DESCRIPTION:

Plasma refers to the “liquid” portion of the blood which contains proteins, electrolytes, vitamins, hormones, etc. It does not include the red blood cells, white blood cells or platelets. Plasma exchange is a procedure in which a machine separates and removes the patient’s plasma, replacing it with another fluid. The most commonly used fluid for replacement is 5% human albumin (a protein solution). In some cases plasma donated from other people is used. Many types of machines are available: the most common ones use a centrifuge to separate the blood into its different parts. To keep blood from clotting during the treatment, a solution containing citrate is used.

REASON FOR THE PROCEDURE:

Plasma exchange is used when it is necessary to remove disease-causing proteins, called antibodies, from a patient. These antibodies, found in the plasma, are caused by an abnormal immune system and can attack healthy organs. It is often not possible to remove only the protein that is causing the disease. Therefore, the plasma must be removed to treat the illness.

VENOUS ACCESS:

In some cases, plasma exchange can be done using needles that are placed in each arm. Blood is removed from one arm, separated in the machine, the plasma is removed, and the rest of the blood with the added replacement fluid is returned to the patient through the other arm. In patients with small or fragile arm veins, the placement of a central venous catheter (CVC) may be necessary.

DURATION:

This varies from patient to patient, but an average plasma exchange procedure lasts about 2 hours.

RISKS AND SIDE EFFECTS:

Plasma exchange is a safe procedure but side effects can occur. Common side effects include fatigue, nausea, dizziness, feeling cold and tingling in the fingers and around the mouth, allergic reaction, and lowered blood pressure. It is very important to notify medical staff if these symptoms occur. Serious complications such as abnormal heart beat, seizures, electrolyte abnormalities, and unexplained bleeding are extremely rare.

NUMBER OF PROCEDURES THAT ARE REQUIRED:

This depends on the disease that is being treated. While some diseases require a short course of treatment, others may require many treatments. Patients should ask their physician, or the apheresis physician, for specific details related to their condition.
PROCEDURE:
THERAPEUTIC PLASMA EXCHANGE
(ALSO REFERRED TO AS THERAPEUTIC PLASMAPHERESIS)

DISEASES FOR WHICH THE PROCEDURE IS USED:
Plasma exchange is a standard treatment for many diseases. Conditions that are commonly treated with plasma exchange include diseases that affect the nervous system like Guillain-Barré Syndrome, CIDP (chronic inflammatory demyelinating polyneuropathy), and myasthenia gravis. It is also used to treat some diseases in which the blood is too thick (hyperviscosity), and a blood disorder called TTP (thrombotic thrombocytopenic purpura) where small blood clots can cause damage to organs.

OTHER CONSIDERATIONS:
Plasma exchange can remove large amounts of some medications, including intravenous medications that you may be getting. Patients should talk to their physicians about any medication changes that may be needed before having the procedure.

WHAT YOU SHOULD DO TO PREPARE:
If this procedure is done as an urgent part of the initial treatment for illnesses such as TTP or myasthenia gravis it will be done in the hospital under the direction of a physician, and no specific activities are necessary by the patient prior to this procedure. If this procedure is done as maintenance therapy for certain neurologic conditions, it is usually performed in an outpatient clinic. In that case, the patient is advised to drink non-carbonated, non-alcoholic beverages in the 72 hours prior to plasma exchange.

IMPORTANT TERMS:
Acute: Having severe symptoms and a short course
Central Venous Catheter (CVC): An IV tube placed into a large vein that leads to the heart. The catheter is usually put in before the treatment starts, and is used to give medicines, fluids, nutrition, transfusions and for taking blood samples.
Intravenous (IV): In to a vein. Many medications are administered IV during transplant.

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