



# CLINICAL TRIAL RESULTS

**Sponsor:** Pfizer, Inc.

**Medicine(s) Studied:** Bococizumab

**Protocol Number:** B1481046

**Dates of Trial:** 09 June 2015 to 03 February 2016

**Title of this Trial:** A Randomized Clinical Trial of and Actual Use Study of Bococizumab (PF-04950615; RN316) and an Autoinjector (Pre-Filled Pen) in Patients with High Cholesterol (SPIRE-AI)

[A 12 Week, Phase 3, Double-Blind, Randomized, Placebo-Controlled, Parallel Group Study to Assess the Efficacy, Safety, Tolerability and Actual Use of Bococizumab and an Autoinjector (Pre-Filled Pen) in Subjects with Primary Hyperlipidemia or Mixed Dyslipidemia]

**Date of this Report:** 01 June 2017

**– Thank You –**

Pfizer, the Sponsor, would like to thank you for your participation in this clinical trial and provide you a summary of results representing everyone who participated. If you have any questions about the study or its results please contact the doctor or staff at your study site. This summary of results represents a single trial only.

## WHY WAS THIS STUDY DONE?

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Heart disease is a leading cause of death in both men and women. One of the biggest risks for getting heart disease is having high “bad” cholesterol (called LDL, or low-density lipoprotein cholesterol). Having high LDL cholesterol can lead to heart disease.

Doctors prescribe medicines called “statins” to patients with high LDL cholesterol to lower the LDL cholesterol in the blood. For some people, statins may not lower cholesterol enough.

Researchers did this study to look for a new way to treat patients who are taking a statin and who still have LDL cholesterol above what their doctors consider ideal. Bococizumab was the medicine tested in this study. It is not a statin. Bococizumab is a medicine that is given as an injection under the skin (subcutaneous) which may help to lower LDL cholesterol.

In most studies with bococizumab, patients had to use a pre-filled syringe to inject the medicine. The Sponsor developed a more automated way of giving an injection using a device called a pre-filled pen (autoinjector). For this study, researchers wanted to test the pre-filled pen as a new way to give this medicine.

For this study, researchers wanted to know:

- Does bococizumab help to lower LDL cholesterol in patients who are taking a statin and who still have LDL cholesterol above ideal levels?
- How well can patients (or a helper) use a pre-filled pen to inject bococizumab?

## WHAT HAPPENED DURING THE STUDY?

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This study was done to see if patients taking bococizumab had lower levels of LDL cholesterol compared to patients taking a placebo. A placebo does not

have any medicine in it, but looks just like the medicine. All groups used the pre-filled pen to give the medicine. This was done to find out how well the patients (or a helper) could use the pre-filled pen.

This study included adult men and women who:

- Had high cholesterol because of:
  - A genetic (passed down from birth) reason (called “primary hyperlipidemia”),
  - A genetic reason and/or because of lifestyle factors, like the foods you eat or how much you exercise (called “mixed dyslipidemia”)
- Were taking a statin medication but still had high levels of cholesterol

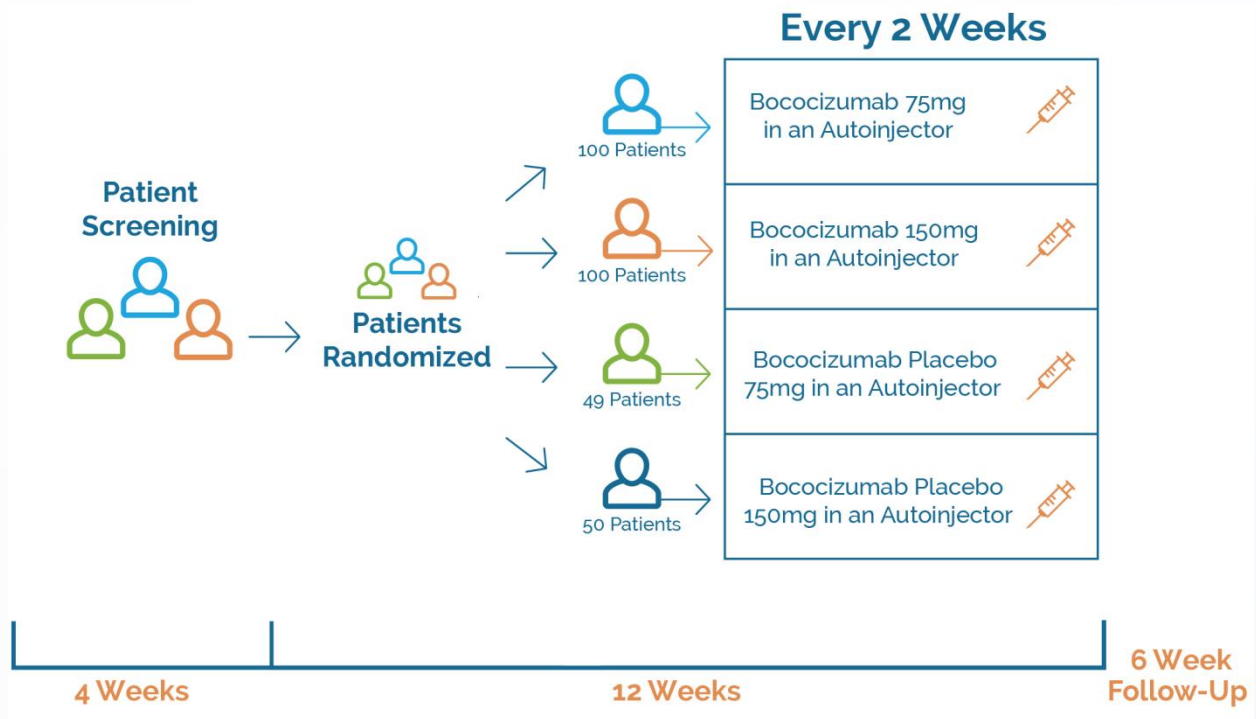
Patients were put into 1 of 4 groups by chance with twice as many patients being given the medicine than the placebo. This is known as a “randomized” study. This is done to make the groups more similar for things like age, and the number of men and women. Making the groups similar makes comparing the groups more fair.

The patients and researchers did not know who received which medicine during the study. This is known as a “double-blinded” study. Researchers use “double-blinded” studies to make sure that the results of the study are not influenced in any way.

Descriptions of Medicines Given in Each Group		
Group	Medicines Given	Why the Group Was Used in this Study
1	Bococizumab 75 mg in a pre-filled pen	To see if the 75 mg dose of bococizumab lowered LDL cholesterol, and to test how well patients could use the pre-filled pen
2	Bococizumab 150 mg in a pre-filled pen	To see if the 150 mg dose of bococizumab lowered LDL cholesterol, and to test how well patients could use the pre-filled pen.

3	Bococizumab 75 mg placebo in a pre-filled pen	To see if bococizumab 75 mg worked better than no medicine at all.
4	Bococizumab 150 mg placebo in a pre-filled pen	To see if bococizumab 150 mg worked better than no medicine at all.

For 4 weeks, patients were checked (screened) to make sure they met all the requirements of the study. Next, patients were put into 1 of 4 groups and were treated for 12 weeks. After completing the 12 weeks of treatment, patients were followed by researchers for 6 weeks (follow-up phase) to see how they did after taking the study medicines.



While patients were only in the study for 5 months, the entire study took 8 months to complete because it took about 3 months for all the patients to enter the study. The study took place at 28 clinical sites in the United States. It began on 09 June 2015 and ended on 03 February 2016. 299 patients were

treated in this study. 162 were men and 137 were women. All patients were between the ages of 19 and 84 years old.

Patients were supposed to be treated for 12 weeks and then followed for about 6 more weeks. Of the 299 patients who started the study, 289 patients finished the study. 10 patients decided not to finish the study or a study doctor decided it was best for the patient to stop the study.

When the study ended in February 2016, the Sponsor began reviewing the information collected. The Sponsor then created a report of the results. This is a summary of that report.

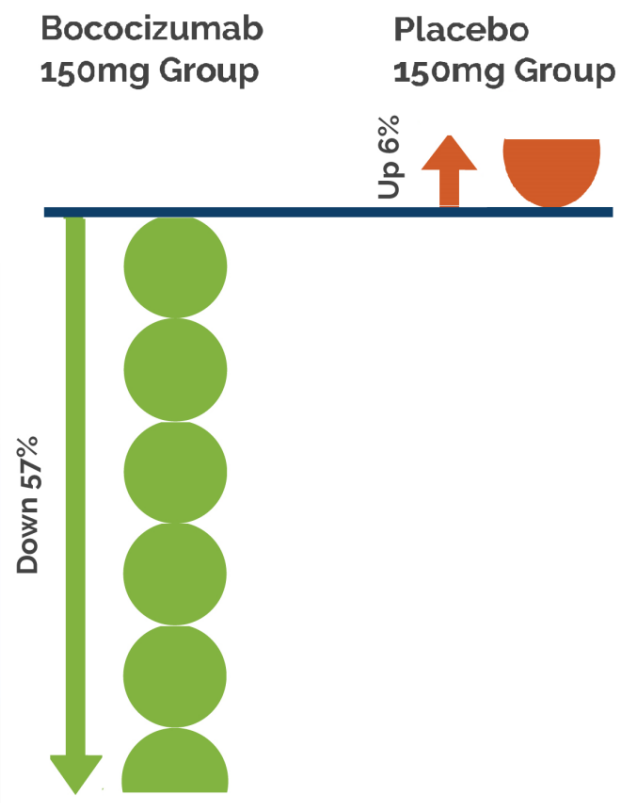
## WHAT WERE THE RESULTS OF THE STUDY?

### Did bococizumab help to lower LDL cholesterol in patients who are taking a statin and who have LDL cholesterol above ideal levels?

Yes, bococizumab worked better than placebo to further lower LDL cholesterol.

Researchers looked at the average change in all patients' LDL cholesterol from the start of the study compared to all patients' average LDL cholesterol after 12 weeks of taking the study medicines.

On average, patients who took bococizumab 150 mg had their LDL cholesterol drop by about 57% from their starting value. The patients taking bococizumab



150 mg placebo had their LDL cholesterol go up about 6% from their starting value. Based on these results and the number of patients, the researchers have concluded that the results are not likely the result of chance.

## **How well can patients (or a helper) use the pre-filled pen?**

Patients who took bococizumab 150 mg used the pre-filled pen the right way at least 93% of the time (93 of every 100 times) on each occasion they were meant to inject (from Weeks 0 to 10) during the study. They were successful 98% of the time (98 of every 100 times) for the last injection at Week 10.

This does not mean that everyone in this study had these results, and individual results could be better or worse than the overall group. Other studies may find different results. These are just some of the main findings of the study.

## **WHAT MEDICAL PROBLEMS DID PATIENTS HAVE DURING THE STUDY?**

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The researchers recorded any medical problems the patients had during the study. Patients could have had medical problems for reasons not related to the study (for example, caused by an underlying disease or by chance). Or, medical problems could have been caused by a study treatment, or by another drug the patient was taking. Sometimes the cause of a medical problem is unknown. By comparing medical problems across many treatment groups in many studies, doctors try to understand what the side effects of an experimental drug might be.

1 patient left the study due to medical problems. 21 out of 299 patients in this study had at least 1 non-serious medical problem. The most common are listed below.

## Most Common Non-Serious Medical Problems (Reported by More Than 5% of Patients)

Medical Problem	Bococizumab 75 mg (100 Patients Treated)	Bococizumab 150 mg (100 Patients Treated)	Placebo 75 mg (49 Patients Treated)	Placebo 150 mg (50 Patients Treated)
Nose and throat infection	2 (2%)	3 (3%)	2 (4%)	3 (6%)
Diarrhea	2 (2%)	1 (1%)	1 (2%)	3 (6%)
Common cold	1 (1%)	2 (2%)	3 (6%)	0 (0%)

## WERE THERE ANY SERIOUS MEDICAL PROBLEMS?

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A medical problem is considered “serious” when it is life-threatening, causes lasting problems, or needs hospital care.

7 patients (2%, or 2 out of 100 patients) had serious medical problems. No patients died during the study. 4 patients in the bococizumab groups, and 3 patients in the placebo groups had a serious medical problem. All serious medical problems were considered by the doctors and Sponsor as not due to study medicines.

## WHERE CAN I LEARN MORE ABOUT THIS STUDY?

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If you have questions about the results of your study, please speak with the doctor or staff at your study site.

For more details on this study protocol, please visit online at [www.clinicaltrials.gov](http://www.clinicaltrials.gov) (use the study identifier NCT02458287).

Please remember that researchers look at the results of many studies to find out which medicines work best and are safest for patients. No further clinical trials with bococizumab are planned at this time.

Again, **thank you** for volunteering.

We do research to try to find the best ways to help patients, and you helped us to do that!