Clinical Study Results

This summary reports the results of only one study. Researchers must look at the results of many types of studies to understand if a study medication works, how it works, and if it is safe to prescribe to patients. The results of this study might be different than the results of other studies that the researchers review.

Sponsor: Pfizer Inc.

Medicine Studied: Fidanacogene elaparvovec

Protocol Number: C0371002

Dates of Study: 29 July 2019 to 16 November 2022
The study is ongoing but no longer recruiting

Title of this Study: A gene therapy study to learn about the effects and safety of fidanacogene elaparvovec in men with hemophilia B

[Phase 3, open label, single arm study to evaluate efficacy and safety of FIX gene transfer with PF-06838435 (rAAV-Spark100-hFIX-Padua) in adult male participants with moderately severe to severe hemophilia B (FIX:C ≤2%) (BeneGene-2)]

Date(s) of this Report: 06 November 2023

– Thank You –

If you participated in this study, Pfizer, the Sponsor, would like to thank you for your participation.

This summary will describe the study results. If you have any questions about the study or the results, please contact the doctor or staff at your study site.

Why was this study done?

What is hemophilia B?

Hemophilia B is a bleeding disease that happens due to lack of a protein which helps in blood clotting. This protein is called coagulation Factor IX (9) or FIX. People with hemophilia B have more bleeding events than people who do not have the disease. This is because it is difficult to form a blood clot to stop bleeding. A bleeding event is when unexpected or uncontrolled bleeding happens. Bleeding might also happen inside the body which can affect different body parts, such as joints or muscles. Bleeding events can happen repeatedly. These repeated bleeding events may even cause death. It is an inherited disease that mainly affects boys and men.

Currently, treatment for hemophilia B includes replacement of FIX to try to prevent bleeding events. It is given when needed, or at regular scheduled intervals as preventive treatment.

What is fidanacogene elaparvovec?

Fidanacogene elaparvovec is pronounced as ‘fai-DAH-nah-koh-jeen’ ‘eh-lah-PAHR-voh-vec’.

Fidanacogene elaparvovec is a treatment called “gene therapy”. Gene therapy works by using a tool called a “vector”. A vector delivers the genetic material to specific parts of the body, such as liver. Once the genetic material reaches the body part, it works to produce the required protein.

The vector used in this study medication is an adeno-associated virus (AAV). The vector does not cause disease. It is used only to deliver the human FIX gene to the liver cells so they can produce FIX.

Fidanacogene elaparvovec is given as a drip directly and slowly into a person's "vein" by a needle. Veins are small system of tubes throughout the body that carries blood. The study medication is designed to be given only once. This may help to reduce multiple treatment sessions for people with hemophilia B.

What was the purpose of this study?

- The researchers wanted to learn if the treatment with fidanacogene elaparvovec was not less effective than the current routine FIX replacement therapy to manage the bleeding events in people with hemophilia B.
- They also wanted to learn about the safety of fidanacogene elaparvovec.

Researchers wanted to know:

Did the number of bleeding events change in participants following the treatment with fidanacogene elaparvovec?

What happened during the study?

How was the study done?

Researchers tested fidanacogene elaparvovec on all the study participants to find out how many bleeding events happened yearly after taking fidanacogene elaparvovec.

Researchers then compared the number of bleeding events the study participants had while taking fidanacogene elaparvovec with the number of bleeding events that happened when they took their routine FIX replacement therapy during the previous study.

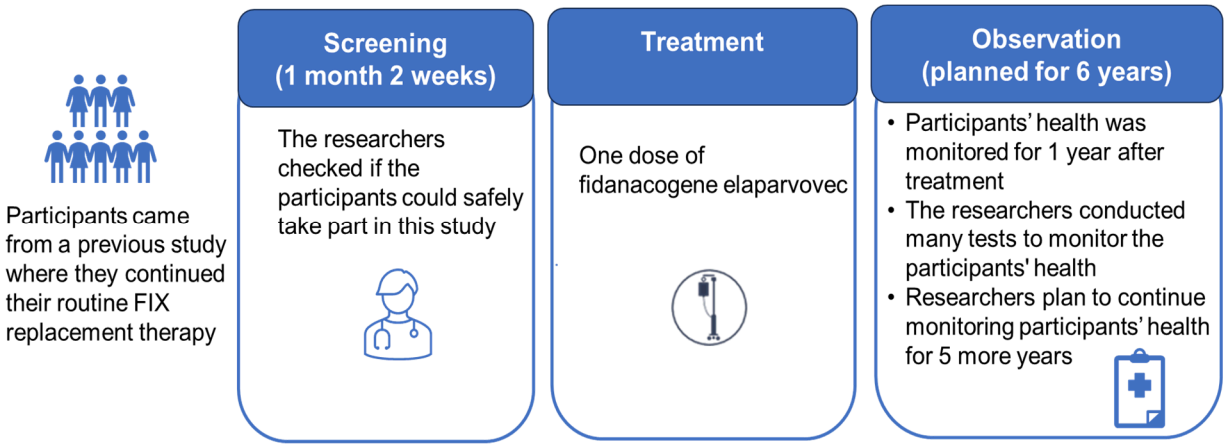
This was an “open-label” study, in which both the healthcare provider and the participant knew the treatment being given.

The participants were on their routine FIX replacement therapy before they took part in this study. Once enrolled in this study, they received one dose of fidanacogene elaparvovec.

Over the next year, the researchers conducted many tests to monitor the participants' health. The researchers plan to continue monitoring participants’ health for 5 more years (Figure 1).

In this study, the researchers collected the data for the number of bleeding events, for a little over 1 year (15 months) after giving the study medication to the participants.

Figure 1: What happened during the study



Where did this study take place?

The Sponsor ran this study at 28 locations in 13 countries in Australia, Asia, Europe, Middle East, North America, and South America.

When did this study take place?

It began on 29 July 2019. The data for this report was collected 15 months after treatment, till 16 November 2022. The study is still ongoing with participant in the study to monitor their health.

Who participated in this study?

The study included participants who had moderately severe or severe hemophilia B. They had completed at least 6 months of routine FIX replacement therapy during the previous study. The participants agreed not to use preventive treatment after getting study medication.

- A total of 45 adult men participated till the time of this report.
- All participants were between the ages of 18 years and 62 years.

Participants were to be treated only once with the study medication. Results of the 45 participants who were treated with the study medication are presented in this report.

No participants left the study till the time of data collection at 15 months after treatment, by their choice, or because a doctor decided it was best for a participant to stop being in the study.

How long did the study last?

When the 15-month period after treatment ended in November 2022, the Sponsor began reviewing the information collected. The Sponsor then created a report of the results. This is a summary of that report. The study is still ongoing.

What were the results of the study?

Did the number of bleeding events change in participants following the treatment with fidanacogene elaparvovec?

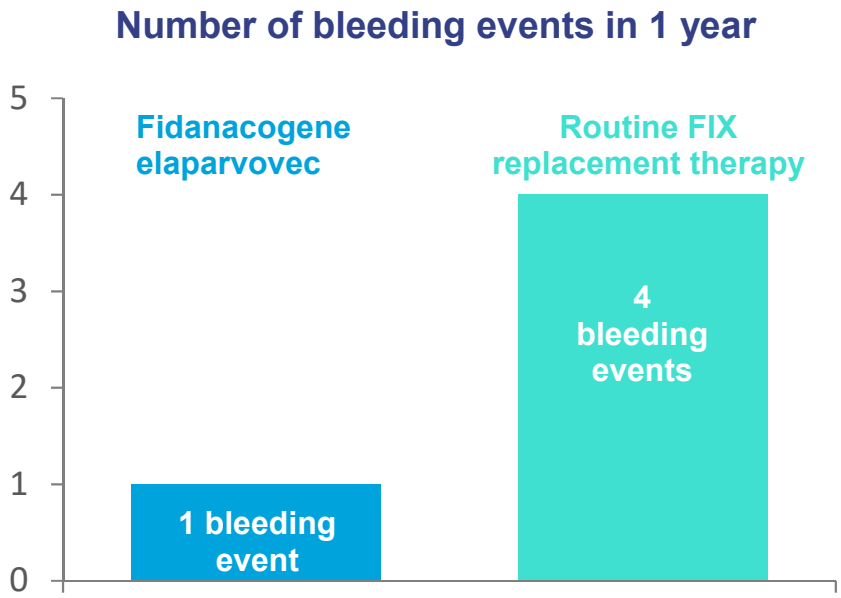
To answer this question, the researchers counted the number of bleeding events that participants had from Month 3 until Month 15 after receiving fidanacogene elaparvovec. They compared this to the number of bleeding events that happened when the participants were receiving routine FIX replacement therapy in a previous study.

How many bleeding events did the participants have in a year after receiving fidanacogene elaparvovec treatment compared to routine FIX replacement therapy?

On average, participants who received fidanacogene elaparvovec had 1 bleeding event in a year. When taking only routine FIX replacement therapy previously, they had 4 bleeding events in a year (Figure 2).

The researchers also observed that 29 out of 45 [64%] participants had no bleeding events from Month 3 to Month 15 after receiving fidanacogene elaparvovec. When taking only routine FIX replacement therapy previously, 13 out of these 45 [29%] participants had no bleeding events.

Figure 2: Number of bleeding events after participants took fidanacogene elaparvovec compared with number of bleeding events after routine FIX replacement therapy.



Based on these results, the researchers have decided that these results are not likely the result of chance. The study medication may help in lowering the number of bleeding events.

This does not mean that everyone in this study had these results. This is a summary of just some of the main results of this study. Other studies may have different results.

What medical problems did participants have during the study?

The researchers recorded any medical problems the participants had during the study. Participants 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 also have been caused by a study treatment or by another medicine the participant 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 effects a study medication might have on a participant.

Thirty-eight (38) out of 45 [84%] participants in this study had at least 1 medical problem. No participants left the study because of medical problems. The most common medical problems – those reported by more than 5% of participants – are described below (Table 1).

Below are instructions on how to read the tables.

Instructions for Understanding Table 1.

- The **1st** column of Table 1 lists medical problems that were commonly reported during the study. All medical problems reported by more than 5% of participants are listed.
- The **2nd** column tells how many of the 45 participants taking the study medication reported each medical problem. Next to this number is the percentage of the 45 participants taking the study medication who reported the medical problem.
- Using these instructions, you can see that 12 out of the 45 (27%) participants taking the study medication reported increased liver enzyme in blood (alanine aminotransferase).

Table 1. Commonly reported medical problems by study participants	
Medical Problem	**Fidanacogene elaparvovec (45 Participants)**
Increased liver enzyme in blood (alanine aminotransferase)	12 out of 45 participants (27%)
Inflammation of the nose and throat	8 out of 45 participants (18%)
Joint pain	8 out of 45 participants (18%)
COVID-19	6 out of 45 participants (13%)
Headache	6 out of 45 participants (13%)
Unusual liver function	6 out of 45 participants (13%)
Infection of the nose and throat	4 out of 45 participants (9%)
Acne	3 out of 45 participants (7%)
Difficulty in falling and staying asleep	3 out of 45 participants (7%)
Fat deposit in liver	3 out of 45 participants (7%)
High blood pressure	3 out of 45 participants (7%)

Table 1. Commonly reported medical problems by study participants	
Medical Problem	**Fidanacogene elaparvovec (45 Participants)**
Increased liver enzyme in blood (aspartate aminotransferase)	3 out of 45 participants (7%)
Increased liver enzyme	3 out of 45 participants (7%)
Increased liver enzyme in blood (transaminase)	3 out of 45 participants (7%)
Joint swelling	3 out of 45 participants (7%)
Low levels of blood clotting FIX	3 out of 45 participants (7%)
Low levels of hemoglobin (anemia)	3 out of 45 participants (7%)
Pain in upper part of stomach	3 out of 45 participants (7%)
Positive test for COVID-19	3 out of 45 participants (7%)
Stomach pain	3 out of 45 participants (7%)

Did study participants have any serious medical problems?

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

Seven (7) participants (16%, or 7 out of 45 participants) had serious medical problems. These may or may not have been related to the study medication.

Serious medical problems reported by study participants are described in Table 2.

Table 2. Serious medical problems reported by study participants

Medical Problem	Fidanacogene elaparvovec (45 Participants)
Low levels of hemoglobin (anemia)	2 out of 45 participants (4%)
Bleeding in food pipe, stomach or upper part of gut	1 out of 45 participants (2%)
Bleeding in the lining of the part of the gut leading out of the stomach	1 out of 45 participants (2%)
Lung infection due to COVID virus	1 out of 45 participants (2%)
COVID-19	1 out of 45 participants (2%)

Table 2. Serious medical problems reported by study participants	
Medical Problem	**Fidanacogene elaparvovec (45 Participants)**
Liver injury due to non-study medications	1 out of 45 participants (2%)
Low levels of blood clotting FIX	1 out of 45 participants (2%)
Low levels of potassium in the blood	1 out of 45 participants (2%)
Painful sore in the lining of the part of the gut leading out of the stomach	1 out of 45 participants (2%)
Poisoning from alcohol	1 out of 45 participants (2%)
Seizures	1 out of 45 participants (2%)
Skin infection that happens mostly around tailbone	1 out of 45 participants (2%)
Thigh bone fracture	1 out of 45 participants (2%)

No participants died during the study.

Where can I learn more about this study?

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 your study protocol, please visit:

www.pfizer.com/research/research_clinical_trials/trial_results	Use the protocol number **C0371002**

The full scientific report of this study is available online at:

www.clinicaltrials.gov	Use the study identifier **NCT03861273**
www.clinicaltrialsregister.eu	Use the study identifier **2018-003086-33**

Please remember that researchers look at the results of many studies to find out which medicines can work and are safe for patients.

Again, if you participated in this study, **thank you** for volunteering. We do research to try to find the best ways to help patients, and you helped us to do that!