

What is rejection?

Rejection is likely to occur at some point

One of the possible complications that you can develop after transplantation is rejection. It is natural to be anxious about it. You and your family will be constantly on guard for the signs of rejection. This chapter will help you understand what it is and know how to prevent and treat it.

Rejection is not a disease; it is the normal reaction of the body to a foreign object. The part of your body that causes rejection is the immune system. The immune system is made up mostly of white blood cells meant to destroy germs such as bacteria and viruses and help fight other diseases. The reaction of the body to unknown cells is known as an antigen-antibody reaction. Antibodies are proteins found in your blood that are always trying to protect you from any foreign invader. They are quick to try to destroy anything they don't recognize as part of "you".

This complicated part of the human immune system is very helpful in most situations but it cannot tell the difference between "bad" cells such as the germs that cause the common cold and "good" cells such as a transplanted heart. When a new heart is placed in your body, the body sees the transplanted organ as a threat and tries to attack it.

Rejection is an antigen-antibody reaction

Rejection occurs when the immune system makes antibodies to try to destroy the new organ, not realizing that the transplanted heart is beneficial. Before you received your new heart, blood was taken from you to determine your blood type and antibodies that may have already formed in your body. A cross-match test was done when the donor was found to see if you would have an immediate reaction to the donor heart. Knowing the results of these tests helps the doctors prevent immediate rejection of the heart.

Rejection can be acute or chronic

Rejection that occurs in the first weeks to months after transplant is called **acute**. It can be cellular or humoral. Cellular is treated with IV medication; humoral with plasmapheresis in addition to increased steroids. Acute transplant rejection is an expected part of the recovery process and can develop at anytime. To allow the donor organ to successfully live in your body, medications must be given to trick your immune system into accepting the transplant and not think it is a foreign object.

Chronic rejection occurs later after the transplant. It is somewhat common and develops more gradually and can go on for months or years. It often presents like coronary artery disease. Preventing and treating acute rejection may reduce the possibility of chronic rejection.

Rejection, continued

Coronary artery disease after heart transplantation is sometimes called chronic rejection. The coronary arteries develop blockages due to the immune system changes. It is different from the plaque that is seen in most heart attack patients. You will not be able to feel pain in your heart (due to the denervation), yet you may feel shortness of breath or fatigue. You will have a yearly heart catheterization to look for this complication. The other important thing is to do all the things recommended to prevent coronary artery disease. These are discussed throughout this booklet. Symptoms of unusual fatigue and shortness of breath should be reported immediately.

Rejection is treatable with immunosuppression

Since rejection is caused by your immune system, we call methods to prevent it **immunosuppression**. Many of the medications you are taking are given to prevent this antigen-antibody reaction from occurring. You received powerful medications in your vein before you went to surgery and have been receiving them ever since. You are on a plan particularly suited to your needs. You may use different immunosuppressive combinations and dosages at various times. The ideal goal of an individual medication plan is to hold back organ rejection while reducing drug toxicity and the risk for infection. See the chapter on Medications for more information on this subject.

Unfortunately, at this time there are no methods to suppress your body's response to a foreign

organ without also impairing its response to infections/cancer. Preventing and monitoring infection becomes important when your immune system is suppressed. See the section on Infection for more information.

Recognizing rejection as soon as possible is very important

Episodes of rejection of your transplanted organ occur at random times following surgery, and are most frequent within the first few weeks or months after surgery. There is no one laboratory test or symptom to definitely detect cardiac rejection. The microscopic examination of tissue obtained by cardiac biopsy is the only reliable method currently available to diagnose if rejection is developing or decreasing. See the Testing chapter for more information.

Routine heart biopsies will be performed approximately every week for the first four weeks after the operation and then with less frequency, depending on your course. After three months most patients will move to Allomap testing from biopsies, until their annual evaluation. At that time, they will again have a biopsy. For additional information on the biopsy procedure, tissue grading and Allomap testing, please see the chapter on Testing.

Don't miss your lab appointments or checkups. This helps to make sure you are taking the right dose of medication and this is key to prevention of rejection.

Rejection, continued

You must know and report the symptoms of rejection

The following are the most common signs and symptoms of rejection. However, each person may experience symptoms differently. It is important that you and your loved ones recognize these signs and report them immediately.

Symptoms may include any or all of the following:

- *Shortness of breath*
- *Difficulty breathing while lying on your back*
- *A fast or irregular heart beat—feeling of palpitations*
- *Fast breathing rate*
- *Increased weight or swelling*
- *Feeling tired and not being able to exercise as much*
- *Temperature of 100.5° F or higher*
- *Flu-like symptoms – chills, aches, headache, dizziness, nausea or vomiting*
- *Irritability*
- *Poor appetite*

You may notice that many of these signs are the same as those you experienced before your heart transplant. It does not mean that your new heart will fail, it just means you need to get medical attention immediately.

Also remember that other minor illnesses can get worse and lead to rejection so don't ignore these. It is always best to call the office and get advice

from the transplant coordinator if you have any change in condition.

Rejection treatment works best when begun early

Each rejection episode can harm your transplanted heart so the sooner the treatment the less damage. The treatment may include the administration of increased dosages of oral prednisone or three days of intravenous Solu-Medrol, or both. For persistent or severe rejection, the administration of other intravenous medications may be added to the therapy. A follow-up biopsy is always done to assess the success of your therapy.

Rejection may be treated with a treatment called plasmapheresis. This treatment is done by the Red Cross using a machine that filters the antibodies out of your blood.

You should not think of rejection as unstoppable. With early detection and good medical care, a rejection episode will likely be brought under control. By putting all this information to use, you will be ready to handle this complication.

In summary

- *Rejection is an expected part of recovery.*
- *Take all medication as instructed to avoid rejection.*
- *You play the most important part in your health-care plan – stay calm and healthy and keep in touch with the transplant team.*