

# The care of patients with fractured hip

## Treatment guideline

Produced by hip fracture mortality action group – February 2015

### **Introduction.**

In march 2014 the National hip fracture database, anaesthesia sprint audit of practice (ASAP) published advice based upon the outcome data for 17,000 patients with hip fracture.

This guideline seeks to describe the standards outlined on the ASAP in the context of the local arrangements for the care of these patients. In addition, further advice has been included based upon the experience of senior local clinicians.

The goal of this document is to help focus treatment priorities and in particular to assist less experienced staff to make well informed clinical decisions about care based upon clinical evidence and expert opinion.

Clinical treatment should be based upon the needs of an individual patient. This guideline is not intended as a dogmatic protocol.

### **Pre – operative care**

*Post operative hypotension is a significant problem in this group of patients.* Admitting staff should consider omitting routine anti-hypertensives pre operatively. Beta blockers should not be omitted, and routine drugs should not be withheld where preoperative hypertension becomes a significant problem.

In all but exceptional cases, all patients with a Hb. < 10 g/dl. should be transfused 1- 2 units as soon as possible pre-operatively. Only in exceptional cases should surgery be delayed to await this transfusion.

Uncontrolled Atrial fibrillation (> rate of 90) should be urgently controlled with iv B blocker or digoxin, please seek urgent advice on admission.

To facilitate effective pre-operative assessment and consenting, the Nottingham hip fracture score should be documented by the trauma nurse for each patient. (age, gender, Hb, confusion, institutionalisation, co-morbidities, cancer).

Patients normally treated with anticoagulation should have this corrected on admission according to the flow diagram in appendix one. All patients requiring vitamin K to reverse warfarin treatment should receive it before they leave the emergency department.

### **Resuscitation status.**

Resuscitation status should be routinely discussed as part of the admission process. Patients may have strong views for or against resuscitation. All patients with capacity should be consulted.

Where patients lack capacity to consent, operative risk should routinely be discussed with next of kin. Resuscitation status should routinely be part of this discussion.

Where resuscitation status has not been discussed pre-operatively, it is reasonable for the anaesthetist to include this discussion as part of the pre-operative assessment. For patients without capacity, a call to the next of kin to discuss risk and resuscitation status is good practice. Any resuscitation decision made by the anaesthetic team should be reviewed by the orthogeriatric consultant at the first opportunity.

Where the staff managing a patient do not reach consensus regarding the need for discussion/ agreement of DNAR status, surgery should not be delayed.

Resuscitation status should be routinely discussed at the theatre team huddle, and for those patients with this outstanding a clear plan made as to who will undertake this, and when it will be done.

Where consensus cannot be reached with regards to a DNAR decision / discussion, the patients should remain FOR resuscitation. Documentation of this position should be entered in the case notes as evidence that resuscitation status has been considered.

For patients who lack capacity, surgeon or anaesthetist should contact next of kin immediately after surgery, to offer an update, and to ask about resuscitation wishes.

All patients leaving theatre recovery should have either have a documented resuscitation decision, or a clear plan as to when this will be undertaken and by whom.

### **Operative care**

Patients should be anaesthetised by a consultant or specialist with similar clinical experience. Only very senior trainees should undertake these cases unsupervised.

Spinal anaesthetics should be administered using low volume spinal anaesthesia, for example, hyperbaric bupivacaine (< 2ml) with the patient positioned laterally (bad hip down).

Low dose spinal anaesthesia significantly reduces post operative hypotension and therefore risk, but requires that surgery is carried out in a timely fashion. Trainee surgeons should be adequately supervised to ensure this is delivered. Explicit discussion in the pre theatre briefing should make clear that timely surgery is required with spinal anaesthesia.

Co-administration of intra-thecal opioids should be restricted to fentanyl

Inhalational induction is associated with less hypotension than intravenous induction and should be considered for the induction of general anaesthesia.

Neuraxial and general anaesthesia should not be combined

ALL patients (GA or spinal) should receive local anaesthesia. Reduced analgesia requirements help avoid hypotension and delirium. Local anaesthesia can be in the form of a fascia iliaca block, or 'ERAS style' high volume infiltration by the surgeon.

Intra-operative hypotension should not be tolerated. BP should be maintained within 20% of baseline, and greater than 100 mmHg at all times. Pressors should routinely be drawn up for rapid administration.

Bone cement implantation syndrome is common after reaming or cement insertion. A clear warning, 'cement going in' from the surgical team facilitates close monitoring for hypoxemia, hypotension or cardiovascular collapse.

### **Recovery**

Hypotension is a significant risk post operatively. This is more effectively treated in theatre recovery than it can be on the ward.

No ephedrine or aramine must have been administered for at least 30 minutes prior to BP assessment for discharge.

Patients must remain in recovery until blood pressure returns to greater than 110 systolic, (or to at least 80 % of pre operative blood pressure) consistently for a minimum of 15 minutes.

All patients must have a haemocue measured in theatre recovery, and the result reviewed by the anaesthetist responsible for the case.

### **Post op ward care.**

Post op ward care of these complex patients requires joint care between ortho-geriatrics and orthopaedics. Junior staff in both orthopaedics and medicine will be involved in their care, but should never be left to manage without senior support. Where senior advice is required, and middle grade support are too busy to attend, consultant advice should be sought from the most appropriate specialty.

## **Appendix 1: NOF anticoagulants & antiplatelet agents**

For patients with metal prosthetic heart valves or patients with VERY high risk of thromboembolic disease, expert advice should be sought.

As soon as the INR reaches 2.0, such patients should have Clexane at treatment dose up to 24hrs before surgery.

**Simple way of knowing if a patient has high risk of thrombosis is patient target INR will be 3.0 – 4.0 rather than 2.0 – 3.0**

This could be any of the

1. Mechanical mitral valve / Old aortic valve
2. Recurrent VTE
3. AFT with CHADS2 5-6]
4. Severe Thrombophilia

| CHADS2 Score    |       |
|-----------------|-------|
| Factors         | Score |
| Cardiac failure | 1     |
| Hypertension    | 1     |
| Age > 75        | 1     |
| Diabetes        | 1     |
| CVA / TIA       | 2     |
| Total           | 6     |

1mg IV Vitamin K or 2mg Vitamin K orally will drop the INR by more than 50% in 24-28hrs

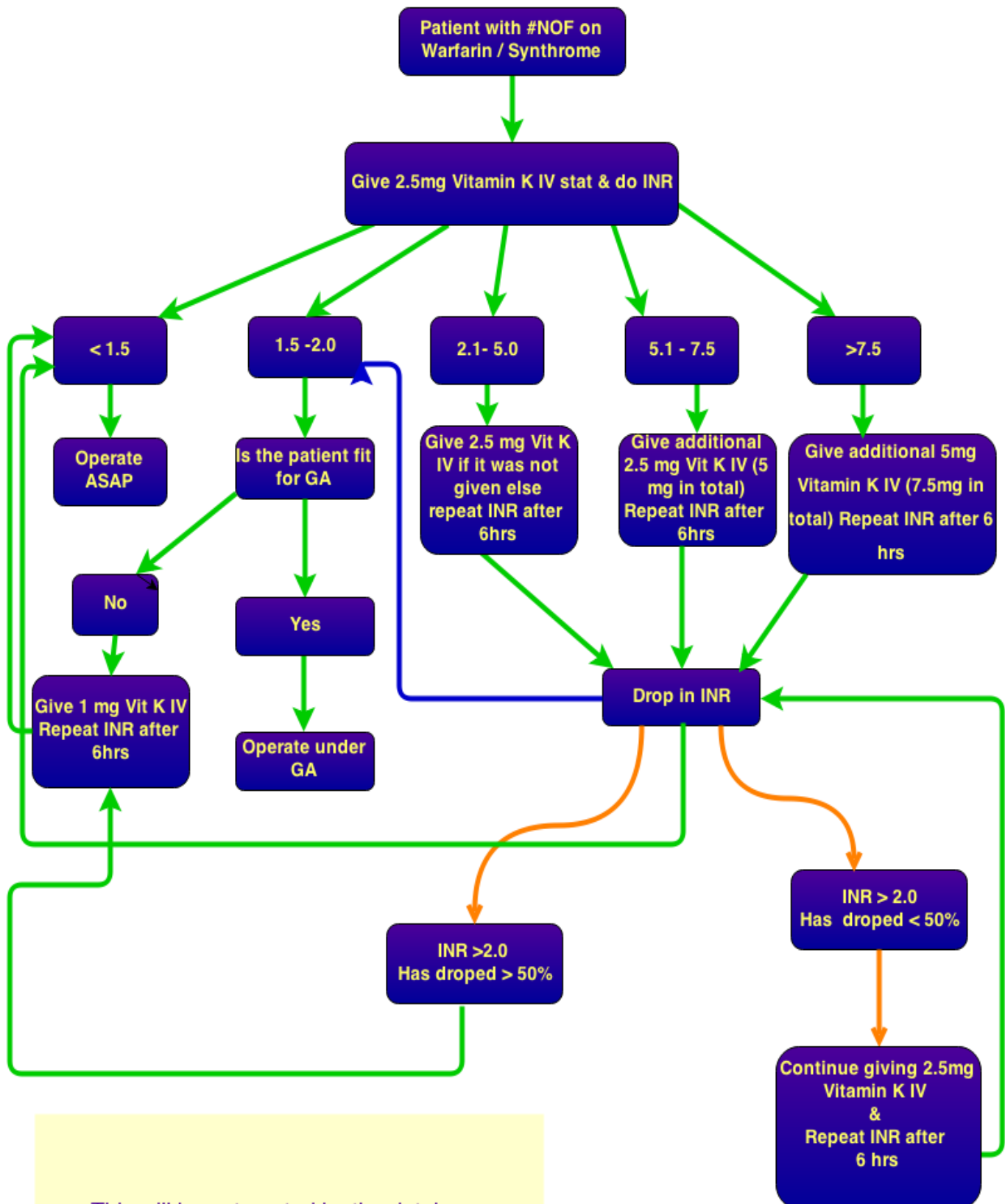
**2.5 -3mg IV Vitamin K or 5-6mg Oral Vitamin K will drop INR to <1.5 in 17+/-2 hrs.**

By doing so we will be able to re-establish oral anticoagulation in 4+/- 1.1 days (2.5 mg)

Giving excessive Vitamin K (>5mg) will create resistance for Warfarin for 2-3weeks.

The anticoagulant data base, available on M4 will generate a treatment plan, based upon the attached flow charts.

2.5 mg of vitamin k should be given for any patient on warfarin, as soon as the diagnosis of fractured neck of femur is made.



This will be automated by the database and is auditable and we can change our practice

### POST OP PLAN

RESTART WARFARIN AT THE PREOP DOSE AND CONTINUE  
PROCEDURE RELATED THROMBOPROPHYLAXIS

#### EXCEPTIONS

##### 1. CONTINUED RISK OF BLEEDING

- a. USE TEDS OR FLOWTRON BOOTS INSTEAD OF  
CLEXANE UPTO 48HRS

##### 2. PATIENT WITH HIGH RISK OF THROMBOSIS

- a. MECHANICAL MITRAL VALVE
- b. OLD AORTIC VALVE
- c. RECURRENT VTE
- d. ANY PATIENT WITH PREOP TARGET INR BETWEEN  
3 – 4

IN THESE PATIENTS USE PROPHYLACTIC DOSE OF CLEXANE  
FOR 48HRS AND THEN SWITCH OVER TO TREATMENT DOSE OF  
CLEXANE UNTILL INR IS IN THERAPEUTIC RANGE FOR  
36-48HRS.

### DOSE OF CLEXANE

#### PROPHYLACTIC DOSE

eGFR > 30      0.5mg /kg  
eGFR < 30 >15   0.25mg/kg

If eGFR <15

Use UFH Heparin 2500 iu sc bd for patient with weight <50 kg  
Use UFH Heparin 5000 iu sc bd for patient > 50 kg  
If the patient weighs more than 120kg contact pharmacy

USE THE ABOVE WITH TEDS

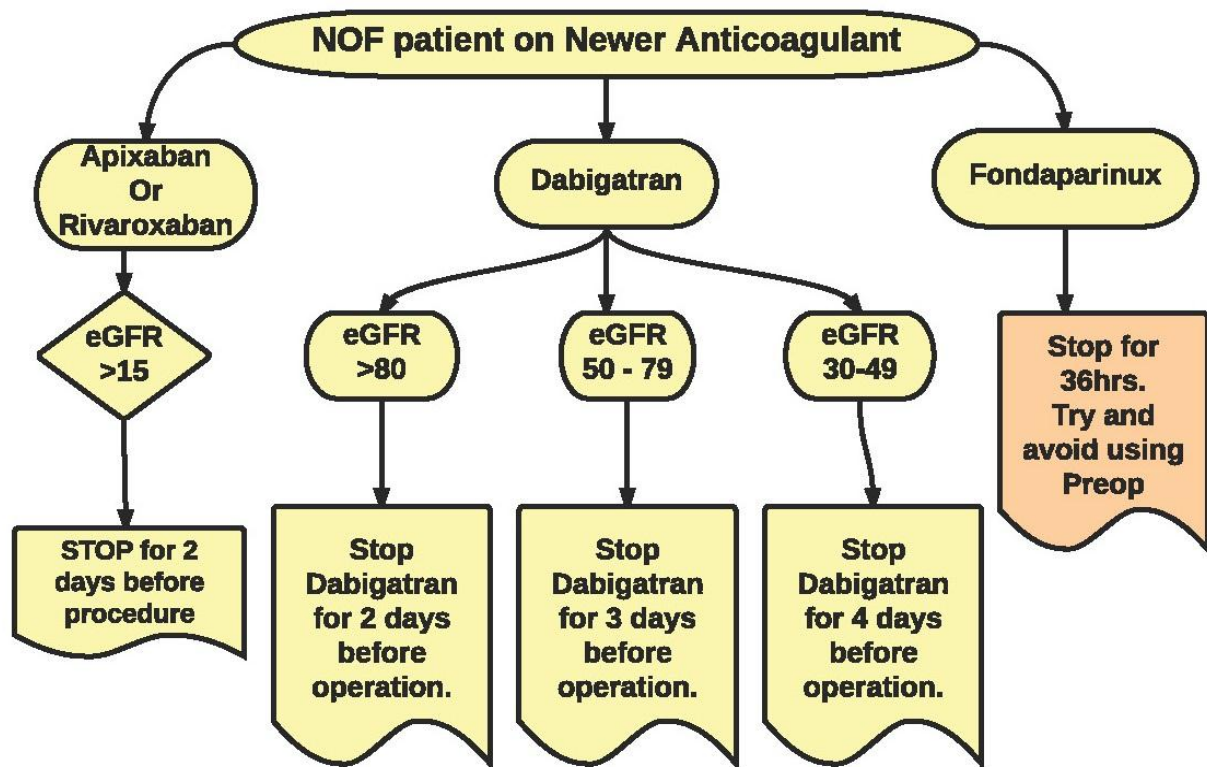
#### TREATMENT DOSE

eGFR > 30      1.5mg /kg  
eGFR < 30 >15   1 mg/kg

If eGFR <15

Use UFH Heparin 2500 iu sc bd for patient with weight <50 kg  
Use UFH Heparin 5000 iu sc bd for patient > 50 kg  
If the patient weighs more than 120kg contact pharmacy

USE THE ABOVE WITH TEDS



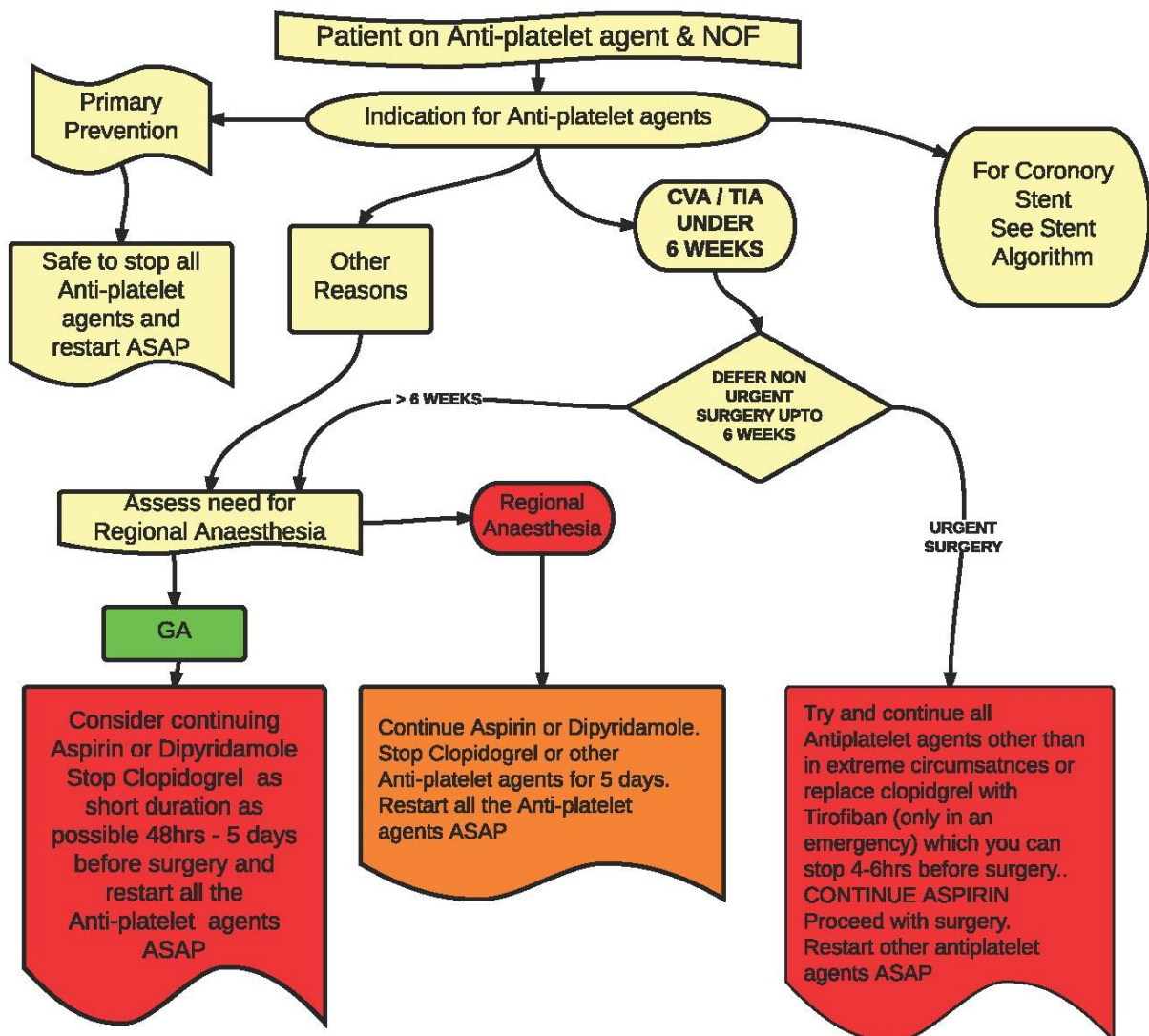
Use routine thromboprophylaxis for surgery up to 48-72hrs & if possible restart NOAC on day 2 or day 3 after surgery or else continue procedure related Clexane thromboprophylaxis until you are able to restart NOACs. Delay if bleeding concerns and reassess every day.

If eGFR is < 30, Dabigatran is contraindicated. If eGFR is < 15, Apixaban & Rivaroxaban are contraindicated. In such situation, please contact Haematologist

Apixaban: <http://www.medicines.org.uk/emc/medicine/27220>  
Rivaroxaban: <http://www.medicines.org.uk/emc/medicine/21265>  
Dabigatran: <http://www.medicines.org.uk/emc/medicine/20760>



**Apply this guideline for patients awaiting complex hip procedures for NOF**  
(eg: Specifically referred to Mr Bamford / Mr O'Connor / Mr Reuben / Mr Ghalliyini.)  
**Don't delay routine DHS / AO Screw or Hemiarthroplasty.**



1. Platelet activity recovers by 10-14% per day of stopping Anti-platelet agent.
2. There is no need to stop any anti-platelet agents for more than 5 days.
3. Each unit of platelet will rise the platelet count by 5000-14000.
4. In an emergency 2 units of platelet before the invasive procedure will ensure reasonable level of platelet activity.
5. Additional use of fibrinolytic agents like 1gm of Tranexamic acid should be considered.



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