Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

CUH
Ospidéal Ollscoile Chorcaí
Cork University Hospital

AFFIX ADDRESSOGRAPH HERE PATIENT NAME: ..... CONSULTANT: ..... WARD:		**INTRAVENOUS (IV) UNFRACTIONATED HEPARIN (UFH) FOR THERAPEUTIC ANTICOAGULATION**: PRESCRIBING, ADMINISTRATION AND MONITORING RECORD**
Date of Birth	MRN	**CHECK ALLERGY STATUS** Ensure record of Unfractionated Heparin Chart is documented on **standard hospital MPAR**

Prescribing, Administration and Monitoring Guidance

Prior to Prescribing of Unfractionated Heparin (UFH) for Therapeutic Anticoagulation
Review baseline APTT ratio, coagulation screen, FBC, U&Es and LFTs before starting UFH. Refer to Haematology Team:

- If baseline INR >1.5 and the patient is not on warfarin
- If patient has thrombocytopenia (e.g. platelets < 75 x 10^9/ L)

Target APTT Ratio

- The standard therapeutic range for UFH in CUH is an APTT ratio **2.0–2.5**
- To use a target range other than APTT ratio of **2.0–2.5** a different dose adjustment table must be prescribed

Loading Dose: See **STEP 1** for guidance and examples of when a loading dose may not be indicated.

Maintenance Dose: Maintenance infusion should be started immediately after loading dose (if indicated). See **STEP 2** for guidance.

Monitoring of APTT Ratio and Platelets

- Check APTT ratio approximately **6 hours after starting UFH maintenance infusion**, then adjust rate to achieve an APTT ratio **2.0–2.5** using the **dose adjustment table** (See **STEP 3** page 2). Maintain the changed rate until next APTT ratio.
- Check APTT ratio approximately **6 hours after each dose change.** If APTT ratio is very high more frequent measurements are advised.
- Exercise caution with renal/ hepatic patients as patients will be at a higher risk of bleeding.
- Monitor patients for signs of Heparin Induced Thrombocytopenia (HIT) e.g.50% reduction count of platelets, thrombosis or skin necrosis. Refer to Haematology Team.

STEP 1 Prescribe loading dose based on baseline APTT ratio

Prepare using: 1000 units /ml UFH (5000 units /5 ml vial)

Baseline APTT ratio	Administer IV loading dose over 5 minutes as a single dose, then refer to Step 2 for UFH maintenance infusion rate (ml/hour)	
	units	ml (1000 units/ ml)
≤1.5	5000 units	5ml
1.6-1.9	2500 units	2.5ml
≥ 2.0	Heparin is contraindicated contact Haematology Team	

For patients with a high risk of bleeding, a loading dose may not be required. For example:

- patients that received heparin in the previous 6 hrs
- post stroke
- elderly>70years
- creatinine clearance <30ml/min
- low body weight

A revised APTT target ratio may be required if there is a high risk of bleeding please contact Haematology Team.

Prescribing Record				Preparation Record			
Date	**Intravenous Heparin Dose**	**Prescriber Signature**	**Prescriber MCN/ NMBI**	**Prepared By**	**Checked By**	**Start Time**	**Finish Time**
/ /	_____ units over 5 minutes					:	:
/ /	_____ units over 5 minutes					:	:

If UFH loading dose is **NOT** to be administered, please complete	Date: / /	Signature: _____	MCN: _____

NOTE: Vascular Team may prescribe a non-standard dose of UFH post vascular intervention (e.g. angioplasty) which is not adjusted according to APTT ratio. This regimen is prescribed on the regular MPAR.

STEP 2 For all patients, start IV UFH maintenance infusion at the rate of 1000 units/ hour (2 ml/hour)

To prepare the UFH 25000 units/50ml (500 units/ml) maintenance infusion:

Draw up 25ml of UFH 1000 units/ ml in a syringe(use five vials of 5000 units/5ml) and add 25ml of 0.9% sodium chloride to give a concentration of 500 units/ml. Administer UFH by syringe pump.
On the Perfusor CUH Drug Library select the file Heparin 25000 (Hep cvvh). Change UFH infusion and giving set every 24 hours.

Prescribing Record 25000 units UFH in 50 ml						Preparation Record 25000 units UFH in 50 ml			
Date	Time	APTT Ratio	Intravenous Infusion Rate	Prescriber Signature	Prescriber MNC/NMBI	Prepared By	Checked By	Start Time	Time to check next APTT ratio
/	:		1000 units/ hour 2 ml/ hour					:	:

STEP 3 Adjust IV UFH maintenance infusion rate based on APTT ratio

Please adjust rate according to measured APTT ratio.

APTT ratio	Suggested actions and changes in infusion rate	Suggested time for repeat APTT ratio
≤1.5	• Increase by 400 units/ hour (= increase by 0.8ml/ hour) and • Consider IV bolus dose of 5000 units (refer to STEP 1) and if APTT ratio remains ≤1.5 despite this action consult Haematology Team	**Re-check after 6 hours**
1.6-1.9	• Increase by 200 units/hour (= increase by 0.4 ml/ hour) and • Consider IV bolus dose of 2500 units (refer to STEP 1)	**Re-check after 6 hours**
2.0-2.5	**No change in infusion rate**	**Re-check after 6 hours**
2.6-3.0	Reduce by 100 units/hour (= reduce by 0.2 ml/ hour)	**Re-check after 6 hours**
3.1-4.0	Stop for **30 minutes**. Reduce by 200 units/hour (= reduce by 0.4 ml/ hour)	**Re-check after 6 hours**
4.1-5.0	Stop for **one hour**. Reduce by 300 units/hour (= reduce by 0.6ml/hour)	**Re-check after 6 hours**
>5.0	• Stop for **one hour** and contact Haematology Team • Reduce by 500 units/hour (= **reduce by 1ml/hour)**	**Re-check after 2 hours**

*****MAINTAIN THE CHANGED RATE UNTIL APTT RATIO IS CHECKED AGAIN*****

Date	Time	APTT Ratio	Intravenous Infusion Rate	Rate Adjusted By	New Infusion Prepared By (As applicable. Replace every 24hrs)	Checked By	Start Time	Time to check next APTT ratio
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	:
/	:		______ units/hour ______ ml/hour				:	: