

Medication Alert

Low Molecular Weight Heparin Treatment in Renal Impairment

Alert 5 January 2008

For the attention of : DHB Pharmacy & Therapeutic Committee Chairs or DHB Medicines Committee Chairs
For action by : Chief Medical Officers, Chief Pharmacists, Clinical Leaders of PHOs
For information to : Medicines Adverse Reaction Committee, Medsafe

Recommended Action

- Dose guidelines for low molecular weight heparin (LMWH) in renal impairment should be developed and implemented in all DHB's and should include the following:
 - i. All patients wherever possible should be weighed prior to commencing LMWH therapy
 - ii. Before treatment with LMWH is commenced a patient's creatinine clearance (CrCl) should be estimated using the Cockcroft and Gault formula. Alternatively the creatinine clearance calculated by the laboratory (using MDRD) can be used but evidence for using this method to calculate dose reductions is currently lacking
 - iii. All patients should receive an initial standard dose of LMWH so that an effective concentration is achieved rapidly
- All staff prescribing, administering or dispensing LMWH should be aware of the risk of haemorrhage in patients with renal impairment
- Anti-Xa monitoring is recommended for LMWH but is not routinely available and therefore cannot be considered routine practice. Anti-Xa monitoring is desirable if treatment is prolonged. If anti-Xa monitoring is performed the recommended target range for treatment is 0.5 to 1.2 international units/ml

Dosing strategies in renal impairment:

- **Enoxaparin** treatment dose in renal impairment — there are two different strategies available:

Following one standard dose and when CrCl is less than 30ml/min

1mg/kg once daily

Or

0.66mg/kg twice daily*

* based on a recent pharmacokinetic study which measured anti-Xa activity in patients with renal impairment treated with enoxaparin—Hulot et al. Clin Pharmacol Ther 2005; 77:542

- **Other low molecular weight heparins treatment dose** in renal impairment — comparable dose reductions should be made following one standard dose
- **Unfractionated Heparin** — alternatively consider the use of unfractionated heparin in patients with renal impairment

Purpose of this alert

- To highlight the risks of prescribing standard doses of LMWH and to provide guidelines on the dose adjustment of LMWH in patients with renal impairment

Background to this Safe Use of Medicines Alert

- There have been several reports in New Zealand of life threatening haemorrhage in patients with impaired renal function who were prescribed standard doses of LMWH

Definition

- LMWH is predominantly renally cleared and accumulates in patients with impaired renal function. When standard doses of LMWH are used in patients with renal impairment there is an increased risk of bleeding

For further action by Safe and Quality Use of Medicines Group

- Inform Medsafe and medicine manufacturers about the dosage recommendations in the alert that differ from the product data sheet

For an electronic version of this alert download from the website, www.safeuseofmedicines.co.nz or contact Beth Loe, Beth.Loe@waitematadhb.govt.nz

These recommendations are based on a review of the currently available information in order to assist practitioners. The recommendations are general guidelines only and are not intended to be a substitute for individual clinical decision making in specific cases

If you require any further information or wish to provide feedback on this alert, please go to www.safeuseofmedicines.co.nz