NEWBORN USE ONLY
GIVEN ON DOCTORS ORDER ONLY

ENOXAPARIN SODIUM
LOW MOLECULAR WEIGHT HEPARIN

DESCRIPTION

Enoxaparin is a fractionated, low molecular weight heparin with a longer duration of action than heparin. This anticoagulant activates antithrombin III that progressively inactivates both thrombin and factor Xa. Efficacy in neonates is decreased due to low antithrombin plasma concentrations

Advantages of fractionated Low Molecular Weight Heparin over unfractionated heparin sodium

- Once daily dosing, rather than a continuous infusion
- No need for monitoring of the APTT coagulation parameter
- Possibly a smaller risk of bleeding
- Smaller risk of heparin-induced thrombocytopenia
- Anticoagulant effects are reversible with protamine sulfate

Enoxaparine is rapidly absorbed. Its bioavailability is 90%. Metabolised by the liver, eliminated by the kidneys.

Data on the safety and efficacy of enoxaparin in the neonate are limited because of the infrequent nature of neonatal thrombosis.

USE

Deep vein thrombosis
Pulmonary embolus
Arterial thromboses

PRESENTATION

20mg/0.2ml pre-filled syringes

DOSE

1.5 mg/kg every 12 hours
Adjust dosage to maintain anti-factor Xa levels between 0.5 - 1 U/ml.

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ADMINISTRATION

Subcutaneous injection

STORAGE

Discard unused portion

MONITORING

Measure anti-factor Xa concentrations 4 hours after a dose.

Guidelines for adjusting LMWH Therapy in Neonates

Anti-factor Xa concentration U/ml	Dose adjustment	Next anti-factor Xa measurement
<0.35	increase next dose by 25%	4 hr following dose adjustment
0.35 - 0.49	increase next dose by 10%	4 hr following dose adjustment
0.5 - 1.0	no change	Weekly 4 hr following a dose If change in renal function, addition of antibiotics, signs of bleeding, check level 4 hr after next dose
1.1 -1.3	decrease next dose by 20%	Before next dose and 4 h following dose adjustment
1.4 to 2.0	hold dose until anti-factor Xa level <1 then decrease next dose by 30%	4 hr following dose adjustment
>2.0	hold dose until anti-factor Xa level <0.5 then decrease next dose by 40%	12 h until anti-factor Xa level <0.5, then 4 hr following reinstitution of therapy

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ADVERSE EFFECTS Local irritation, pain, bruising following subcutaneous injection
Haemorrhage - blood leakage, bruises, induration, or hematoma at the site of the indwelling catheters, minor bleeding found in gastric feeding tubes
Thrombocytopenia
Elevation of liver enzymes (AST & ALT)
Osteopenia

ANTIDOTE If anticoagulation with LMWH must be terminated for any reason, discontinuation of the subcutaneous injections usually is sufficient. At least two doses of LMWH should be withheld and anti-factor Xa measured, if possible, prior to the performance of lumbar punctures and other invasive procedures.
Protamine sulfate neutralizes the anti-factor Xa activity only partially, but has been shown to reverse bleeding due to LMWH in animal models. The recommended dose of protamine sulfate is 1 mg for 100 U of LMWH given within 4 hours.

CONTRAINDICATIONS Infants with active bleeding
Evidence of intracranial or GI bleeding
Thrombocytopenia < 50,000
Renal failure

DRUG INTERACTIONS **1. Platelet inhibitors** acetylsalicylic acid, ibuprofen, indomethacin may induce bleeding and should be used with caution.

2. Other interactions digoxin, tetracyclines, or antihistamines may partially counteract the anticoagulant action of heparin.

SOLUTION COMPATIBILITY 0.9% sodium chlodide, water for injection

TERMINAL INJECTION SITE COMPATIBILITY No data available

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