CLINICAL TRIAL 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 medicine 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(s) Studied: *Staphylococcus aureus* 4-Antigen Vaccine (SA4Ag)

Protocol Number: B3451014

Dates of Trial: 16 January 2014 to 19 April 2016

Title of this Trial: Final Report: A Study to Assess Persistence of the Immune Response After Vaccination With a *Staphylococcus aureus* 4-Antigen (SA4Ag) Vaccine

Date of this Report: 24 October 2018

– 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 results please contact the doctor or staff at your study site.

WHY WAS THIS STUDY DONE?

Staphylococcus aureus, or *S aureus*, is a type of germ that can normally be found on the skin and in the noses of healthy people. *S aureus* can also cause infections in some people, especially people who have spent time in the hospital or had surgery. *S aureus* can lead to many serious medical problems and can be hard to treat.

The Sponsor is developing a vaccine to prevent *S aureus* infections in adults who have had spinal surgery. This vaccine is called the "*Staphylococcus aureus* 4-Antigen Vaccine", or SA4Ag. It is given by injection into the arm.

SA4Ag contains ingredients that look like *S aureus,* but that can't make people sick. Instead, SA4Ag tricks the immune system into making "antibodies" against *S aureus*. Antibodies are special proteins that can recognize and help kill germs. Researchers are studying to see if these antibodies may protect people from getting serious infections with *S aureus*. "Antigen" is the name for the ingredients in a vaccine that trick the body into making antibodies. SA4Ag is made with 4 different antigens, so researchers in this study looked for antibodies in the blood against each of these 4 antigens.

The Sponsor has already done several other studies to find out whether SA4Ag generates antibodies against *S aureus*. This study was done as a follow-up study to find out how long the antibodies that SA4Ag generates can last. This information may help researchers decide how often patients should receive SA4Ag.

The main purpose of this study was to find out if healthy volunteers still had antibodies to *S aureus* up to 3 years after receiving SA4Ag. Researchers wanted to know:

Would volunteers still have antibodies against *S aureus* about 2 years and 3 years after receiving SA4Ag?

To find out, researchers tested volunteers' blood to see if antibodies against *S aureus* were still present about 2 years after they received SA4Ag. Researchers tested volunteers' blood again 3 years after they received SA4Ag.

How would the antibody responses against *S aureus* change from before volunteers received SA4Ag to 3 years after receiving SA4Ag?

To find out, researchers compared *S aureus* antibody levels in volunteers' blood at 5 different times: before volunteers received SA4Ag, 29 days after receiving SA4Ag, 1 year after receiving SA4Ag, about 2 years after receiving SA4Ag, and 3 years after receiving SA4Ag.

WHAT HAPPENED DURING THE STUDY?

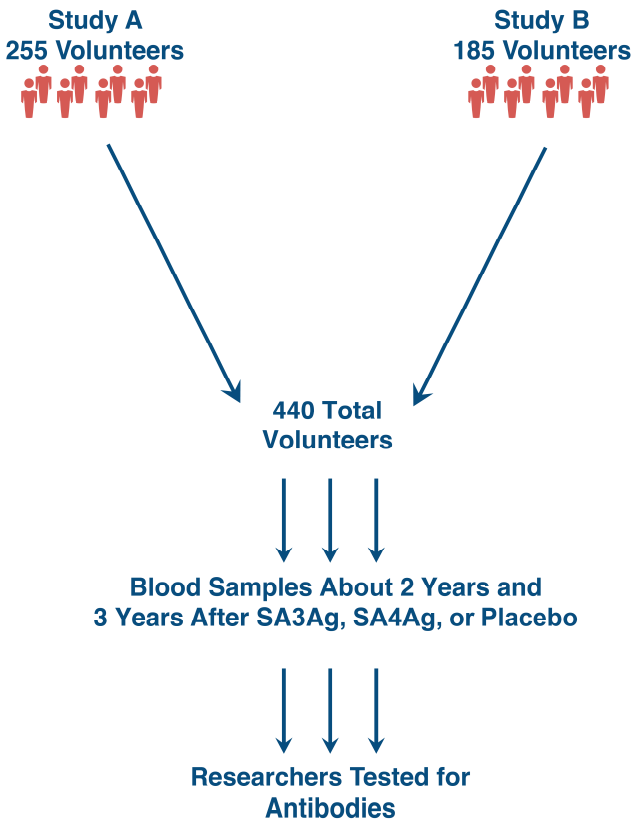
Volunteers in this study were not given SA4Ag. Instead, the Sponsor invited volunteers who already participated in 1 of 2 studies of SA4Ag (Study A or Study B) to join this study.

In Study A and Study B, researchers were trying to decide the best SA4Ag dose. The volunteers in these 2 studies could have received a low dose, a medium dose, or a high dose of SA4Ag, or they could have received a placebo (dummy vaccine). A placebo looks just like the vaccine, but does not actually have any vaccine in it. Also, some volunteers from Study B could have received a similar vaccine called SA3Ag instead of SA4Ag. SA3Ag has 3 of the 4 antigens (active ingredients) that are included in SA4Ag.

Volunteers were required to come to the study center 2 times for blood tests at around 2 or 3 years after they received the vaccine or placebo. The researchers who did the blood tests did not know whether the volunteers were given SA4Ag, SA3Ag, or a placebo in Study A or Study B. This is called "blinding", and it is done to make sure the study results are not influenced in any way.

255 volunteers from Study A joined the study. Study A included men and women between the ages of 18 and 64. 185 volunteers from Study B joined the study. Study B included men and women between the ages of 65 and 85.

Of the 440 total volunteers who started this study, 404 volunteers finished the study. 36 volunteers left before the study was over by their own choice or because they no longer met the requirements to participate in the study.



While each volunteer was only in the study for 6 to 12 months, the entire study took about 30 months to complete. Volunteers joined this study at 12 locations in the United States. It began 16 January 2014 and ended 04 November 2016, and was completed as planned. 253 women and 187 men participated.

When the study ended, 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 volunteers still have antibodies against *S aureus* about 2 years and 3 years after receiving SA4Ag?

Yes. To answer this question, researchers tested volunteers' blood about 2 years after they received SA4Ag. They tested it again 3 years after volunteers received SA4Ag. The researchers were looking for antibodies against each of the antigens. Most volunteers who received high-dose SA4Ag still had antibodies against *S aureus* up to 3 years after receiving SA4Ag.

How did the antibody responses against *S aureus* change from before volunteers received SA4Ag to 3 years after receiving SA4Ag?

To answer this question, researchers compared the *S aureus* antibody levels in volunteers' blood at 5 different times: before volunteers received SA4Ag, 29 days after receiving SA4Ag, 1 year after receiving SA4Ag, about 2 years after receiving SA4Ag, and 3 years after receiving SA4Ag.

For all antigens, antibody levels were highest at day 29, then they began to fall.

In volunteers who received the high-dose SA4Ag, the antibody levels for the first 3 antigens were about 3 to 8 times higher after 3 years than they were before volunteers received SA4Ag. For the fourth antigen, after 3 years, antibody levels were close to antibody levels before volunteers received SA4Ag.

These results suggest that antibody responses to high-dose SA4Ag remain for up to 3 years after vaccination in healthy volunteers.

This does not mean that everyone in this study had these results. Other studies may produce different results, as well. These are just some of the main findings of this study.

WHAT MEDICAL PROBLEMS DID VOLUNTEERS HAVE DURING THE STUDY?

The researchers recorded any medical problems the volunteers had in the 2 days following each blood test. Volunteers 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 medicine the volunteer 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 vaccine might be.

In this study, no volunteers reported a medical problem during the 2 days following each blood test.

WERE THERE ANY SERIOUS MEDICAL PROBLEMS?

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

No volunteers in this study reported a serious medical problem that the researchers determined could have been related to receiving SA4Ag in Study A or Study B. No volunteers 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.

Please remember that researchers look at the results of many studies to find out which vaccines work best and are safe for patients. A study is currently being done to find out if SA4Ag can protect against *S aureus* in patients who have had spine surgery. After that study is finished, the Sponsor will continue to do research to decide whether additional doses of SA4Ag are needed.

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!