FRONT

℞ For the use only of a Registered Medical Practitioner or a Hospital or a Laboratory.

Heparin Sodium Injection IP 25,000 IU

HEPAXARIN™

For IV / SC Use
25000 IU / 5 ml

Composition :
Each ml contains :

Heparin Sodium	IP	5,000 IU
Water for Injections	IP	q.s.

DESCRIPTION
Heparin Sodium Injection IP is derived from Porcine standardized for use as an anticoagulant in water for injection with 1.0% v/v Benzyl Alcohol as a preservative. The potency is determined by biological assay using a reference standard based upon units of heparin activity per milligram.

MECHANISM
Heparin inhibits the clotting of blood and the formation of fibrin clots both in vitro and in vivo. In combination with a co-factor, it inactivates thrombin thus preventing the conversion of fibrinogen to fibrin. Heparin also prevents the formation of a stable fibrin clot by inhibiting the activation of the fibrin stabilizing factor.

Heparin Sodium inhibits reactions which lead to clotting but does not alter the normal components of the blood. Although clotting time is prolonged by therapeutic doses, bleeding time is usually unaffected. Heparin Sodium does not have fibrinolytic activity, therefore it will not lyse existing clots.

INDICATIONS
1) For Anticoagulant therapy in Prophylaxis & Treatment in Venous Thrombosis & its extension;
2) For prophylaxis and treatment of pulmonary embolism;
3) In Atrial fibrillation with Embolization;
4) For Diagnosis and treatment of Chronic consumptive coagulopathies;
5) For prevention of clotting in arterial and heart surgery;
6) As an adjunct in treatment of coronary occlusion with acute myocardial infarction;
7) As an adjunct in prophylaxis and treatment of peripheral arterial embolism;
8) As a general anticoagulant in
   a) Blood Transfusions
   b) Extra Corporeal Circulation
   c) Dialysis procedures and
   d) Blood samples for Laboratory purposes.

DOSAGE AND ADMINISTRATION
Administer heparin sodium injection by intermittent intravenous injection, intravenous infusion, or deep subcutaneous (intrafat, i.e., above the iliac crest or abdominal fat layer) injection. Do not administer heparin sodium injection by intramuscular injection because of the risk of hematoma at the injection site. Adjust the dosage of heparin sodium injection according to the patient's coagulation test results. Dosage is considered adequate when the activated partial thromboplastin time (aPTT) is 1.5 to 2 times normal or when the whole blood clotting time is elevated approximately 2.5 to 3 times the control value. When initiating treatment with heparin sodium injection by continuous intravenous infusion, determine the coagulation status (aPTT, INR, platelet count) at baseline and continue to follow aPTT approximately every 4 hours and then at appropriate intervals thereafter. When the drug is administered intermittently by intravenous injection, perform coagulation tests before each injection during the initiation of treatment and at appropriate intervals thereafter. After deep subcutaneous (intrafat) injections, tests for adequacy of dosage are best performed on samples drawn 4 to 6 hours after the injection.Periodic platelet counts and hematocrits are recommended during the entire course of heparin therapy, regardless of the route of administration.
The dosing recommendations in Table 1 are based on clinical experience. Although dosages must be adjusted for the individual patient according to the results of suitable laboratory tests, the following dosage schedules may be used as guidelines:

METHOD OF ADMINISTRATION	FREQUENCY	RECOMMENDED DOSE [based on 150 lb (68 kg) patient]
Deep Subcutaneous (Intrafat) Injection	Initial dose	5,000 units by intravenous injection, followed by 10,000 to 20,000 units of a concentrated solution, subcutaneously
A different site should be used for each injection to prevent the development of massive hematoma	Every 8 hours or Every 12 hours	8,000 to 10,000 units of a concentrated solution 15,000 to 20,000 units of a concentrated solution
Intermittent Intravenous Injection	Initial dose	10,000 units, either undiluted or in 50 to 100 mL of 0.9% Sodium Chloride Injection, USP
	Every 4 to 6 hours	5,000 to 10,000 units, either undiluted or in 50 to 100 mL of 0.9% Sodium Chloride Injection, USP
Intravenous Infusion	Initial dose	5,000 units by intravenous injection
	Continuous	20,000 to 40,000 units/24 hours in 1000 mL of 0.9% Sodium Chloride Injection, USP (or in any compatible solution) for infusion

Pediatric Use:
Do not use this product in neonates and infants. Use preservative-free heparin sodium injection in neonates and infants. There are no adequate and well controlled studies on heparin use in pediatric patients. Pediatric dosing recommendations are based on clinical experience. In general, the following dosage schedule may be used as a guideline in pediatric patients:

Initial Dose	75 to 100 units/kg (IV bolus over 10 minutes) Infants: 25 to 30 units/kg/hour; Infants < 2 months have the highest requirements (average 28 units/kg/hour)
Maintenance Dose	Children > 1 year of age: 18 to 20 units/kg/hour; Older children may require less heparin,similar to weight-adjusted adults dosage
Monitoring	Adjust heparin to maintain APTT of 60 to 85 seconds, assuming this reflects an anti-Factor Xa level of 0.35 to 0.70

SURGERY OF THE HEART AND BLOOD VESSELS:
Patients undergoing total body perfusion for open heart surgery should receive an initial dose of not less than 150 units of heparin sodium per kilogram of body weight. Frequently, a dose of 300 units per kilogram is used for procedures estimated to last less than 60 minutes, or 400 units per kilogram for those estimated to last longer than60 minutes.

BLOOD TRANSFUSIONS
Addition of 400 to 600 units per 100 ml of whole blood. Usually 7,500 Heparin Sodium Units is added to 100 ml of Sterile Sodium Chloride injection and mixed (or 75,000 units per 1,000 ml of sodium chloride injection) and from this sterile solution, 6 ml to 8 ml is added per 100 ml of whole blood. Leukocyte counts should be performed on Heparinized blood within two hours after addition of the heparin. Heparinized blood should not be used for isoagglutin, compliment or erythrocyte fragility tests.

BACK

LABORATORY SAMPLES
Addition of 70 to 150 units of heparin sodium per 10 to 20 ml sample of whole blood are usually employed to prevent coagulation of the sample

CONTRAINDICATIONS
Hypersensitivity to Heparin.

Inability to perform suitable body coagulation tests. eg., the whole blood clotting time, partial thromboplastintime etc., at required intervals uncontrollable bleeding.

WARNINGS: Heparin Sodium should be used with extreme caution in disease states where there is increased danger of haemorrhage.

Not to be used in newly born or premature infants

Heparin Sodium injection I.P. when used in therapeutic dosage should be regulated by frequent blood coagulation tests. If the coagulation test is unduly prolonged or if haemorrhage occurs, Heparin Sodium should be promptly discontinued.

Some of the conditions in which increased danger of haemorrhage exists are as follows:

Cardiovascular	subacute bacterial endocarditis; arterial sclerosis; increased capillary permeability, during and immediately following major surgery, especially of brain, spinal cord and eye.
Haematologic	Conditions associated with increased bleeding tendencies such as haemophilia, some purpuras and thrombocytopenia.
Gastro-intestinal	Inaccessible ulcerative lesions; continuous tube drainage of stomach or small intestine.

Heparin Sodium may prolong the one-stage prothrombin time Accordingly, when heparin sodium is given with bishydroxycoumarin or sodium warfarin, a period of 4 to 5 hours after the last intravenous dose and 12 to 24 hours after the last subcutaneous (intrafat) dose of heparin sodium should elapse before blood is drawn, if a valid prothrombin time is to be obtained.

Salicylates may induce bleeding and should be used with caution in patients on heparin. Any drug which may induce prolongation of the prothrombin time or delay coagulation by any means, e.g. interference with platelet aggregation, etc., should likewise be used with caution.

While there is experimental evidence that heparin may antagonize the action of ACTH, insulin, or corticosteroids. This effect has not been clearly defined "

There is likewise evidence in experimental animals that heparin may modify or inhibit allergic reactions. However, the application of these findings to human patients, has not been fully defined. Larger doses of heparin maybe necessary in the febrile state. The use of digitalis, tetracyclines, nicotine and antihistamines may partially counteract the anticoagulant action of heparin. An increased resistance to heparin is frequently encountered in case of thrombosis, thromboflebitis infections with thrombosing tendency, myocardial infarction, cancer, and in the postoperative patients

This product contains Benzyl alcohol as preservative. Benzyl alcohol has been reported to be associated with a fatal "Gasping syndrome" in premature infants. Hence the product should not be used in newly born or premature infants.

PRECAUTIONS
1) Allergic Conditions
Because Heparin Sodium injection is derived from animal tissue, it should be used with caution in patients with a history of allergy. Before a therapeutic dose is given to such a patient a trial dose of 1000 units may be advisable.

2) Pregnancy
Heparin Sodium injection should be used with caution during pregnancy, especially during the last trimester (even though heparin does not cross the placental barrier) and in the immediate post partum period. It should also be used with caution in the presence of mild hepatic or renal disease, Hypertension, during menstrutation, or in patients with in-dwelling catheters. A higher incidence of bleeding may be seen in women over 60 years of age.

ADVERSE REACTIONS
Haemorrhage is the chief complication which may develop as a result of heparin therapy. An overly prolonged clotting time or minor bleeding during therapy can usually be controlled by withdrawing the drug.

When administered intramuscularly, heparin sodium may produce local irritation, mild pain, or haematoma at the injection site. These effects are less frequently seen following deep subcutaneous (intrafat) administration. Histamine - like reactions have also been observed at the site of injection. Hypersensitivity reactions have been reported with chills, fever, and urticaria as the most usual manifestations. Asthma, rhinitis, lacrimation, and anaphylactoid reactions have also been reported.

Acute, reversible thrombocytopenia has been reported following intravenously administered heparin sodium. Osteoporosis following long-term high-dose administration, aldosterone suppression, delayed transient alopecia, priapism, and rebound hyperlipemia following discontinuation of heparin sodium have also been reported.

OVERDOSAGE
Protamine sulphate (1 % solution) by slow infusion will neutralize heparin. Not more than 50 mg should be given in any 10 minutes period.

Each mg of protamine sulphate neutralizes approximately 100 units of heparin
The amount of protamine required decreases over time as heparin is metabolized. Although the metabolism of heparin is complex, it may, for the purpose of choosing a protamine dose, be assumed to have a half-life of about 1/2 hour after intravenous injection. Because fatal reactions often resembling anaphylaxis have been reported with protamine, it should be given only when resuscitation techniques and treatment of anaphylactoid shock are readily available. For additional information consult the labeling of protamine sulfate injection."

Storage : Store in a cool, dry & dark place. (Below 30°C.)

Any portion of the contents remaining after first use should be discarded

Keep out of reach of children.

PACKING & PRESENTATION
5 ml Vial of Heparin Sodium Injection IP 25,000 IU/5ml

Mfd. by : Protech Telelinks
(A WHO-GMP Certified Co.)
Mauza Ogli, Suketi Road, Kala Amb,
District Sirmour (H.P.)173030

Marketed by:

windlas
Windlas Biotech Limited
(A WHO GMP Certified Company)
40/1, Mohabewala Industrial Area,
Dehradun-248110, Uttarakhand