Medication Alert

Low Molecular Weight Heparin Treatment in Renal Impairment

Alert 5 (Primary Care Edition) November 2009

For the attention of : College of General Practitioners, Pharmaceutical Society, Pharmacy Council, Nursing Council, NZ Nurses Organisations
For action by : Clinical Leaders of PHOs
For information to : Clinical Facilitators in PHOs

Recommended Action

- Dose guidelines for low molecular weight heparin (LMWH) in renal impairment should be developed and implemented in all PHO'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 (can be calculated on some practice management systems). The estimated glomerular filtration rate (e GFR) routinely provided by most laboratories can be used as an indicator of renal impairment but the CrCl equation should guide dosage of LMWH when renal impairment is indicated. On the current evidence the eGFR should definitely not replace CrCl for people at the extremes of weight, during pregnancy, children under 18 years of age and amputees
iii. All patients should receive an initial standard dose of LMWH so that an effective concentration is achieved rapidly

- All health professionals 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[1]

- **Other low molecular weight heparins treatment dose** in renal impairment — comparable dose reductions should be made following one standard dose

1. 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

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

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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 feed-back on this alert, please go to www.safeuseofmedicines.co.nz