Immunoglobulin Replacement Therapy

What is immunoglobulin (IgG) replacement therapy?

Immunoglobulin replacement therapy contains antibodies, also known as immunoglobulins, that come from the plasma of healthy donors. The antibodies are cleaned and removed from the plasma in a safe and effective way. Most of the antibodies are immunoglobulin G (IgG) or gamma globulin.

Immunoglobulin replacement therapy is helpful to some people with primary immunodeficiency (PI). It temporarily replaces the infection-fighting antibodies they are missing.

Why do some people need IgG replacement therapy?

IgG replacement therapy is often given to a person because the B lymphocytes, or B cells, of their immune system are not working. The B cells make a very important type of protein called antibodies. Antibodies help protect the body against infections such as bacteria and viruses. When a bacteria or virus invades, the B cells make the specific antibody that will help destroy the invading germ.

If the B cells are not working, they cannot make antibodies. Low levels of antibodies increase the risk for getting a life-threatening infection.

An infusion of IgG replaces antibodies the body should be making, but does not help the body make more. This means you may need IgG replacement therapy for the rest of your life.

How is IgG replacement therapy given?

IgG replacement is done by an infusion. An infusion is a way to slowly introduce a liquid (or medicine) into the body tissue or blood. The medicine can be given either through a needle in a vein (intravenously), or through a needle into the fat tissue just below the skin (subcutaneously). Your doctor decides which way to give it and the correct amount (dosage) of IgG based on your weight, your condition, and how well the IgG treats or prevents symptoms.

Two types of IgG infusion:

Intravenous immunoglobulin (IVIG)

IVIG is given through a needle directly into a vein. Most often, the first few infusions of IgG replacement therapy are given in a vein by IV, and then some patients may switch to getting it under the skin by subcutaneous infusions. The first infusion of any IgG product must be given in an infusion center or doctor’s office to watch for any signs of reaction.
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**Length of time per treatment:**
The first infusion of IVIG is always longer and can take 4 to 6 hours. If tolerated well, the next infusion can take less time – about 2 to 4 hours. Slowing the infusion rate of the first infusions can help avoid side effects. IVIG is given every 3 to 4 weeks.

**Side effects:**
The most common side effects with IVIG are headaches, fatigue, body aches and rash that usually happen within 24 hours after the infusion. It is rare to have a true allergic reaction or anaphylaxis, such as hives or difficulty breathing. You will be given premedications before your first infusion to lower the chance of having a reaction. Premedications can include Tylenol or ibuprofen, Benadryl and hydrocortisone. If your infusions are tolerated well, over time some of the premedications can be stopped.

**Where you go for treatment:**
If you are an adult (over age 21) we will work with you and your referring provider to decide the best location for your first infusions. After that, you will most likely transition to home therapy through a home health care company where a nurse comes to the home, places the IV and infuses the IVIG. Children under age 21 who live locally will get their first infusion at our infusion center and may continue to infuse IVIG in our center, or may transition to a home health care company.

**Subcutaneous immunoglobulin (SCIG)**
SCIG is given through a small needle that goes under the skin into the fatty tissue. SCI infusions are an option for many people with immune deficiencies, usually after first receiving IV infusions.

**Length of time per treatment:**
SCIG infusions are given at least once a week. The length of time for each infusion varies greatly depending on the dose. For young children the dose is often so small that a pump is not required and may only take 10 minutes. For older children and adults the larger dose may take an hour to infuse and requires a pump.

**Side effects:**
The most common side effects seen with SCIG are rash at site of the injection, headache and fatigue.

**Where you go for treatment:**
If the first dose is tolerated well, most people self-infuse at home after receiving training from a healthcare professional.
How do I choose between IVIG or SCIG?

Talk with your healthcare provider and the immunology nurse about which therapy will be best for you, IVIG or SCIG.

IVIG may not be an option if you have difficulty with IV lines. SCIG is a great option for those who like to be able to travel with their medicine or prefer the freedom of self-infusing at home on their own schedule.

Resources

Seattle Children’s Hospital
The Immunology Department’s home page has a wealth of information regarding primary immunodeficiency. Type “immunology” in the search box. seattlechildrens.org

Immune Deficiency Foundation
A national patient organization dedicated to improving the diagnosis, treatment and quality of life of persons with primary immunodeficiency diseases through advocacy, education and research. primaryimmune.org
1-800-296-4433

Jeffrey Modell Foundation
A nonprofit organization dedicated to early diagnosis, meaningful treatments and cure of PI. info4pi.org
1-866-info-4-pi