PROTAMINE AT THE TERMINATION OF DIALYSIS

Summary

- *Used to reverse the effect of heparin*
- *Not suitable to reverse oral anticoagulants*
- *Administered via slow intravenous injection over 10 minutes.*
- *Estimate the amount of heparin the patient received during the last 2 hours of dialysis and calculate the exact amount of protamines required to neutralise the heparin (1 mg per 100 unit of heparin). Give 50% of the estimated dose.*
- *Do not exceed a total dose of 50 mg of protamine sulphate.*

Cross References

Medication Handling in NSW Public Hospitals PD_2007 077

Medications, Therapy and Additives – Administration of via the intravenous route – CHN business rule draft

Indications

Basic protein (antidote). Counteracts anticoagulant effect of heparin before surgery, after renal dialysis, after open heart surgery, if excessive bleeding occurs, or when an overdose has inadvertently been given ("MIMS Online," 2012).

Contraindications

Hypotension; bradycardia; pulmonary, systemic hypertension; dyspnoea; transitory flushing, feeling of warmth; back pain; nausea, vomiting; lassitude; hypersensitivity including anaphylaxis ("MIMS Online," 2012).

Precautions

Not suitable for reversing effect of oral anticoagulants; increased allergy risk especially if prior exposure; exposure to protamine insulin; fish allergy; infertile, vasectomised men; rapid admin; prolonged procedures, repeated doses (monitor clotting parameters); excessive dose; pregnancy, lactation,

children ("MIMS Online," 2012). If bleeding is continues, fresh frozen plasma or fresh whole blood should be given.

Procedure

“Protamine Sulfate Injection should be administered by slow intravenous injection over a period of about ten minutes (do not exceed a total dose of 50mg) ("MIMS Online," 2012; UK Renal Pharmacy Group, 2010).

The dose is dependent on the amount of heparin to be neutralised. Protamine sulfate 1 mg will usually neutralise mucous heparin 100 International Units or lung heparin 80 units. Since heparin is being continuously excreted, the dose of protamine sulfate should be reduced if more than 15 minutes have elapsed since the heparin injection. Ideally, the dose required to neutralise the action of heparin should be calculated from the results of determinations of the amount required to produce an acceptable blood clotting time in the patient. In gross excess, protamine itself acts as an anticoagulant” ("MIMS Online," 2012).

1. Estimate the amount of heparin the patient received during the last 2 hours of dialysis and calculate the exact amount of protamines required to neutralise the heparin (1 mg per 100 unit of heparin). Give 50% of the estimated dose.
2. Do not exceed a total dose of 50 mg of protamine sulphate (UK Renal Pharmacy Group, 2010).
3. May be used topically to stop bleeding fistulae (UK Renal Pharmacy Group, 2010).

References

MIMS Online. (2012). Retrieved 07/09/2012

UK Renal Pharmacy Group. (2010). *The Renal Drug Handbook* (Third ed.). United Kingdom: Radcliffe Publishing Ltd.