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| Renal Directorate Guidelines  Royal Infirmary of Edinburgh |

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**Dalteparin 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 port at the start of dialysis.   |  |  | | --- | --- | | **Target Weight** | **Dalteparin Dose** | | under 65 kg | 2500 units | | 65 – 90 kg | 5000 units | | over 90 kg | 7500 units |   • Consider lower dose for planned haemodialysis treatment of less than four hours.  **For patients who experience clotting:**  • increase by 2500 units for the next dialysis session (up to maximum 7500 units)  • if already receiving 7500 units then consider a further dose of 2500 units at the mid-point of the dialysis session  **For patients who have prolonged bleeding from the needle site post dialysis**:  • reduce dose by 2500 units for the next dialysis session |
| **Monitoring Xa levels** | Routine anti-Xa monitoring is not necessary. Consider monitoring if there are extremes of body weight or persistent clotting or prolonged bleeding.  The half-life of elimination of anti Xa activity is approximately 2 hours with intravenous dosing in patients with normal renal function but around 5 hours in haemodialysis patients. Anti-Xa activity is therefore measured at one hour and 4 hours post Dalteparin administration at the start of a dialysis sessions.  Anti Xa activity level should be between 0.4 to 0.7units/ml at 1 hour and less than 0.4units/ml at 4 hours. If the anti-Xa level is outwith the target range, discuss with the medical team (renal registrar/renal consultant) regarding a dose change of dalteparin. |
| **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  • Excessive bleeding  • Thrombocytopenia  • Skin necrosis  • Hyperkalaemia |
| **Reversal** | If severe bleeding occurs during or within 2 hour of completing a dialysis session with dalteparin consider the use of protamine sulphate as a reversal agent for dalteparin. This should be discussed with haematology. |