

PLASMAPHERESIS

Plasmapheresis is a process in which the fluid part of the blood, called plasma, is removed from blood cells by a device known as a cell separator. The separator works either by spinning the blood at high speed to separate the cells from the fluid or by passing the blood through a membrane with pores so small that only the fluid part of the blood can pass through. The cells are returned to the person undergoing treatment, while the plasma, which contains the antibodies, is discarded and replaced with other fluids. Medication to keep the blood from clotting (an anticoagulant) is given through a vein during the procedure.

What's involved in a plasmapheresis treatment?

A plasmapheresis treatment takes several hours and can be done on an outpatient basis. It can be uncomfortable but is normally not painful. The number of treatments needed varies greatly depending on the particular disease and the person's general condition. An average course of plasma exchanges is six to 10 treatments over two to 10 weeks. In some centers, treatments are performed once a week, while in others, more than one weekly treatment is done.

A person undergoing plasmapheresis can lie in bed or sit in a reclining chair. A small, thin tube (catheter) is placed in a large vein, usually the one in the crook of the arm, and another tube is placed in the opposite hand or foot (so that at least one arm can move freely during the procedure). Blood is taken to the separator from one tube, while the separated blood cells, combined with replacement fluids, are returned to the patient through the other tube.

The amount of blood outside the body at any one time is much less than the amount ordinarily donated in a blood bank.

Are there risks associated with plasmapheresis?

Yes, but most can be controlled. Any unusual symptoms should be immediately reported to the doctor or the person in charge of the procedure. Symptoms that may seem trivial sometimes herald the onset of a serious complication.

The most common problem is a drop in blood pressure, which can be experienced as faintness, dizziness, blurred vision, coldness, sweating or abdominal cramps. A drop in blood pressure is remedied by lowering the patient's head, raising the legs and giving intravenous fluid.

Bleeding can occasionally occur because of the medications used to keep the blood from clotting during the procedure. Some of these medications can cause other adverse reactions, which begin with tingling around the mouth or in the limbs, muscle cramps or a metallic taste in the mouth. If allowed to progress, these reactions can lead to an irregular heartbeat or seizures. An allergic reaction to the solutions used to replace the plasma or to the sterilizing agents used for the tubing can be a true emergency. This type of reaction usually begins with itching, wheezing or a rash. The plasma exchange must be stopped and the person treated with intravenous medications.

Excessive suppression of the immune system can temporarily occur with plasmapheresis, since the procedure isn't selective about which antibodies it removes. In time, the body can replenish its supply of needed antibodies, but some physicians give these intravenously after each plasmapheresis treatment. Outpatients may have to take special precautions against infection. Medication dosages need careful observation and adjustment in people being treated with plasmapheresis because some drugs can be removed from the blood or changed by the procedure.

(Facts about Plasmapheresis Muscular Dystrophy Association Updated 07/05)