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| Renal Directorate Guidelines  Royal Infirmary of Edinburgh |

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**Enoxaparin to maintain patency of a haemodialysis circuit**

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| **Indication and additional Information** | Prevention of clotting of the extracorporeal circuit in patients on haemodialysis. |
| **Criteria for treatment** | Receiving haemodialysis and no contra-indications to anticoagulant therapy. |
| **Dosage and administration** | Adjust dose according to patient’s target (“dry”) weight. Administer into the arterial line of the circuit at the beginning of the dialysis session.   |  |  | | --- | --- | | **Target Weight** | **Enoxaparin Dose** | | Up to 60 kg | 20mg (2000iu) | | Over 60 kg | 40mg (4000iu) |   • Consider lower dose for planned haemodialysis treatment of less than four hours.  **For patients who experience clotting:**  • increase by 20mg for the next dialysis session (up to maximum 40mg)  • if already receiving 40mg then consider a further dose of 20mg at the mid-point of the dialysis session or 60mg at the start of treatment.  **For patients who have prolonged bleeding from the needle site post dialysis**:  • reduce dose by 20mg for the next dialysis session |
| **Monitoring Antifactor-Xa levels** | Routine anti-Xa monitoring is not necessary.  If the dose of enoxaparin is increased to 60mg a pre-dose anti-factor Xa level should be taken on the 4th dose of enoxaparin to check for accumulation.  Level should be <0.2units/ml |
| **Contraindications** | • Systemic anticoagulation (e.g. with warfarin)  • 24 hrs before or after invasive procedures including surgery  • Hypersensitivity to heparin or to LMWHs  • Haemophilia and other haemorrhagic disorders  • Profound thrombocytopenia  • Recent cerebral haemorrhage  • Severe liver disease  • Acute peptic ulceration |
| **Side Effects** | * Skin rashes (and minor bruising at injection site) * Systemic allergic reaction * Abnormal LFTs (raised transaminase) * Excessive bleeding * Thrombocytopenia * Skin necrosis * Hyperkalaemia |
| **Reversal** | If severe bleeding occurs during or within 2 hours of completing a dialysis session with enoxaparin consider the use of protamine sulphate as a reversal agent. This should be discussed with haematology. |