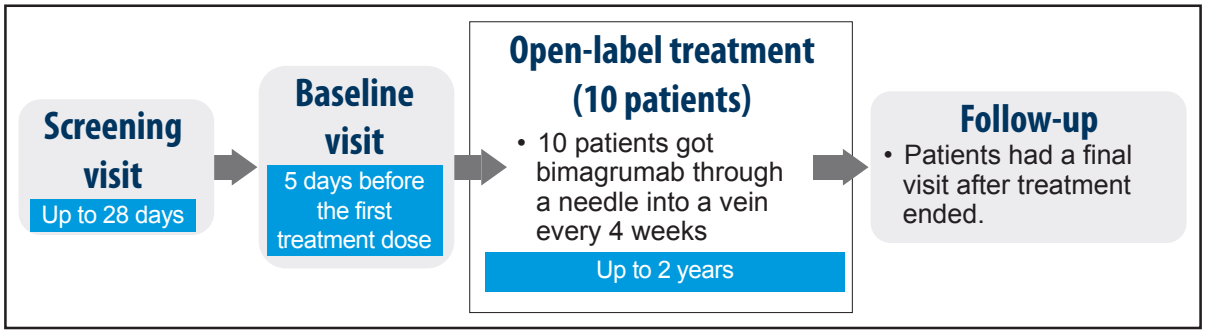
During the trial, you got your trial treatment every 4 weeks at the trial site.

- You got bimagrumab through an IV line, which means through a needle put into a vein.
- You and all the other patients got the same dose of 10 “mg/kg” of bimagrumab, which means 10 milligrams of bimagrumab for each kilogram of your body weight.
- Trial doctors measured your muscle mass.
- Trial doctors also tested your muscle strength and walking ability.

The trial doctors also examined you, asked how you felt, and asked about any medical problems that you had recently. At some visits, you had your heart checked, and trial doctors also collected blood and urine samples from you.

At the end of the trial, you and the other patients went to the trial site for a final visit. The trial doctors asked you how you felt and if you had any medical problems recently. They also examined you, checked your heart, and collected blood and urine samples.

The chart below shows how the trial was done.



What were the results of the trial?

This is a summary of the overall results of your trial, not your individual results. The results presented here are only for your trial. Researchers usually look at the results of many trials to decide which doses of the drug work best and are safest for patients. You should not make changes to your medications or treatment plan based on the results of a single trial without first talking to your doctor.

What medical problems did patients have?

Medical problems that happen in clinical trials are called “adverse events”. An adverse event is any unwanted sign or symptom that patients have during a trial. An adverse event is considered “serious” when it is life threatening, causes lasting problems, or the patients need hospital care. These problems may or may not be caused by the trial drug. A lot of research is needed to know whether a drug causes a medical problem. During a trial, all medical problems are reported and written down, whether or not they are caused by the trial drug. So when new drugs are being studied, researchers keep track of all medical problems that patients have.

This section is a summary of the adverse events that happened during this trial.

How many patients had adverse events?

All 10 patients reported at least 1 adverse event during the trial. The table below shows how many patients had adverse events, serious adverse events, and how many left the trial due to adverse events.

Adverse events in this trial

	Bimagrumab 10 mg/kg (out of 10 patients)
How many patients had adverse events?	100.0% (10)
How many patients had serious adverse events?	20.0% (2)
How many patients left the trial because of adverse events?	30.0% (3)

What were the most common serious adverse events?

There were 9 serious adverse events. These happened in two different patients. But, not all the serious adverse events were reported by each patient. The following list is all of the serious adverse events that happened.

- Fast heart rate
- Bleeding hemorrhoids
- Bleeding in the stomach and intestines.
- Low levels of iron in the blood
- Low red blood cell count
- Heart attack
- Dehydration
- Cancer in the lungs
- Cancer in the esophagus. The esophagus is a muscular tube that carries food from your mouth to the stomach

Researchers thought just 1 of these serious adverse events, the low level of iron and red blood cells in the blood, was related to the trial drug. They thought the other 8 serious adverse events were not related to the trial drug.

What were the most common adverse events?

The most common adverse events were falls and muscle spasms. A total of 9 out of 10 (90%) patients experienced both of these adverse events. The table below shows the most common adverse events that happened in at least 5 out of 10 (50%) patients in the trial. Other adverse events happened in fewer patients.

Most common adverse events in this trial

Adverse event	Bimagrumab 10 mg/kg (out of 10 patients)
Falls	90.0% (9)
Muscle spasms	90.0% (9)
Diarrhea	60.0% (6)
Acne	50.0% (5)
Scrapes and cuts on the skin	50.0% (5)

For more information about the adverse events in this trial, please see the scientific summary that can be found on the website listed at the end of this summary.

How did bimagrumab affect patients' muscles?

To learn how bimagrumab affected patients' muscle mass, the trial doctors measured the following:

- **Muscle mass of the thigh** using "magnetic resonance imaging" or MRI
- **Lean body mass,** which is the amount of body mass that is not fat or bone
- **Muscle strength** of the thigh and hand muscles
- **Physical function,** including how far patients could walk in 6 minutes
- **Physical ability** using survey questions

Overall, researchers found the following:

- The patients' thigh muscle size increased after both 8 weeks and 16 weeks of treatment.
- The patients' lean body mass was increased after 24 weeks of treatment, but not after 52 weeks of treatment.
- The patients did not show increased thigh or hand strength compared to when they first started the trial.
- The patients on average could not walk farther in 6 minutes compared to when they first started the trial.
- The patients' responses to a survey about their physical ability to do daily activities remained the same during the trial.

How much bimagrumab got into the blood?

The researchers used blood collected during the trial to measure how much bimagrumab got into the blood after each treatment. Researchers learned that patients had about as much bimagrumab in their blood circulation as expected.

How has this trial helped patients and researchers?

Researchers look at the results of many trials to decide whether a drug works, and which dose provides the largest benefit and is safest for patients. This summary shows the main results from this 1 small trial. Overall, this trial did not show that bimagrumab helped with muscle strength, walking distance, or physical ability.

Similar results were also seen in a larger clinical trial with bimagrumab. So, bimagrumab will not be further tested for the treatment of sIBM. But we thank the participants for their help in testing bimagrumab.

Where can I learn more about this trial?

More information about the results and the full list of adverse events that happened in this trial can be found in the scientific summary of the results available on the Novartis Clinical Trial Results website (www.novctrd.com). Once on the site, click **"Clinical trial results"** at the bottom of the page. After agreeing to enter the Novartis website, type **CBYM338X2205E1** into the keyword search box and click **"Search"**. For more information about the larger clinical trial that showed similar results, type **CBYM338B2203** into the keyword search box and click **"Search"**.

If you have questions about the results, please speak with the trial doctor or staff at your trial site. This trial was registered on the following website:

- Clinical Trials.gov (https://clinicaltrials.gov/) - National Clinical Trial # NCT02250443

The larger clinical trial in patients with sIBM was registered on the following website:

- Clinical Trials.gov (https://clinicaltrials.gov/) - National Clinical Trial # NCT01925209

Thank you

As a clinical trial patient, you belong to a large community of patients around the world. You helped researchers answer important health questions and test new medical treatments.

CISCRP
THE CENTER FOR INFORMATION & STUDY ON CLINICAL RESEARCH PARTICIPATION

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 patients for clinical trials, nor is it involved in conducting clinical trials.

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