

Low-Molecular-Weight Heparin (Lovenox/Enoxaprin)

What is Low-Molecular Weight Heparin (LMWH)?

Standard Heparin (SH) is a mixture of heparins which have variable sizes. SH has been used in the treatment of clotting for many years, and is well researched. SH is given by IV access. LMWH is a recent addition to the short list of therapies for prophylaxis and treatment of blood clots (thrombosis). LMWH contains only the small sized heparins and was developed to obtain more effective and safer anticoagulation (blood thinning) treatment with fewer side effects. LMWH is better absorbed than SH, it remains in the blood stream longer and has a more predictable clinical response. LMWH does not dissolve blood clots, but may keep a blood clot from extending or traveling to another area in your body. In adult studies, the LMWH appeared to cause less bleeding, have a lower incidence of low platelet count and a lowered risk of osteoporosis (thinning of the bones).

When is LMWH given?

LMWH is given:

- To **prevent** blood clots in the veins (prophylactically)
- To **treat** blood clots already in the veins (therapeutically)
- If treatment with coumadin has failed (another clot has formed while on a therapeutic level of coumadin)
- If severe inflammation is an issue as in Lupus or Antiphospholipid Antibody Syndrome
- If a women is pregnant and needs blood thinning medications

How is LMWH given and how do you monitor it?

LMWH is generally given twice a day because the effects are longer lasting than SH therapy. LMWH is given by subcutaneous injection (into the fat under the skin). The dose is based on the patient's weight and anti-factor Xa (the test to see if the LMWH levels in your blood are enough to work well) activity levels. Blood samples to check anti-factor Xa levels are drawn 4 hours after the second dose of LMWH and 4 hours after any dose changes. When a patient is on long-term LMWH, their platelet count is monitored along with bone density studies (x-rays) at regular intervals. This medication needs to be given on a regular schedule, if you miss a dose, call your provider for instructions.

What should I do if I am on LMWH?

Patients being treated with LMWH should avoid using drugs that interfere with platelet activity such as aspirin, ibuprofen (Motrin) and other non-steroidal anti-inflammatory drugs. A pharmacist or hematologist should be consulted before starting any newly prescribed or over-the-counter drugs. Invasive procedures, injections into the muscle and all surgeries should be approached with caution when using LMWH and should be discussed with your hematologist.

Are there any side-effects of LMWH?

Like all medications, LMWH may have side effects.

- Bleeding is the most common side effect and any unusual bleeding (nosebleeds, gumbleeds, excessive bruising) should be reported to your provider. Avoid aspirin and ibuprofen.
- Irritation at the injection site can occur in some patients.

What if excessive bleeding occurs?

The blood thinning effects of LMWH can be reversed with the drug protamine sulfate. Call the clinic with increased bruising or bleeding.

If you have any questions, please contact KC Clevenger, Coagulation Nurse Practitioner at 303.861.6972 or the Hematology fellow on call at 303.861.6740.