

PROCEDURE: LDL-APHERESIS

Description:

LDL apheresis is a procedure that removes LDL (bad) cholesterol from the blood of patients who have very high cholesterol levels due to a genetic condition. In these patients the cholesterol levels cannot be controlled with diet, exercise, or medication. During the LDL-apheresis procedure, the blood cells are separated from the plasma. Specialized filters are used to remove the LDL cholesterol from the plasma, and the filtered blood is returned to the patient. A single LDL apheresis treatment can remove 60-70% of harmful LDL cholesterol from the blood.

There are two machines that are approved in the U.S by the Food and Drug Administration. The Liposorber uses a filter covered with a sugar called dextran, which attaches to the LDL and removes it from the circulation. The other machine is called HELP and uses heparin (a blood thinner) to remove the LDL. Neither of these machines causes significant changes in the amount of HDL (good) cholesterol.

Reason for the Procedure:

High levels of cholesterol dramatically increase the risk of heart disease and stroke. Although high cholesterol is a very common health problem, the vast majority of individuals will respond to medications. LDL-apheresis is used only for patients who have very high levels of LDL and do not respond to cholesterol-lowering medications (or cannot tolerate them due to side effects).

Venous Access:

In many cases, this procedure can be performed using needles that are placed in each arm. In patients with small or fragile veins, a central venous catheter may be necessary. Since this is a chronic ongoing therapy, many patients undergo the placement of an arteriovenous "shunt" in their arm.

Duration:

This varies from patient to patient. A typical procedure lasts approximately 1.5-2 hours but may be up to 4 hours.

Risks and Side Effects:

LDL-apheresis is a safe procedure but side effects can occur. Potential side effects include allergic reactions, low blood pressure (BP), fatigue, nausea, chest pain and dizziness. It is very important to notify medical staff if these symptoms occur. Serious life threatening complications have not been reported with this procedure.

Diseases for Which the Procedure is Used:

The United States Food and Drug Administration (FDA) has approved the therapy for patients in the following categories:

- Patients with LDL cholesterol levels of 200 mg/dl or higher with a history of coronary artery disease.
- Patients with LDL cholesterol levels of 300 mg/dl or higher without coronary artery disease.

Number of Procedures that are Required:

This is a life-long therapy that is required once every two weeks. This procedure only removes the LDL cholesterol that is in the circulation; it does not treat the underlying problem in the liver that is causing the increased cholesterol levels. If this therapy is stopped, cholesterol levels will increase over time.

Other Considerations:

Patients should talk to their physicians about any medication adjustments that may be needed prior to undergoing the procedure. Blood pressure medicines, specifically ACE-inhibitors, may need to be held prior to the LDL-apheresis. If you have an allergy to heparin you cannot have this procedure.

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