

Anticoagulation in patients with heparin-induced thrombocytopenia (HIT) who are on haemodialysis

Custodian/Review Officer: Executive Officer, Clinical Access and Redesign Unit

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Approving Officer

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Accreditation References:

EQulP and other criteria and standards

1. Purpose

This guideline provides recommendations regarding best practice for anticoagulation in patients with HIT who are on haemodialysis. This guideline is to prevent clotting in the haemodialysis circuit during haemodialysis.

2. Scope

This guideline provides information for all Queensland Health employees (permanent, temporary and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants and volunteers).

3. Related documents

Policy and Standard/s:

- Queensland Health Clinical Policy Network

4. Guideline for anticoagulation in patients with HIT who are on haemodialysis

Danaparoid is a parenteral anticoagulant which can be used in haemodialysis patients with HIT to prevent thrombosis. Danaparoid is used for prophylaxis of deep vein thrombosis (DVT) and pulmonary embolism (PE), in patients requiring parenteral anticoagulation for HIT. Danaparoid is a suitable anticoagulant for haemodialysis. Danaparoid may enhance the effects of oral anticoagulant and may therefore increase the risk of bleeding if the patient is already taking another anticoagulant. Patients who are already on oral anticoagulants such as warfarin or antiplatelet agents such as aspirin and/or clopidogrel need to be on danaparoid to prevent clotting in the haemodialysis circuit.

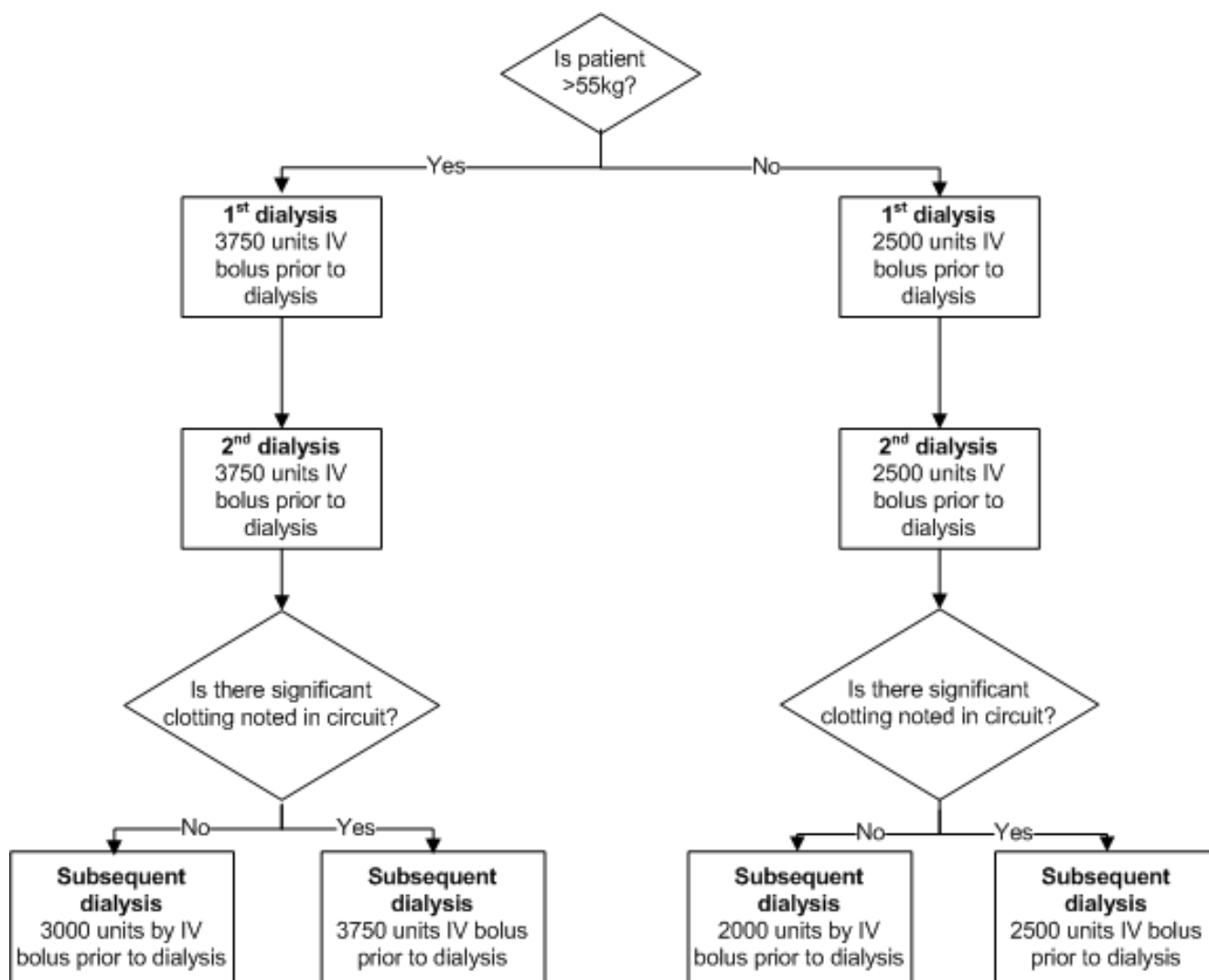
Danaparoid can accumulate early with treatment so we

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suggest measuring factor Xa levels after three dialysis treatments or especially if abnormal bruising or bleeding is clinically evident. Factor Xa levels are not measured ubiquitously so despite this impracticality, it may be still prudent to have a level checked by sending to the nearest site where testing is available.

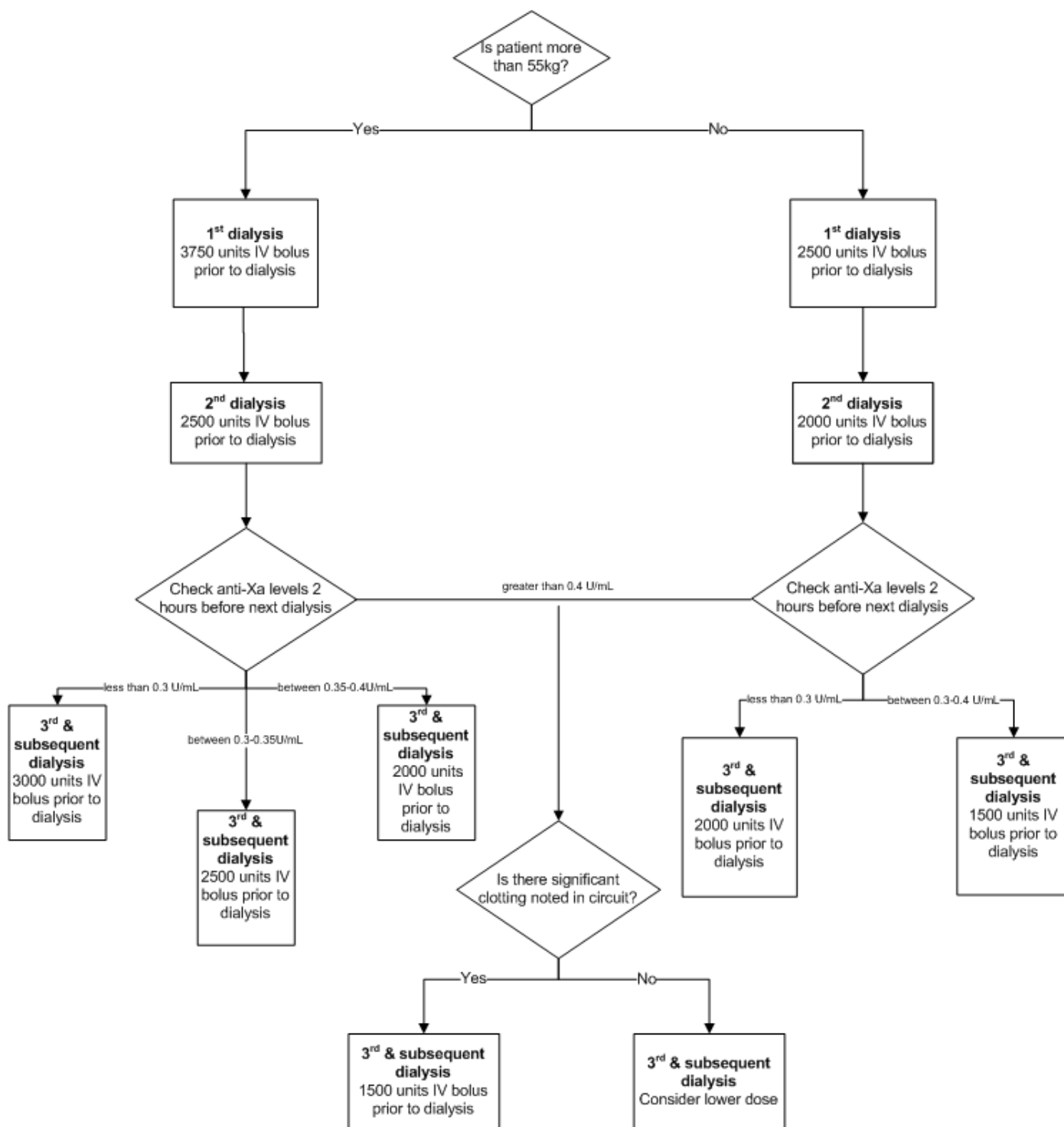
The goal is to use the smallest dose that achieves therapeutic goal to lessen the risk of complications. There is no evidence to support checking levels on a regular basis but where clinically appropriate, for example if clotting persistently occurs despite increasing doses or when any unexpected bleeding occurs, levels should be checked.

Management of danaparoid in patients with HIT who are dialysing 2 or 3 times per week:



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Management of danaparoid in patients with HIT who are dialysing every day:



If there is ongoing clotting / fibrin threads on a dose of 3750 units, use the lowest dose at which fibrin threads do not occur. Seek specialist advice from a haematologist and measure factor Xa levels at regular intervals.

If the patient is unable to take danaparoid or danaparoid is unavailable, seek specialist advice regarding suitable alternatives from a haematologist.

5. Definition of Terms

Definitions of key terms are provided below.

Term	Definition / Explanation / Details	Source
Anticoagulation	The process of hindering the clotting of blood especially by treatment with an anticoagulant	MedlinePlus
Deep vein thrombosis (DVT)	A condition marked by the formation of a thrombus within a deep vein (as of the leg or pelvis) that may be asymptomatic or be accompanied by symptoms (as swelling and pain) and that is potentially life threatening if dislodgment of the thrombus results in pulmonary embolism	MedlinePlus
Factor X	A coagulation factor, a substance in blood essential to the normal clotting process. Production of factor X takes place in the liver and requires vitamin K. The gene for factor X is located on chromosome 13 and is in band 13q34.	MedicineNet.com
Haemodialysis	A medical procedure that uses a special machine (a dialysis machine) to filter waste products from the blood and to restore normal constituents to it. This shuffling of multiple substances is accomplished by virtue of the differences in the rates of their diffusion through a semipermeable membrane (a dialysis membrane).	MedicineNet.com
Heparin-induced thrombocytopenia (HIT)	Low blood platelet count as a result of the medication heparin. Heparin is used to treat and prevent abnormal blood clotting. Heparin-induced thrombocytopenia can be mild or serious and fatal.	MedicineNet.com
Pulmonary embolism (PE)	Embolism of a pulmonary artery or one of its branches that is produced by foreign matter and most often a blood clot originating in a vein of the leg or pelvis and that is marked by laboured breathing, chest pain, fainting, rapid heart rate, cyanosis, shock, and sometimes death	MedlinePlus

6. References and Suggested Reading

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7. Consultation (optional)

Key stakeholders (position and business area) who reviewed this version are:

- Statewide Renal Clinical Network
- Statewide Intensive Care Clinical Network
- Medication Services Queensland
- Directors of Pharmacy Services Advisory Committee

8. Guideline Revision and Approval History

Version No.	Modified by	Amendments authorised by	Approved by