Acute Demand Service

WBOP PHO
Western Bay of Plenty
Primary Health Organisation

DVT Management Plan

Management options:
Rivaroxaban, Dabigatran, or Warfarin

***Acute Demand Service Case Number: _____**

Name _____

NHI _____ DOB _____ Ethnicity _____ Gender _____

Address _____

Contact Information: Mobile _____ Home _____

Treatment commenced date _____ / _____ / _____ Treatment finished date _____ /_____ /_____

For claiming send the following information to the WBoP PHO with the invoice:

☐ Rivaroxaban Management: Send a completed midland Acute Demand e-referral include relevant clinical details about Rivaroxaban management, attach the invoice for a funded Acute Demand follow-up.

☐ Dabigatran Management: Send pages 1, 4 and 5 with an invoice; see the Acute Demand Claim Schedule.

☐ Warfarin Management: Send pages 1, 4 and 8 with an invoice; see the Acute Demand Claim Schedule.

Invoice to:
Acute Demand Service
DVT Management
P.O Box 13226
Tauranga 3141

DISCLAIMER:
Users must consider current best practice and use clinical judgement with each case.
The use of Guidelines is not a substitute for individual clinical decision-making

Initial actions

***Acute Demand Service Case Number** _____ (do not use the same case number obtained for the DVT ultrasound; phone **5717161** or **5773198** to get a separate number for this management episode)

Urgent Bloods

- **FBC, Coagulation Screen (APTT,PT/INR/fibrinogen)**

  Note: If the D-dimer request was flagged to Pathlab as 'Acute Demand' at the time of the patient's first consultation, the coagulation screen can be requested on the held sample.

- **Creatinine, Sodium, Potassium**
  Note: Creatinine result doesn't have to be available before giving the first dose of Enoxaparin (Clexane®) but needs to be available before the second dose.
- **LFTs**
- **Pregnancy test** for women of child bearing age:
  - Pregnancy test results need to be available before women with childbearing potential have Warfarin, Dabigatran or Rivaroxaban.
  - For pregnant women seek expert advice for DVT Management and refer to the hospital.
- Arrange for the **Thrombophilia Screen** if indicated (page 10)

Management Notes

1. Decide the oral management: Rivaroxaban*, Dabigatran* (Pradaxa®), or Warfarin (Marevan®)
2. For **Rivaroxaban Prescription** (page 3)
   Start this medication immediately on day one.
   Rivaroxaban does not require Enoxaparin (Clexane®) injections prior to commencement.
3. For **Enoxaparin (Clexane®) Prescription** (page 4)
   Required if oral management is Dabigatran (Pradaxa®) or Warfarin (Marevan®)
   Obtain **Special Authority** approval for fully funded Enoxaparin (Clexane®) on community pharmacy prescription.
   Choose prescription strength either: 100mg/ml, 120mg/0.8ml, or 150mg/ml for single injection dosing.
   Patients with a calculated dose **>150mg daily, give 1mg/kg twice daily (BD)**
   This is a better dosing regimen rather than a large single daily dose.
4. For **Dabigatran (Pradaxa®) Prescription** (page 5)
   Start this medication only when the **5 days** of subcutaneous Enoxaparin (Clexane®) injections have been completed.
5. For **Warfarin Prescription** (page 6)
   The patient should be commenced on either **5mg** (conservative dose) or **10mg** (standard dose) along with subcutaneous Enoxaparin (Clexane®)
6. Obtain patient consent and have patient sign the last page of this document.
7. Distal DVT information (see page 3)
8. For Special Populations*(see page 7 for guidance)
   - Renal impairment
   - Age Group ≥ 75yrs
   - Extremes of body weight
     <50kg
     >120kg

Rivaroxaban DVT Management

Patient Inclusion Criteria

1. Normal renal function i.e. Creatinine Clearance >30mL / min (use the eGFR result on Pathlab, adjust for body surface area if less than 1.73m^2)
2. If the Creatinine Clearance is 30 – 50 mL / min it is possible for Rivaroxaban to accumulate with a higher risk of bleeding. So the Creatinine Clearance should be repeated to ensure no change in renal function.
3. Exclude if known to have gastrointestinal ulceration.
4. In proximal DVT cases – check for any symptoms or signs of Pulmonary Embolus. If high risk for PE or signs/symptoms of, then refer to Tauranga Hospital.

Management

5. Commence Rivaroxaban 15mg twice daily **WITH FOOD** for three weeks then reduce dose to 20mg once daily with food. Rivaroxaban must be given with food for bioavailability reasons.
6. Monitor renal function
7. Stop Rivaroxaban if Creatinine Clearance reduces below 30mL / min
8. See notes for Direct Oral Anticoagulants, to find these go to *Best Practice*, choose CPO Forms and view under 'Resources' along the dashboard.

Duration

9. If provoked DVT with reversible risk factors – 3 months. Provide advice on weight and exercise goals. After completion of treatment: avoidance of oestrogenic medication, and need for thromboprophylaxis for long-haul flights, surgery, pregnancy/puerperium and lower limb immobilisation in cast or moonboot.
10. If unprovoked DVT 6 months treatment, then arrange a specialist review (Haematology).
11. If treating a distal (below popliteal vein) lower limb DVT – 6 weeks to 12 weeks

Distal DVTs

Distal DVT's are not usually treated, but GPs can use discretion, ideally involving the patient in the decision-making on management, and may choose either A or B:

A: No initial anticoagulation treatment but a repeat funded Acute Demand scan after 5 - 8 days. Treatment required if proximal clot extension.

B: Anticoagulation treatment for 6 - 12 weeks, depending on risk factors – no F/U scan required

Choose the relevant Enoxaparin (Clexane®) prescription for the appropriate management plan

1. Enoxaparin (Clexane®) Prescription using 'Oral Dabigatran' Management

Enoxaparin Prescription *Special Authority is required for patient's prescription

Weight _____ kg ☐ Dose of Enoxaparin (Clexane®) 1.5mg/kg once daily **(see below if dose >150mg)**

Administer Enoxaparin (Clexane®) _____ mg subcutaneously **daily** for 5 days only

Start Date _____/_____/_____ Finish Date_____/_____/_____

Prescriber: Print Name NZMC Reg

Prescriber's signature Date:

2. Enoxaparin (Clexane®) Prescription using 'Oral Warfarin' Management

*** Contact specialist when there is renal impairment or advice about Anti-Xa levels and a nomogram about dosing and monitoring after first dose of enoxaparin.**

Enoxaparin Prescription *Special Authority is required for patient's prescription

Weight _____ kg

☐ Dose of Enoxaparin (Clexane®) **1.5mg/kg once daily** (see next page if weight >150kg)

OR

☐ Dose of Enoxaparin (Clexane®) **1mg/kg once daily** if creatinine clearance **<30ml/minute**

Administer **Enoxaparin (Clexane®) _____ mg** subcutaneously **daily** until INR is therapeutic (between 2.0 and 3.0). Enoxaparin (Clexane®) should not be stopped until the INR has been at least 2.0 for 2 consecutive days.

Enoxaparin (Clexane®) treatment doses to be given for a minimum of 5 days and up to 10 days.

Prescriber: Print Name NZMC Reg

Prescriber's signature Date:

- **IF WEIGHT <40KG, CONTACT A HAEMATOLOGIST**
- **IF WEIGHT >100KG, USE ENOXAPARIN (CLEXANE®) DOSE AS BELOW:**

3. Enoxaparin (Clexane®) Prescription

*For a calculated dose > 150mg daily, give 1mg/kg 12 hourly (BD)

Enoxaparin Prescription *Special Authority is required for patient's prescription

☐ Dose of Enoxaparin (Clexane®) **1mg/kg twice daily**

Administer Enoxaparin (Clexane®) _____ mg subcutaneously **BD for the period of time as per the management using either Dabigatran (5 days) or Warfarin (until INR therapeutic); see the relevant management for guidance.**

Prescriber: Print Name NZMC Reg

Prescriber's signature Date:

FAX pages 1, 4, & (5 or 8) to 5773191 at the completion of the episode for claiming and audit purposes.

Dabigatran (Pradaxa®) DVT Management

Patient Inclusion Criteria

1. Normal renal function i.e. Creatinine Clearance >30mL / min (use the eGFR result on Pathlab, adjust for body surface area if less than 1.73m^2)
2. If the Creatinine Clearance is 30 – 50 mL / min it is possible for Dabigatran (Pradaxa®) to accumulate with a higher risk of bleeding. So the Creatinine Clearance should be repeated to ensure no change in renal function.
3. Dabigatran can cause gastric irritation in 10-20% of people so consider an alternative if patient is known to have gastric irritation or gastrointestinal ulceration
4. In proximal DVT cases – check for any symptoms or signs of Pulmonary Embolus. If high risk for PE or signs/symptoms of, then refer to Tauranga Hospital.
5. Dabigatran should not be given to women of childbearing potential who either are or are at risk of becoming pregnant while on anticoagulant treatment.

Management

6. Administer Enoxaparin (Clexane®) for **5 days only**
7. Then commence Dabigatran 150mg twice daily on the day after Enoxaparin (Clexane®) is stopped
8. First dose to be 0 - 2 hours prior to the time when the Enoxaparin dose was being given
9. Monitor renal function : Stop Dabigatran if Creatinine Clearance reduces below 30mL / min
10. **Repeat the CBC on day 5 to check platelet count and haemoglobin (to exclude HIT)**
11. See page 7 for information about after-hours care
12. Record Enoxaparin (Clexane®) doses below for claiming and audit purposes
13. See notes for Direct Oral Anticoagulants, to find these go to *Best Practice*, choose CPO Forms and view under 'Resources' along the dashboard.

Duration

14. If provoked DVT with reversible risk factors – 3 months. Provide advice on weight and exercise goals. After completion of treatment: avoidance of oestrogenic medication, and need for thromboprophylaxis for long-haul flights, surgery, pregnancy/puerperium and lower limb immobilisation in cast or moonboot.
15. If unprovoked DVT 6 months treatment, then arrange a specialist review (Haematology).
16. If treating a distal (below popliteal vein) lower limb DVT – 6 weeks to 12 weeks (see page 3)

Day	Date & Time	Enoxaparin (Clexane®)	
		Dose	Given
1		mg	
2		mg	
3		mg	
4		mg	
5		mg	
Day 6	Commence Dabigatran 150mg twice daily on the day after Enoxaparin is stopped		

The Acute Demand Service requires this record for claiming and audit purposes, FAX pages 1, 4, & 5 to 5773191 at the completion of the Enoxaparin Clexane® dosing regimen on Day 5.

Warfarin (Marevan®) DVT Management

Management

1. Enoxaparin (Clexane®) should be given daily for at least 5 days and until the INR is therapeutic (≥ 2) for 2 consecutive days (48hours).
2. The INR will need to be checked every second day until therapeutic (≥ 2) and the Warfarin (Marevan®) dose adjusted during this time.
3. Make the patient aware when the next Pathlab blood test is due and the importance to present before 10am for this.
4. Warfarin (Marevan®) is taken every day at the same time preferably in the evening at 6pm.
5. Provide the patient with the Warfarin (Marevan®) booklet ("the red book") and blood card for regular testing.
6. Ensure the patient is aware of the increased risk of bleeding if taking antiplatelets e.g. Aspirin.
7. Check that the patient's current medications do not interact with Warfarin, i.e. non-steroidal anti-inflammatory drugs (NSAIDs).
8. **Repeat the CBC on day 5 to check platelet count and haemoglobin (to exclude HIT).**

Warfarin (Marevan®) Prescription

The starting dose for Warfarin (Marevan®) should be either 5mg or 10mg (see below)

***Prescribe a total of 100 x 1mg tablets**
*Prescribing only **1mg** tablets is consistent with bpac^{nz} guidelines to minimise patient error*

Warfarin Initiation Protocol

Refer to the documents on *Best Practice* under 'Resources' for 5mg & 10mg Warfarin Initiation Nomograms in published articles and Warfarin Initiation Protocol, page 50 of full text guideline.

Please detail on the prescription word for word as below for consistency

10mg ...for uncompromised patients	**5mg** …for compromised patients (frail, elderly)
Option 1 **"Rx Marevan (warfarin) 100 x 1mg tablets. Take ten tablets on day one and on day two. Then take the dose advised by your doctor or nurse. You need regular INR blood tests to make sure the dose is right for you".**	**Option 2** **"Rx Marevan (warfarin) 100 x 1mg tablets. Take five tablets on day one and on day two. Then take the dose advised by your doctor or nurse. You need regular INR blood tests to make sure the dose is right for you".**

Special populations

Renal impairment

- Do not use dabigatran or rivaroxaban in people with GFR <30ml/min.
- Enoxaparin (Clexane®) dose must be reduced in people with GFR <30ml/min.

People ≥ 75 years old

- Rivaroxaban may have a safety advantage over dabigatran 150mg in people ≥75 years old (less major bleeding in the clinical trials).
- Dabigatran may have a safety advantage over rivaroxaban in people UNDER 75 years old (less major bleeding and clinically relevant non-major bleeding in the clinical trials).
- The dose of dabigatran for DVT treatment is 150mg bd for all ages.
- If prescribing dabigatran or rivaroxaban for people ≥75 years old, caution if additional risk factors for bleeding are present such as:
  - renal function at the lower end of the licensed range;
  - unstable renal function;
  - history of bleeding, especially GI bleeding;
  - taking other medicines which increase the risk of bleeding e.g. antiplatelets (including medicines with antiplatelet activity such as SSRIs, venlafaxine) and some complementary medicines (e.g. high doses of fish oil, garlic or ginger).

Extremes of bodyweight (<50kg or >120kg)

- People at extremes of bodyweight were poorly represented in clinical trials, limiting the conclusions that can be drawn about safety and efficacy in these groups.
- Avoid DOACs in extremes of bodyweight unless enoxaparin (Clexane®) and warfarin cannot be used.

i) <u>People <50kg:</u>
   - The main concern is increased bleeding risk.
   - If using DOACs, use caution in people <50kg with other risk factors for bleeding:
     - renal function at the lower end of the licensed range;
     - unstable renal function;
     - older age;
     - history of bleeding, especially GI bleeding;
     - taking other medicines which increase risk of bleeding e.g. antiplatelets (including medicines with antiplatelet activity such as SSRIs, venlafaxine) and some complementary medicines (e.g. high doses of fish oil, garlic or ginger).

ii) <u>People >120kg:</u>
   - The main concern is therapeutic failure.
   - If using a DOAC in a person with bodyweight >120kg, obtain advice from a Haematologist about measuring drug-specific peak and trough levels.
   - If a DOAC is used, consider rivaroxaban rather than dabigatran as there have been reports of therapeutic failure with dabigatran, and rivaroxaban's pharmacokinetics may be less likely to be affected by high bodyweight than the pharmacokinetics of dabigatran.

After-hours Information

1. The patient may be prepared to self-administer Enoxaparin; saves the patient having to travel daily. Teach patient (or support person) how to self-administer Enoxaparin (Clexane®). Provide Education and discuss disposal of sharps.
2. Alternatively please contact Johns Photo Pharmacy on the corner of Cameron Road / Second Avenue to arrange administration by a pharmacist. The patient must take the Enoxaparin (Clexane®) (special authority) drug prescription or the Enoxaparin (Clexane®) medication with a letter of instruction for the required dose/s.
3. Alternatively please contact Accident and Healthcare in Second Avenue. Include relevant clinical details in the phone handover and also fax all relevant documents with clear instructions about the patient's care.
4. Ensure that the patient has adequate pain relief. Supply a prescription if necessary.
5. Ensure patient details are current, especially phone numbers.

Practice Nurse Information for Warfarin (Marevan® Management

1. Document all doses administered for Enoxaparin (Clexane®), Warfarin (Marevan®), and include the INR readings in the table. Inform the practice administrator which days require Acute Demand Service claiming. Acute Demand funding for visits ceases once Enoxaparin is stopped.
2. At patient visits, check vital signs, general health status, and pain scale.
3. For 'DVT Management using Warfarin (Marevan®), Enoxaparin (Clexane®) dosing should not be stopped until the INR is therapeutic (> 2); **for 2 consecutive days**. Inform the patient that Warfarin will continue after the injections stop.

Day	Date & Time	Enoxaparin (Clexane®)		INR	Warfarin (Marevan®)	Check INR on alternate days
		Dose	Given	Result	Dose	
1		mg			mg	INR
2		mg			mg	
3		mg			mg	INR
4		mg			mg	
Day 5		mg			mg	**INR & CBC**
6		mg			mg	
7		mg			mg	INR
8		mg			mg	
9		mg				INR
10		mg			mg	

The Acute Demand Service requires this record for claiming and audit purposes, FAX pages 1, 4, & 8 to 5773191 at the completion of the Enoxaparin Clexane® dosing regimen.

Bleeding Information

Bleeding is the most serious potential side effect of Anticoagulants

✱ Inform the patient to contact the GP immediately if experiencing any of the following symptoms and if related to the medication Rivaroxaban / Dabigatran / Warfarin / Enoxaparin

• Red or dark brown urine	• Prolonged bleeding from gums or nose
• Red or black bowel motions	• Dizziness, trouble breathing or chest pain
• Severe headache	• Unusual pain, swelling or bruising
• Unusual weakness	• Dark purplish or mottled fingers or toes
• Excessive menstrual bleeding	• Vomiting or coughing up blood

Contraindications

CHECK the following history before administering subsequent Enoxaparin (Clexane®) doses

- Liver function
- Severe hepatic or renal disease
- Major recent surgery
- Within one month of eye surgery or CNS surgery
- Platelet count 50 x 10^9/L
- Thrombocytopenia and platelet defects
- Cerebral haemorrhage
- Uncontrolled or severe hypertension
- Acute gastro-duodenal ulcer
- Hypersensitivity to other low molecular weight heparin
- Angiodysplasia (bowel)
- In **pregnancy** warfarin is contraindicated between weeks 6-12 of pregnancy
- In **cancer** patients warfarin may be less effective than LMWH, for long term treatment and maintenance consult with a Specialist if unsure

Thrombophilia Screening and Haematology in DVT Management

* The indications for inherited thrombophilia screen (ATIII, Protein C, Protein S, FVL and PT20210A) are now very strict and will only be done for patients with unprovoked proximal DVT or PE under the age of 45 years and with at least 2 close relatives who have also had unprovoked VTE at a young age.
- An FBC is very helpful to look for features that might suggest a myeloproliferative disorder.
- The other tests that would be useful, in any patient with an unprovoked DVT, and who is not known to have antiphospholipid syndrome, before they start treatment would be the antiphospholipid antibodies (lupus anticoagulant, antibeta2glycoproptein 1 and anticardiolipin antibodies). The syndrome is more common than many people realise and accounts for 5-10% of unprovoked VTE.
- Prior to patient starting treatment, a baseline **INR** and an **APTT** are needed.
- A **Thrombophilia Screen** can be requested on the held D-dimer sample. If flagged on the pathology request, the specimen will held for 24 hours – contact Pathlab.
- The patient does not need to have another blood test if the D-dimer was taken that day. All other haematology can be done on Day 2, **except on Friday**.
- **FBC, Creatinine & Electrolytes**, **Liver Function Tests**, and **Thrombophilia Screen (Day 1 or Day 2)**
- Check that the platelet count, clotting screen, liver and renal function are normal before administering the **second dose of Enoxaparin (Clexane®)**. If abnormal, discuss with the Medical Registrar.

Haematology in Warfarin (Marevan®) DVT Management

- The INR will need to be checked on alternate days while on Enoxaparin (Clexane®) and Warfarin (Marevan®).
- **Pathlab is closed on Sundays** therefore request any haematology on Saturday even if an INR is not due until Sunday.
- Some GP practices have a COAGUCHEK device which gives similar INR readings to venous samples when the INR is in therapeutic range, but can differ when the INR is high.
- **DAY 5: Repeat the CBC on Day 5 to check platelet count and haemoglobin**
- Once Enoxaparin (Clexane®) is stopped (after 48hrs of the patient being therapeutic), INR tests will be at the GP's discretion (for guidance see bpacnz INR testing booklet, page 15).
- http://www.bpac.org.nz/resources/campaign/inr/inr_poem.asp?page=1

Acute Demand Service

Patient Name:

WBOP PHO
Western Bay of Plenty Primary Health Organisation

Consent to Treatment

I the undersigned, choose to participate in the Acute Demand Service (project) aimed at treating people in the community under the care of a General Practitioner (GP).

Before making this choice, I have had the treatment explained to me in a language I understand and I have been made aware of any risks involved.

I agree to the care and / or treatment given to me by the GP including care by others contracted to provide additional Acute Demand Service care.

I and / or my support people / whanau agree to take responsibility for me:

- Taking my oral medications / tablets as per instructions from the Doctor or Nurse;
- Following the instructions regarding rest and exercise;
- Keeping medicines, supplies and all relevant documentation for this health service in a safe place out of the reach of children and animals;
- Following medical and nursing advice;
- Advising the Nurses or Doctors caring for me if I am allergic to any medications like Penicillin.

I understand that if I or my support people / whanau find that this arrangement of Community Care is unsuitable to us, I can contact my GP practice and request a reassessment for continuation of my care with review at the hospital if deemed medically necessary. I also understand that if I require emergency treatment or emergency advice relating to the Deep Vein Thrombosis (DVT) treatment outside my GP's usual business hours, I should go to or telephone the Tauranga Hospital Emergency Department.

At any time I reserve the right to refuse treatment and my choice will be respected.

I will be informed when an additional health professional is to be involved.

I agree that all clinical Acute Demand Service documentation will be returned promptly to my GP.

I agree to the sharing of my health information with other health professionals in a confidential manner.

Signed _____ Date _____ /_____ /_____

Or Carer/Relative's Signature _____ Name _____

Relationship to person _____

Signed _____ Signed _____

(Doctor) (Witness)