POLICY OF ADMINISTRATION AND MANAGEMENT OF PATIENTS ON ANTICOAGULANTS

Barking Havering & Redbridge Hospitals NHS Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are placed at a disadvantage over others.

<table>
<thead>
<tr>
<th>Policy No: 2006/CG/xx</th>
<th>Approved by: Dr Jane Stevens</th>
<th>Review Frequency: xxx</th>
<th>Version 1: 25/07/08</th>
</tr>
</thead>
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<tr>
<td>THIS POLICY IS VERSION 2</td>
<td>Date: 03/07/09</td>
<td>Next Review Due: 03/07/11</td>
<td>Version 2: 03/06/09</td>
</tr>
<tr>
<td>Responsible Officer: Portia Omo-Bare</td>
<td>Advice: Dr Ian Grant</td>
<td>Applicable to Clinical and Non-Clinical Areas: Yes</td>
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</tbody>
</table>
Executives Summary

This policy is intended to make anticoagulant therapy safer throughout the Trust.

Scope of Policy

This policy applies to the prescribing, supply, dispensing, administering and therapeutic monitoring of anti-coagulants throughout all clinical areas within the Trust.

Background

The National Patient Safety Agency (NPSA) issued a patient safety alert concerning the risk to patients from anti-coagulants related incidents and hospital admissions. The purpose of this policy is to help healthcare profession to manage risks associated with anticoagulants and to reduce the chance of patients being harmed. The overall aim of this policy is to make anticoagulant therapy safer.

Behaviour

This policy applies to all healthcare professions involved in the prescribing, supply, dispensing and administering anti-coagulants within the Trust. This policy should be read in conjunction with the Trust Policy for the Care, Custody, Prescribing and Administration of Medicines.

The NPSA has recommended the following actions to be taken by all healthcare professions working with anticoagulants:

- Ensure staff caring for patients on anti-coagulant therapy have the necessary work competences. Any gaps in competence must be addressed through training to ensure that all staff may undertake their duties safely.
- Procedures/guidelines for anticoagulant service are in place to ensure safe practice and staffs are trained in these procedures.
- Perform anti-coagulant service audit using NPSA safety indicators, this audit is as part of the annual medicines management audit programme.
- The audit results should be communicated to Clinical Governance and Drug & Therapeutics Committees so that they can recommend the Trust any necessary safety improvement in anticoagulant service. The anti-coagulant service audit will be accessible to commissioners and
relevant external organisations as part of the commissioning and performance management process.

- Ensure that patients prescribed anticoagulants receive appropriate verbal and written information or printed information pack (yellow booklet) at the start of therapy, at hospital discharge, on the first anticoagulant clinical appointment, and when necessary throughout the course of their treatment.
- Promote safe practice with prescribers and pharmacists to check that patient’s clotting (international normalised ratio, INR) is being monitored regularly and that the INR level is safe before issuing or dispensing repeat prescriptions for oral anticoagulants.
- Promote safe practice for prescribers co-prescribing one or more clinically significant interacting medicines for patients already on oral anticoagulants; to make arrangements for additional INR blood tests, and to inform the anticoagulant service that an interacting medicine has been prescribed. Ensure that those dispensing clinically significant interacting medicines for these patients check that these additional safety precautions have been taken.
- Promote safer use of anticoagulants by standardising the range of oral and injectable anticoagulants available in the Trust.
- Promote the use of written safe practice procedures for the administration of anticoagulants in social care setting. All dose changes should be confirmed in writing by the prescriber. General use of monitored dosage systems for anticoagulants should be minimised as dosage changes in these systems are more difficult.

**Accountability**

The team looking after the patient is accountable. They are responsible for prescribing, monitoring and reviewing the efficacy and adverse effect of anticoagulant therapy.

Pharmacist is responsible for screening the prescription to ensure that the prescription is completed and signed. The pharmacist must check for any contraindication, cautions, interaction and dosage error. Any inappropriate use of anticoagulant should refer to the team looking after the patient for review. Ward pharmacist should provide anticoagulant counselling to patients who are on anticoagulant therapy as soon as feasible or before discharge.

Nurses administering anticoagulants should ensure that the prescription is complete and signed. Before administration the nurse should also check that there are no allergy, contraindication, caution, and interaction. After administration the nurse should check and monitor for side effects and adverse effects and report to the relevant team as appropriate.

The dispensing technician should ensure that the prescription is complete and signed and that the latest INR result and the quantity of anti-coagulant are indicated on the discharge summary letter (also known as TTA). Trained
technician is authorised to counsel patient who is on anticoagulant therapy when requested by the ward pharmacist.

Policy Development

National Patient Safety Agency (NPSA) Alert 18: Actions that can make anticoagulant therapy safer (28th March 2007)
Policy for Care, Custody, Prescribing and Administration of Medicines (Barking Havering and Redbridge Hospital NHS Trust)
Drug and Therapeutics Committee (Barking Havering and Redbridge Hospital NHS Trust)

Distribution and Training Plans

The policy is available on the Trust intranet

Medical staff
A copy of this policy is included in the Induction pack for junior doctors. It is the responsibility of the team to ensure that other medical staffs are made aware of the policy and its contents.

Nursing staff
Matrons and ward mangers are responsible for ensuring that nursing staffs are made aware of the policy and its contents.

Pharmacy Staff

Pharmacists
Pharmacists will be made aware of the policy and its contents as part of their clinical induction.

Pharmacist Technician
Dispensary technicians will be made aware of the policy and its contents as part of the training to supply anticoagulants.

Audit and Review Plan

Compliance with this policy will be audited every 12 months. This may be part of an audit of clinical governance or Trust anticoagulation services. The policy will be reviewed if there are any changes or in 2 years whichever is sooner.
THROMBOSIS RISK FACTOR ASSESSMENT

These recommendations must be implemented taking into account the patient’s individual clinical situation. ALL PATIENTS MUST BE RISK ASSESSED AND REASSESSED AFTER 48/72 HOURS.

(Tick relevant boxes)

RISK FACTOR SCORES

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Intermediate Risk</th>
<th>High Risk</th>
<th>Highest Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age&gt;60</td>
<td>Sickle Cell</td>
<td>2 Active cancer</td>
<td>3 Patient history of DVT/PE</td>
</tr>
<tr>
<td>Obesity BMI&gt;30</td>
<td>Pregnancy/ puerperium</td>
<td>2 Cardiac/ Respiratory Failure</td>
<td>3 Major surgery inc. Orthopaedic lasting &gt;30mins</td>
</tr>
<tr>
<td>Severe varicose veins</td>
<td>Drugs etc. HRT, Tamoxifen,</td>
<td>2 Nephrotic syndrome</td>
<td>3 Major lower limb surgery or paralysis (excluding stroke)</td>
</tr>
<tr>
<td>Immobility Inc plaster cast to lower limbs</td>
<td>Family history of DVT/PE</td>
<td>2 Acute medical illness</td>
<td>3 Abdominal surgery</td>
</tr>
</tbody>
</table>

Total Risk Factor Score_____________________

CONTRAINDICATIONS: Do not prescribe if one or more of the following are present and consider mechanical options e.g. TEDS or early mobilisation. (Tick relevant boxes)

<table>
<thead>
<tr>
<th>Active or high risk of bleeding</th>
<th>Hypersensitivity to heparin</th>
<th>Neuro, spinal or eye surgery</th>
<th>Coagulopathy including therapeutic dose anticoagulant treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension &gt; systolic 200 diastolic 120</td>
<td>Epidural or lumbar puncture in previous 4 hours inc Nerve block</td>
<td>Sever liver or renal disease</td>
<td></td>
</tr>
<tr>
<td>High risk bleeding procedures</td>
<td>Thrombocytopenia platelet count &lt;100</td>
<td>Acute bacterial endocarditis</td>
<td>Acute stroke in previous month</td>
</tr>
</tbody>
</table>

TREATMENT

A total risk factor score of >3 should be considered for prophylactic treatment with enoxaparin (Clexane) s/c 40mg daily until patient is fully mobile or discharged. If creatinine clearance is <30ml/min then reduce dose to 20mg daily.

If a patient is under 40kg and over 130kg or complex cases, advice may be obtained from a consultant haematologist.

Enoxaparin prescribed (tick box) [Yes] [No]

Name of Doctor________________________________ Signature________________________ Date________

Version 2: Approved 03/7/09
INITIATION OF WARFARIN

In line with the National Patient Safety Agency and the British Committee of Safety in Haematology, all patients should have the following blood investigations prior to commencing any form of anticoagulation:

- Full Blood Count
- Clotting Screen
- Urea and Electrolytes
- Liver Function test

If no abnormalities detected then warfarin therapy can commence. Abnormalities should be discussed with senior medical practitioner.

Dosing regimen

Factors to take into account when initiating warfarin:
- Age (>75)
- General health
- Underlying medical conditions i.e. renal, hepatic disease
- Other drug therapies which may interact

High dose regimen:

To be used when none above factors apply.

5mg daily for 4 days – INR check on day 5

Check maintenance dosing algorithm in day 5 for continuation dose for the next seven days. No repeat INR check required (unless indicated by algorithm) Check INR on day 8 unless patient has Out-patient anticoagulation appointment booked.

Low dose regimen:

3mg daily for 5-7 days – INR check on day 6 or 8

If INR in range continue on 3mg daily. If not use out-range INR algorithm.
## Table Of Predicted Maintenance Doses

<table>
<thead>
<tr>
<th>INR</th>
<th>Cumulative dose of 15mg</th>
<th>Cumulative dose of 20mg</th>
<th>Cumulative dose of 25mg</th>
<th>Cumulative dose of 30mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>6mg daily</td>
<td>6.5mg daily</td>
<td>7.5mg daily</td>
<td>8.0mg daily</td>
</tr>
<tr>
<td>1.2</td>
<td>5.5mg daily</td>
<td>6.0mg daily</td>
<td>7.0mg daily</td>
<td>7.5mg daily</td>
</tr>
<tr>
<td>1.4</td>
<td>5.0mg daily</td>
<td>5.5mg daily</td>
<td>6.5mg daily</td>
<td>7.0mg daily</td>
</tr>
<tr>
<td>1.6</td>
<td>4.5mg daily</td>
<td>5.0mg daily</td>
<td>6.0mg daily</td>
<td>6.5mg daily</td>
</tr>
<tr>
<td>1.8</td>
<td>4.0mg daily</td>
<td>4.5mg daily</td>
<td>5.5mg daily</td>
<td>6.0mg daily</td>
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<tr>
<td>2.0</td>
<td>3.5mg daily</td>
<td>4.0mg daily</td>
<td>5.0mg daily</td>
<td>5.5mg daily</td>
</tr>
<tr>
<td>2.2</td>
<td>3.5mg daily</td>
<td>4.0mg daily</td>
<td>4.5mg daily</td>
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<td>2.5</td>
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<td>3.0</td>
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<td>4.0</td>
<td>1.5mg daily</td>
<td>2.0mg daily</td>
<td>3.0mg daily</td>
<td>3.0mg daily</td>
</tr>
<tr>
<td>4.5</td>
<td>1.0mg daily</td>
<td>1.5mg daily</td>
<td>2.5mg daily</td>
<td>2.5mg daily</td>
</tr>
</tbody>
</table>

If INR range 2.0 - 3.0 any reading above 3.5 omit warfarin and test daily until reading is <3.0. Re-start warfarin at 1mg for 7 days and re-test.

Red doses to be **ONLY** used for INR ranges above 3.0. If reading >5.0 Test INR daily until in therapeutic range. Re-start warfarin on 0.5mg to 1.0mg daily for 7 days and re-test.

**Use of chart:**

Calculate the total (cumulative) loading dose given prior to time of INR measurement (to the nearest 5mg).
OUT OF RANGE INR DOSING ALGORITHM
For Non Bleeding Patients
INR RANGE 2.0 – 3.0
With a sub-therapeutic reading.

CHECK FOR A CAUSE
Compliance, general health, change of diet, lifestyle changes or medication alterations (to include all non-prescriptive agents).

ASK THE PATIENT:
Q.: Have any warfarin doses been omitted?
Q: Have there been health, lifestyle or diet changes?
Q: Check memory status (re-compliance).
Q. Have you started / or stopped a medication (to include non-prescriptive agents)?

CHECK PREVIOUS RESULTS ~ THINK BEFORE YOU CHANGE THE DOSE

Unless there is a TEMPORARY, FINISHED reason for reduced INR e.g. Warfarin doses omitted continue on existing dose and monitor at three day intervals.

In high risk cases consider cover with LMWH until INR within range.

<table>
<thead>
<tr>
<th>INR &lt; 1.4</th>
<th>INR 1.5 - 1.7</th>
<th>INR 1.8 - 1.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase current dose by 1mg/1.5mg daily</td>
<td>Increase current dose by 1mg daily</td>
<td>Increase current dose by 0.5mg daily</td>
</tr>
</tbody>
</table>

Re-check INR after three doses

Remember Daily INR checks and dose changes can lead to volatile results,

unless advised by Anticoagulant team or Consultant Haematologist.
OUT OF RANGE INR DOSING ALGORITHM
For Non Bleeding Patients
INR RANGE 2.5 – 3.5
With a sub-therapeutic reading.

CHECK FOR A CAUSE
Compliance, general health, change of diet, lifestyle changes or medication alterations (to include all non-prescriptive agents).

ASK THE PATIENT:

Q.: Have any warfarin doses been omitted?
Q: Have there been health, life style or diet changes?
Q: Check memory status (re-compliance).
Q. Have you started /or stopped a medication (to include non-prescriptive agents)?

CHECK PREVIOUS RESULTS ~ THINK BEFORE YOU CHANGE THE DOSE

Unless there is a TEMPORARY, FINISHED reason for reduced INR e.g. Warfarin doses omitted continue on existing dose and monitor at three day intervals.

In high risk cases consider cover with LMWH until INR within range.

<table>
<thead>
<tr>
<th>INR &lt;1.6</th>
<th>INR 1.7 – 2.0</th>
<th>INR 2.1- 2.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase current dose by 1mg/1.5mg daily</td>
<td>Increase current dose by 1mg daily</td>
<td>Increase current dose by 0.5mg daily.</td>
</tr>
</tbody>
</table>

Re-check INR after three doses

Remember Daily INR checks and dose changes can lead to volatile results,

unless advised by Anticoagulant team or Consultant Haematologist.
OUT OF RANGE INR DOSING ALGORITHM
For Non Bleeding Patients
INR RANGE 2.0 – 3.0
With a high therapeutic reading.

CHECK FOR A CAUSE
Compliance, general health, change of diet, lifestyle changes or medication alterations(to include all non-prescriptive agents).

ASK THE PATIENT:
Q.: Have any warfarin doses been omitted?
Q: Have there been health, lifestyle or diet changes?
Q: Check memory status (re-compliance).
Q. Have you started /or stopped a medication (to include non-prescriptive agents)?

CHECK PREVIOUS RESULTS ~ THINK BEFORE YOU CHANGE THE DOSE

<table>
<thead>
<tr>
<th>INR 3.1- 3.9</th>
<th>INR 4.0 – 4.9</th>
<th>INR 5.0 – 7.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce current dose by 0.5mg to 1.0mg daily</td>
<td>Miss one dose. Then reduce by 1.0mg to 1.5mg daily</td>
<td>Stop warfarin re-check INR daily when INR&lt; 5.0 see previous instruction box.</td>
</tr>
</tbody>
</table>

Re-check INR after three doses unless INR >5.0 then follow instructions above

Remember Daily INR checks and dose changes can lead to volatile results, unless indicated.

ANY READING >8.0 CONTACT CONSULTANT HAEMATOLOGIST
OUT OF RANGE INR DOSING ALGORITHM
For Non Bleeding Patients
INR RANGE 2.5 – 3.5
With a high therapeutic reading.

CHECK FOR A CAUSE
Compliance, general health, change of diet, lifestyle changes or medication alterations (to include all non-prescriptive agents).

ASK THE PATIENT:

Q.: Have any warfarin doses been omitted?
Q: Have there been health, lifestyle or diet changes?
Q: Check memory status (re-compliance).
Q. Have you started /or stopped a medication (to include non-prescriptive agents)?

CHECK PREVIOUS RESULTS ~ THINK BEFORE YOU CHANGE THE DOSE

<table>
<thead>
<tr>
<th>INR 3.6- 4.0</th>
<th>INR 4.1 – 4.9</th>
<th>INR 5.0 – 7.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce current dose by 0.5mg to 1.0mg daily</td>
<td>Miss one dose. Then reduce by 1.0mg to 1.5mg daily</td>
<td>Stop warfarin re-check INR daily when INR&lt; 5.0 see previous instruction box.</td>
</tr>
</tbody>
</table>

Re-check INR after three doses unless INR >5.0 then follow instructions above

Remember Daily INR checks and dose changes can lead to volatile results, unless indicated.

ANY READING >8.0 CONTACT CONSULTANT HAEMATOLOGIST
OUT OF RANGE INR DOSING ALGORITHM
For Non Bleeding Patients
INR RANGE 3.0 – 4.0
With a high therapeutic reading.

CHECK FOR A CAUSE
Compliance, general health, change of diet, lifestyle changes or medication alterations (to include all non-prescriptive agents).

ASK THE PATIENT:

Q.: Have any warfarin doses been omitted?
Q: Have there been health, lifestyle or diet changes?
Q: Check memory status (re-compliance).
Q. Have you started /or stopped a medication (to include non-prescriptive agents)?

CHECK PREVIOUS RESULTS ~ THINK BEFORE YOU CHANGE THE DOSE

<table>
<thead>
<tr>
<th>INR 4.1 - 4.9</th>
<th>INR 5.0 – 5.9</th>
<th>INR 6.0 – 7.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce current dose by 0.5mg to 1.0mg daily</td>
<td>Miss one dose. Then reduce by 1.0mg to 1.5mg daily</td>
<td>Stop warfarin re-check INR daily when INR&lt; 5.0 see previous instruction box.</td>
</tr>
</tbody>
</table>

Re-check INR after three doses unless INR >6.0 then follow instructions above

Remember Daily INR checks and dose changes can lead to volatile results, unless indicated.

ANY READING >8.0 CONTACT CONSULTANT HAEMATOLOGIST
### INR RANGE/DURATION TABLE

<table>
<thead>
<tr>
<th>Condition</th>
<th>Target INR</th>
<th>INR Range</th>
<th>Length of Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary Embolism</td>
<td>2.5</td>
<td>2-3</td>
<td>6 Months</td>
</tr>
<tr>
<td>Proximal Vein Thrombosis</td>
<td>2.5</td>
<td>2-3</td>
<td>6 Months</td>
</tr>
<tr>
<td>Calf Vein Thrombosis</td>
<td>2.5</td>
<td>2-3</td>
<td>3 Months</td>
</tr>
<tr>
<td>Recurrent VTE when warfarin stopped</td>
<td>2.5</td>
<td>2-3</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Recurrent VTE whilst still on warfarin</td>
<td>3.5</td>
<td>3-4</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Symptomatic Inherited Thrombophilia</td>
<td>2.5</td>
<td>2-3</td>
<td>To be decided by Consultant Haematologist</td>
</tr>
<tr>
<td>Atrial Fibrillation (non rheumatic)</td>
<td>2.5</td>
<td>2-3</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Atrial Fibrillation (all other causes)</td>
<td>2.5</td>
<td>2-3</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Cardioversion</td>
<td>2.5</td>
<td>2-3</td>
<td>3 weeks before 4 weeks after</td>
</tr>
<tr>
<td>Mural Thrombosis</td>
<td>2.5</td>
<td>2-3</td>
<td>3 months</td>
</tr>
<tr>
<td>Cardiomyopathy</td>
<td>2.5</td>
<td>2-3</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Mechanical prosthetic heart valves</td>
<td>2.5</td>
<td>2-3</td>
<td>Lifelong</td>
</tr>
<tr>
<td></td>
<td>3.5</td>
<td>3-4</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Bioprosthetic Valves</td>
<td>2.5</td>
<td>2-3</td>
<td>3-6 months</td>
</tr>
<tr>
<td>Recurrent TIA/CVA</td>
<td>2.5</td>
<td>2-3</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Rheumatic valve disease/with Dilated L.A.</td>
<td>2.5</td>
<td>2-3</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Antiphospholipid antibody/ Lupus anticoagulant</td>
<td>3.5</td>
<td>3-4</td>
<td>Lifelong</td>
</tr>
</tbody>
</table>
WARD NURSES PROTOCOL FOR THE
ADMINISTRATION OF ORAL
ANTICOAGULANTS

Registered nurses are independent practitioners and are responsible for safe administration of all medicines. The following guidelines are part of the Trusts policy on oral anticoagulants which highlight key nursing responsibilities.

Yellow Anticoagulant Books:

This is a “hand held” patient document and is the property of your patient. Patients are advised to carry this booklet at all times. You can ask to see the yellow book to check reasons for anticoagulation and to look at the dosage history. It is your patient’s property and should remain with them.

N.B the yellow book will need to be sent to pharmacy with the patients TTA letter.

Patients Commencing Oral Anticoagulants:

Before administering the first dose of oral anticoagulants the nurse should ensure that the following blood tests have been performed: Full Blood Count; Liver Function Test; Urea and Electrolytes and a Clotting Screen. The nurse should ensure that if there are any abnormalities that the medical team are made aware and that where necessary these have been dealt with.

Common Oral Anticoagulants:

Warfarin
Nicoumalone (Acenocoumarol)
Phenindione

Time Oral Anticoagulants are given:

Oral anticoagulants are given as a once a day dose. They should be given at the same time every day or within a two hour window.
If your patient is on oral anticoagulants prior to admission then it is advisable to continue the patients daily routine. Therefore administer the oral anticoagulants at the time they take the drug at home.

On Admission:

If your patient is on oral anticoagulants, ensure they or their carers have brought in the yellow Anticoagulant Book. This should be stored in the patients medication locker.
During Hospital Stay:

If your patient is transferred to another ward, ensure that the yellow anticoagulant book goes with them.

As well as recording daily dosing on the ward drug chart you should also record these in the yellow book.

You should also record the INR readings and any doses omitted.

When recording in the yellow anticoagulant book state “Inpatient” And name of ward.

On Discharge:

New Anticoagulant Patients: Ensure the pharmacist has completed a “New Patient Checklist” and this is placed in the patients Hospital Notes

Ensure that the patient understands the dosage they have to take until their follow-up appointment.

Ensure patient has an Anticoagulant Appointment.

Established Patients’: This should be made in the patients’ regular clinic unless there is a medical reason to change this. Write the date and time in their yellow Anticoagulant Book.

New Anticoagulant Patients’: A fully completed referral form has to be sent by the medical team commencing Oral Anticoagulants. This needs to be posted/faxed to the Anticoagulant Clinic. An appointment will then be sent to the patients’ home. You can ring the department for the appointment details.

N.B. The referring team are responsible for the management of all new anticoagulant patients until the patients first appointment/attendance in the outpatient service.

Referral Forms:

These can be downloaded from the Anticoagulant Pages on the Trust Intranet and/or Web Page.
Administration and monitoring of heparin

In line with the National Patient Safety Agency and the British Committee of Safety in Haematology, all patients should have the following blood investigations prior to commencing any form of anticoagulation:

- Full Blood Count
- Clotting Screen
- Urea and Electrolytes
- Liver Function test

If no abnormalities detected then heparin therapy can commence. Abnormalities should be discussed with senior medical practitioner.

Low Molecular Weight Heparin (LMWH)

The Trust formulary currently has Enoxaparin (Clexane) as the drug of choice in all area of practice. Thromboprophylaxis, treatment of VTE, management of Acute Coronary Syndrome, dosing in renal impairment and guideline for neuraxial procedures in the presence of LMWH can be found in the following document.

Anticoagulants in Pregnancy

Refer to trust intranet for guidance.
WARD NURSES PROTOCOL FOR ADMINISTRATION OF LOW MOLECULAR WEIGHT HEPARIN (LMWH)

Registered nurses are independent practitioners and are responsible for safe administration of all medicines. The following guidelines are part of the Trusts policy on administration of LMWH which highlight key nursing responsibilities.

Before Commencing:

Always ensure that the following blood tests are done prior to first injection:
- Full blood count,
- Urea and Electrolytes,
- Liver function test,
- Clotting Screen.
Remember if there are any abnormalities you should make the medical team aware of these.

*N.B. Renal Impairment where Creatinine clearance is <30ml/min will require specific reduced dose adjustments.*

Enoxaparin (Clexane):
At present this is the LMWH that BHRT uses.
This is a once/twice a day dose, dependent on the reason for use.
These injections should be given on time every twelve/twenty four hours.

Route:
Enoxaparin is a sub-cutaneous injection. It comes in pre-filled syringes.
Ensure you are familiar in the process of administration.

Patients Discharged on LMWH:

If your patient is discharged on Enoxaparin make sure they have:
- Adequate supplies until seen in specialist unit or taken over by community team.
- Sharps disposal box,
- If self administering, they or the carer administering have been taught and observed doing injections. Written information to support this is given.
- Where necessary a community nurse referral has been done.
- G.P. has been informed patient discharged on LMWH.
**Bruising:**

Patients will develop bruises and sometimes small hard lumps under surface of injection site. However if patient develops extensive bruising that spreads around the body, injections should be withheld and a doctor should be informed immediately.

**HIT = Heparin Induced Thrombocytopenia :**

Less common with the use of LMWH however patients should still be monitored for this. It is recommended that platelet counts are performed prior to first dose and then every 2-4 days from days 4 to 14. (Keeling D, Davidson S and Watson H. British Society for Haematology 2006, 133: 259-269).
Administration of Warfarin in Infants Over 6 months, Children and Adolescents

In line with the National Patient Safety Agency and the British Committee of Safety in Haematology, all patients should have the following blood investigations prior to commencing any form of anticoagulation:

- Full Blood Count
- Clotting Screen
- Urea and Electrolytes
- Liver Function test

If no abnormalities detected then warfarin therapy can commence. Abnormalities should be discussed with senior medical practitioner.

Warfarin is not licensed for use in Children.

Dosing regimen

**Day 1:** 200microgram/kg orally

**Day 2-4:**

**INR checks daily**

<table>
<thead>
<tr>
<th>INR</th>
<th>Dose (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 – 1.3</td>
<td>Repeat Day 1 dose</td>
</tr>
<tr>
<td>1.4 – 1.9</td>
<td>50% of day 1 dose</td>
</tr>
<tr>
<td>2.0 – 3.0</td>
<td>50% of day 1 dose</td>
</tr>
<tr>
<td>3.1 – 3.5</td>
<td>24% of day 1 dose</td>
</tr>
<tr>
<td>&gt;3.5</td>
<td>Stop until INR&lt;3.5; restart at 50% of previous dose</td>
</tr>
</tbody>
</table>

**Maintenance Doses from day 5:**
INR checks every 3-5 days until in range. Once in range check every 5-7 days

<table>
<thead>
<tr>
<th>INR</th>
<th>Dose (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 – 1.3</td>
<td>Increase dose by 20%</td>
</tr>
<tr>
<td>1.4 – 1.9</td>
<td>Increase dose by 10%</td>
</tr>
<tr>
<td>2.0 – 3.0</td>
<td>No change to dose</td>
</tr>
<tr>
<td>3.1 – 3.5</td>
<td>Decrease dose by 10%</td>
</tr>
<tr>
<td>&gt;3.5</td>
<td>Stop until INR&lt;3.5; restart at 20% decrease of previous dose</td>
</tr>
</tbody>
</table>

For stable patients INR check every 2-4 weeks
Guidelines for the Management of patients undergoing Elective surgery who are on Oral Anticoagulants.

It must be noted that this paper is a guideline and is for patients undergoing invasive procedures who are already on oral anticoagulants.

This guideline applies to adults who are 18 or above. In the case of a child advice should be obtained from anticoagulant team.

This guideline was assembled using current international data and should be reviewed on an annual basis.

In elective surgery there is not necessarily a need to admit patients when bridging anticoagulant therapy. However there are exceptional cases you may need to.
Patients receiving bridging therapy can be taught to self inject, come to the pre assessment unit or have a district nurse to administer the Low Molecular Weight Heparin (LMWH).

URGENT SURGERY

Invasive procedures on anticoagulated patients should be undertaken electively. This however is not always possible.

It is advised that you always discuss with Consultant Haematologist.

RATIONALE

The management of patients on oral anticoagulants who need surgery will always be a fine balance of:
- Risk of haemorrhage.
- Risk of thrombosis.

In cases where there are other underlying issues the following people should make a collaborative decision:
- Surgeon
- Anaesthetist
- Haematologist

In some exceptional cases where thrombosis risk is particularly high, bridging can be very complex and discussion with the Haematologist is necessary.
ELECTIVE SURGERY

Determining the risk of bleeding:

The risk of bleeding from elected procedure should be assessed.

High Risk Surgery
- Neurosurgery; prostate/bladder surgery; major vascular surgery; renal biopsy; bowel polypectomy.

Moderate Risk Surgery
- Major intra abdominal; intra thoracic surgery; orthopaedic surgery; pacemaker insertion.

Low Risk Surgery
- Cataract surgery; most cutaneous surgery; laparoscopic cholecystectomy; hernia repairs; coronary angiography.

DETERMINING RISK OF THROMBOSIS

Risk of Thrombosis in existing Condition.

Low Risk Conditions.
- Newer mechanical bileaflet aortic valves (ST Jude, Carbiomedics)
- Atrial Fibrillation with no additional risk factors.
- VTE that occurred more than six months prior to the procedure.
- Thrombophilia with no recent or recurrent thrombotic issues. No history of life threatening thrombosis.

Action - No bridging anticoagulation necessary

Moderate Risk Conditions.
- Bileaflet valves and old model aortic valves. (Eg: ball, Bjork-Shiley).
- Atrial fibrillation with > two additional risk factors (e.g.: CVA/TIA (not recent), systemic embolus, left ventricular dysfunction, diabetes, hypertension or age > 75years).
- VTE in previous six months.

Action – No bridging anticoagulation necessary in most circumstances.

High Risk Conditions.
- Mechanical mitral valves and older single aortic valves (e.g. Starr Edwards)
- AF with recent history of CVA/TIA
- AF associated with rheumatic mitral valve disease.
- VTE that has occurred in last month (consider deferring surgery).
- Active cancer.
- Antiphospholipid syndrome.
- Associated major cardio respiratory disease.
Action – Bridging anticoagulation necessary

MANAGEMENT IN RELATION TO RISK OF THROMBOSIS

Low risk of thrombosis.
- Discontinue oral anticoagulants 5 days prior to surgery. Ensure antiplatelet drugs such as aspirin and clopidogrel are also stopped 7 days prior to surgery.
- Check INR day before surgery to ensure INR < 1.5. If it is not then discuss with surgeon and consultant haematologist (consider low dose vitamin K e.g. 2mgs IV).
- Restart oral anticoagulant therapy at pre-operative dose as soon as haemostasis assured. No bridging therapy with LMWH required.

N.B.
Patients can be discharged from hospital once surgically fit. Both LMWH and oral anticoagulant therapy can be managed as out patient. Ensure patient is booked into their normal anticoagulant clinic 5-8 days after restarting pre-operative dose of oral anticoagulant.

High risk of thrombosis and those in whom bridging is required.
- Discontinue oral anticoagulants 5 days prior to surgery. Ensure antiplatelet drugs such as aspirin and clopidogrel 7 days prior to surgery.
- Start therapeutic dose of LMWH 48 hours after discontinuing oral anticoagulants.
- Check INR day before surgery to ensure INR < 1.5. If it is not then discuss surgeon and anticoagulant team (consider low dose vitamin K e.g. 2mgs IV).
- Discontinue LMWH 36 hours prior to surgery.

MANAGEMENT IN THE RISK OF SURGICAL BLEEDING

Post Surgery Low/Moderate Risk Bleeding:
- Start prophylactic dose of LMWH on evening of surgery provided haemostasis assured. If there is no bleeding convert to a therapeutic dose 24-48 hours post surgery.

Post Surgery High Risk Bleeding:
- Delay starting LMWH until 24-48 hours post surgery and then use a prophylactic dose when haemostasis is assured. Convert to therapeutic dose 48-72 hours post surgery as long as there is no significant bleeding.
FOR ALL CASES POST SURGERY

- Restart oral anticoagulant therapy at pre-operative dose as soon as haemostasis assured or patient able to take oral therapy.
- Maintain LMWH and oral anticoagulant overlap until INR within therapeutic range.

N.B.
Patients can be discharged from hospital once surgically fit. LMWH and oral anticoagulant management can be managed as on out patient.

Patients discharged on Oral anticoagulants only:
Ensure patient is booked into their normal anticoagulant clinic 5-8 days after restarting pre-operative dose of oral anticoagulant.

Patients discharged on LMWH and oral anticoagulants:
Ensure that anticoagulant team are aware.

Book patient into a hospital site anticoagulant service 3-4 days after discharge.

Patients can be taught to self inject LMWH or a district nurse can be arranged. When a patient self injects they must be given both verbal and written instruction and a sharps box with advice on how to dispose of this when finished with.

Unusual /Excessive Post Operative Bleeding
Management depends on cause and location of bleeding. All such cases should be discussed with the consultant haematologist.

Patients with renal impairment/failure
It is advised that you speak to the consultant haematologist as un-fractionated heparin (UFH) is recommended over LMWH as the kidneys clear the latter.

Spinal or continuous Epidural analgesia
You should discuss with consultant haematologist regards recommencing anticoagulant therapy.

Matters to take into account when recommencing:
- Was catheter removed directly after surgery?
- Does catheter remain in situ for post surgery analgesia?

Consultant Haematologist recommendation:
• If the catheter is removed directly after surgery anticoagulation can restart 12 hours post surgery.
• Restart of anticoagulation can be delayed for 24 hours if catheter placement traumatic.
• If catheter remains in situ after surgery a prophylactic dose of LMWH may be considered.
• Omit LMWH at least 20 hours prior to catheter removal
• Do not restart Oral anticoagulation until catheter has been removed.

Protein C and S Deficiencies

These patients should never start on more than normal maintenance dose of warfarin. Advice from consultant haematologist is recommended.

In cases that do not always apply exactly to clinical situation it is recommended that you seek necessary advice from a consultant haematologist.

Please remember these are guidelines only.

Anticoagulant team

Contact numbers
• Consultant Haematologists can be contacted via the switchboard.
• Anticoagulant Team – Available Monday to Friday 8.30am until 4.30pm (excluding Bank Holidays).

Clinical Nurse Specialist: Melinda Eames: DECT 6116, Office 2339.

Anticoagulant Sister Queens DECT 6316
Anticoagulant Sister King Georges EXT 8003

This paper was compiled by Melinda Eames, Clinical Nurse Specialist Anticoagulation and DVT Services.

It was verified at all stages by the Trust Consultant Haematologists:

Dr I. Grant.
Dr A. Brownell.
References


Ward discharge of patients on oral anticoagulants

In line with the National Patient Safety Agency and The British committee of Safety in Haematology, patients requiring oral anticoagulants should be discharged from all in-patient areas including A&E using the following guidelines.

- New patients require a fully completed current Trust referral form by a medical practitioner, which can be found on the anticoagulant section of the trust intranet (there is a specific form for AF/cardioversion). Incomplete forms will be returned to point of origin therefore delaying appointment and discharge.

*N.B The referring team are responsible for the management of all new anticoagulant patients until the first appointment/attendance in the outpatient service.

- Existing anticoagulation patients will need an appointment booked approximately 5-7 days after discharge with their existing anticoagulant centre, this could be another hospital or local PCT provider. A copy of the discharge letter must be faxed through to the patient’s anticoagulant service. Failure to do so could lead to a delay in the follow up anticoagulant appointment.

- New patients must be counselled by pharmacist/ technician/ anticoagulant nurse and the “New Patient Checklist” placed in the notes.

- On TTA letter and the patients yellow book the following information must be recorded:
  - Indication
  - Duration of treatment
  - INR Range
  - Dosage
  - Next anticoagulant appointment – date, location, time.

*N.B The completed anticoagulant book needs to be sent to pharmacy with the TTA letter if the pharmacist on the ward has not seen the TTA.

- Where necessary the ward is responsible for booking ambulance service to clinic appointment.

- On discharge nurses must ensure that patient leaves with both anticoagulant tablets and their yellow book. Ensure patient understands discharge dosage and is aware of next anticoagulant appointment.

**N.B. Patients must not be discharged without their anticoagulant therapy and yellow book.**
The details given on this referral form are used to calculate a safe dose of anticoagulation for each patient. It is therefore essential that all sections of this form are completed.

The anticoagulation clinic will not accept patients for anticoagulation unless all details requested below are supplied in full.

An Anticoagulant Clinic Appointment can only be made on receipt of this form by fax to the Anticoagulant Clinic.

**PATIENT’S DEMOGRAPHIC INFORMATION**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname</td>
<td>Mr, Mrs, Miss</td>
</tr>
<tr>
<td>Forenames:</td>
<td>Date of Admission:</td>
</tr>
<tr>
<td>Address:</td>
<td>Ward: KingGeorge/Queens (Please Circle)</td>
</tr>
<tr>
<td>Post code:</td>
<td>Consultant:</td>
</tr>
<tr>
<td>Tel:</td>
<td>Date of birth:</td>
</tr>
<tr>
<td>GP name:</td>
<td>Ambulance Needed YES/NO(Please Circle). Mobility: Walker/Chair/Escort</td>
</tr>
<tr>
<td>GP address:</td>
<td></td>
</tr>
<tr>
<td>Post code: DROP: Telephone number:</td>
<td></td>
</tr>
</tbody>
</table>
PATIENT’S CLINICAL INFORMATION

Reason for Anticoagulation:

<table>
<thead>
<tr>
<th>Duration of warfarin</th>
<th>Months</th>
<th>Years</th>
<th>Lifelong</th>
<th>Target INR</th>
</tr>
</thead>
</table>

COMPLETE FOR AF PATIENTS ONLY

Risk Factors for Stroke for all patients with AF: CHADS 2 SCORE (Please Tick)
- Congestive Heart Failure (1)
- Hypertension (1)
- Age > 75 years (1)
- Diabetes Mellitus (1)
- History of Stroke/TIA (2)

Total Score: ………

COMPLETE FOR ALL PATIENTS

Other Risk Factors: (Please Circle)
- Age 65-74 years
- CAD
- Thyrotoxicosis
- Mitral stenosis
- Prosthetic Heart Valves
- LV dysfunction

Risk factors for Bleeding: (Please Tick)
- Age > 75 years
- Previous Bleeding
- Past history of haemorrhagic stroke
- Liver disease
- Renal Impairment
- Cancer
- Anaemia
- Excess Alcohol

Does this patient have the mental capacity to consent and comply to oral anticoagulant therapy? Please Circle YES / NO

Present Medication (To include non non-prescriptive items): Aspirin Y/N Clopidogrel Y/N

Please indicate whether to stop or continue: ………

Last three INR values

<table>
<thead>
<tr>
<th>Date</th>
<th>INR</th>
<th>Dosage</th>
</tr>
</thead>
</table>

LMWH

Is patient on LMWH? YES/NO

If yes please state:
- Dose:
- Date Commenced:

Referring Consultant:

Requesting Dr:

Bleep No:

Signature:

PREVIOUS ANTICOAGULANT HISTORY (IF APPLICABLE)

Has the patient previously been on Warfarin? Y / N

If YES please state the reason and dates: …………………………

Has the current event required any change in the INR therapeutic range used for this patient: Y / N

Previous INR range: 

New INR range:
Standards for Doctors for Managing Oral Anticoagulation Therapy

1. **On admission:**

   a. *For patients to be initiated on anticoagulants (New patients):*

   Discuss with the patient:
   
   - Indication for anticoagulation therapy, duration of treatment and possible lifestyle changes.
   - Ensure the patient and/or carer has an understanding of the proposed treatment.
   - Refer the patient to their local anticoagulation monitoring service

   b. *For patients admitted whilst on anticoagulants:*

   Obtain a full anticoagulation history by using relevant sources:
   
   - Anticoagulation Therapy Record book ("yellow book")
   - Ask the patient and/or contact the carer or GP.
   - Assess whether further anticoagulation therapy is appropriate.
   - Check patients INR on admission

   c. *For ALL patients:*

   Document in the medical notes and prescription chart:
   
   - Name of anticoagulant
   - Indication for treatment
   - Target INR
   - Usual stable dose* (if previously been on warfarin)
   - Next date INR result is due i.e. monitoring plan
   - Anticoagulation clinic usually attended (ideally should be documented)
2. **During hospital stay:**

Monitor INR as appropriate and prescribe dose according to INR results, taking into consideration the patient’s general health and other interacting medication. All entries should be made in the oral anticoagulant section of the drug chart. Each dose must be initialled and dated. Pharmacy stock ALL the strengths of warfarin i.e. 0.5mg, 1mg, 3mg and 5mg.

3. **Pre-discharge:**

   a. **For New Patients:**

   Refer the patient to their local anticoagulation clinic.

   b. **For ALL patients:**

   Arrange a follow-up appointment with the patient’s anticoagulation clinic.

   Update the patient’s yellow book with the following:

   - INR results and doses for the last week prior to discharge
   - Dose to be taken until next appointment. Dose should be written in mg and the number of tablets of each colour to be taken
   - Next appointment date and time

   Inform the patient of the next clinic appointment and dose to be taken until then.

   Any patients prescribed long-term low molecular weight heparins should have adequate follow-up arranged preferably with their local anticoagulation clinic to monitor their full blood counts, dose and duration of therapy.

4. **Additional Information:**

   - Warfarin tablets dispensed from pharmacy will be labelled as, “Take as directed by your doctor in the yellow book”, unless inappropriate for your patient.
Standards for Pharmacists for Managing Oral Anticoagulation Therapy

1. **On admission:**

   Check if the patient/relative has brought the Anticoagulation Therapy Record Book (“yellow book”). If not, please inquire if it can be brought in.

   Confirm with the yellow book/patient/relative/G.P etc
   - The dose prior to admission
   - Duration of treatment of this dose
   - Next anticoagulant appointment

   Ensure the following information has been prescribed by the doctor on the oral anticoagulant section of the drug chart:
   a) Name of anticoagulant
   b) Indication for therapy
   c) Target INR
   d) The dose has been prescribed and initialled and dated.

   If anticoagulation treatment is being withheld/stopped then document this in the additional information section of the prescription chart.

   Check that an on admission INR result has been requested by the doctors.

2. **During hospital stay:**

   Ensure regular blood tests occur during hospital stay and the INR results are monitored and dosage adjusted as appropriate, taking into consideration the patient’s general health and other interacting medication.

   Advice on dosing can be obtained from the anticoagulant service on ext 3449 or 3550

3. **On discharge:**

   a. **For patients newly initiated on anticoagulants:**

      Provide the patient and/or carer with an Anticoagulation Therapy Record Book (“yellow book”). Endorse this on the drug chart.
Counsel the patient on the oral anticoagulation therapy to be received (refer to warfarin counselling checklist). Endorse the drug chart when this has been completed. File the counselling checklist in the notes.

Ensure the following information has been prescribed by the doctor:

- Patient details have been completed
- Name of anticoagulant
- Indication for therapy
- Target INR

b. For All Patients:

Ensure a follow up appointment has been arranged by the doctor discharging the patient.

Ensure the doctor discharging the patient has dosed the patient’s anticoagulant therapy up until the next clinic appointment.

Ensure the patient’s yellow book has been updated with:

- INR results and doses for the last week prior to discharge where available.
- Dose to be taken till next appointment. Dose should be written in mg and the number of tablets of each colour to take.
- Follow-up appointment date

Endorse the TTA that Anticoagulant book has been seen and updated.

Contact the doctor if any of the above has not been completed. Any queries relating to anticoagulation therapy should be referred to anticoagulant service on ext. 3349 or 3350.

Supply the least number of tablets required to make the dosage required. Supply original packs of warfarin unless individual patient circumstances require otherwise.

4. Additional Information:

- Warfarin tablets dispensed from pharmacy will be labelled as, “Take as directed by your doctor in the yellow book”, unless inappropriate for your patient.
## WARFARIN COUNSELLING RECORD

(To be filed in medical record of patient)

<table>
<thead>
<tr>
<th>Counselling point</th>
<th>Signature</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Use of anticoagulant book and new patient package</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Action, purpose, duration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Indication for therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Expected duration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Tablet, size, dosing, colours and obtaining supplies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 How to take, varied dosing, time factor, action incorrect dosing or missed doses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Monitoring, blood tests, clinics, importance of attendance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Side effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Who to tell? Dentist, pharmacist, doctors and all other healthcare professionals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Other medication including non prescription medicines, herbal, immunisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Diet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Alcohol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Pregnancy</td>
<td></td>
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<tr>
<td>14 Periods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Hospital admission and surgical procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Acute illness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Missed clinic appointments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 Who, how and when to contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 Bleeding and bruising issues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The anticoagulant book must be fully completed prior to discharge including information regarding recent in-patient dosing, discharge dose and follow-up appointment details. For in-patients, it is the responsibility of the discharging doctor to ensure that this occurs.

Counseled by: (Sign and print name): .................................................................
Designation: ..........................................................................................
Patient Signature: ..............................................................................
Guidance on counselling

Where possible please issue the complete Oral Anticoagulant Therapy pack to new patients.

1. Show the patient the Oral Anticoagulant Therapy Record Book and alert card Explain their purpose and the need to carry these at all times including admission to hospital.

2. Warfarin works by slowing down the blood clotting process, thus preventing the development of clots. In the presence of clots allows the body a period of rest from normal clotting which enables the body to naturally disperse the clot.

3. State the indication i.e. atrial fibrillation and explain that a full explanation regarding their specific reasons for anticoagulation from the specialist service.

4. State that the initiating medical team have indicated that the patient will be on warfarin for “x” period of time, however explain the anticoagulant team will review and confirm.

5. Refer to information package. Patients will be supplied with enough warfarin until first anticoagulant appointment.

6. Always take your warfarin at the same time each day. It is best to take it at a time that is suitable for the patient. If patient misses the dose explain they have a two hour window either side of their set time in which to take their tablets. Any missed dose must be recorded in the yellow book. It is not necessary for patients to record each individual dose.

7. Patients need to be informed of the importance of attending anticoagulant appointments and monitoring is via a blood test on every visit, these appointments should not be cancelled unless an emergency situation arises. Monitoring is frequent initially but becomes less frequent as a patient becomes stable. Average time to stable a patient with no acute medical condition is between 1-4 weeks.

8. See page 10 of Oral Anticoagulant Therapy patient information booklet.

9. Inform all healthcare professionals.

10-14 Information is available from Oral Anticoagulant Therapy patient information booklet pages 12-14

15. Patient must inform Doctor/Nurse that taking warfarin tablets, also must inform phlebotomist when blood being taken.

16. Inform anticoagulant clinic of acute illness, as more frequent INR testing maybe required. On discharge from hospital or attendance to A&E inform anticoagulant clinic of this.

17. Patient’s responsibility to keep appointments. Missed appointments could entail a wait of at least a month for further appointments and also could cause in a delay in supply of warfarin tablets.

18. Please refer patient to local information sticker, which has contact details for the anticoagulant clinic.

19. Explain to patient the will bruise and bleed much easier and healing time will be pre-longed. Patients should avoid activities that will increase risk of bruising. Refer to pages 10-11 in the Oral Anticoagulant Therapy patient information booklet.
Atrial Fibrillation and Commencing Oral Anticoagulation

It is not necessary for a patient to be admitted or remain in hospital solely for the initiation of oral anticoagulants.

However all patients should be assessed according to current guidelines and placed on appropriate treatment pathway.

All patients need to be assessed using CHADS 2 score chart.

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Individual Score</th>
<th>Total Score</th>
<th>Risk of Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>0</td>
<td>0</td>
<td>Low</td>
</tr>
<tr>
<td>C – Chronic Heart Failure</td>
<td>1</td>
<td>1</td>
<td>Moderate</td>
</tr>
<tr>
<td>H – Hypertension</td>
<td>1</td>
<td>2</td>
<td>High</td>
</tr>
<tr>
<td>A – Age&gt; 75years</td>
<td>1</td>
<td>3</td>
<td>High</td>
</tr>
<tr>
<td>D – Diabetes Mellitus</td>
<td>1</td>
<td>4</td>
<td>High</td>
</tr>
<tr>
<td>S2 – Stroke or TIA History</td>
<td>2</td>
<td>5 -6</td>
<td>High</td>
</tr>
</tbody>
</table>

Antithrombotic Therapy Key:
- Aspirin
- Warfarin or Aspirin
- Warfarin

Other Factors To Take Into Account (please record on referral form)
- Stroke risk is increased slightly with:
  - Ischaemic Heart disease and
  - Female Gender
  - 65 to 75 age group
  - History of hyperthyroidism

Patients with mitral stenosis or prosthetic valves will require oral anticoagulants.
Commencing Oral Anticoagulants

**Remember this can be done on outpatient basis**

ANTICOAGULATION AS AN IN-PATIENT FOR AF IS NOT NECESSARY AND EXPOSES A PATIENT TO OTHER RISKS OF PROLONGED IN-HOSPITAL STAY. PROMPT OUT-PATIENT WARFARINISATION IS OF BENEFIT TO A PATIENT.

- Ensure that patient is clinically stable and able to understand and manage oral anticoagulants (an assessment of a patient with poor memory must be included in a decision to treat).
- If patient is on Aspirin:
  - **Moderate Risk** – Stop Aspirin as you commence Oral Anticoagulant.
  - **High Risk** - Keep patient on Aspirin until patients’ INR 2.0 or >.
- If patient is not on Aspirin and high risk then consider starting until INR 2.0 or >.
- In onset of Acute Atrial Fibrillation heparin may be started until a full assessment has been done and appropriate antithrombotic therapy commenced.

Please note there is no need to achieve anticoagulation rapidly; a slow loading regimen is safe and achieves therapeutic coagulation in the majority of people within 3 – 4 weeks.

- If patient is hypertensive this must be well controlled before commencing oral anticoagulants.
- Blood tests requested and checked FBC, LFT, U/E, Clotting Screen.
- Where possible (and in most cases) leave starting of oral anticoagulation to the Anticoagulant Clinic. If you wish to commence a patient on warfarin please discuss the indication and risks with a consultant haematologist.
- For an in-patient commence on 5mg Warfarin daily x 4 days or 3mg Warfarin daily x 7 days according to patients’ age health and drug interactions. (Define criteria for discharge from hospital)
• Complete an anticoagulant referral form and send to clinic office at Queens hospital. The current referral form meeting NPSA criteria can be found on the anticoagulant site on either the Trust Intranet or Web pages www.bhrhospitals.nhs.uk

N.B. An incomplete or incorrectly filled form will delay an appointment being made for your patient. All Atrial fibrillation patients should have CHADS2 score completed and if patient not long term and awaiting further investigations then this should be on the form.

The department will question inappropriate referrals so please document all appropriate data.

If you decide to commence anticoagulation then it is your responsibility to educate and inform patient in line with current NPSA guidance. Where can support be obtained from – i.e. pharmacy education

M.E./February 2009

References.


NICE Clinical Guideline number 36, Atrial fibrillation, The Management of atrial fibrillation