Document Details	
Title	**Prescribing Protocol for VTE Prophylaxis for In-patients and Post-discharge**
Trust Ref No	2146-
Main points the document covers	Dosing schedules when prescribing for VTE prophylaxis
Who is the document aimed at?	Prescribers working within Community Hospitals
Owner	Community Hospitals Medical Advisors
Approval process	
Approved by (Committee/Director)	Patient Safety Committee
Approval Date	20th May 2024
Initial Equality Impact Screening	No
Full Equality Impact Assessment	No
Lead Director	Director of Nursing and Clinical Delivery
Category	Clinical
Subcategory	Medicines Management
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Distribution	
Who the policy will be distributed to	Available to all clinical staff
Method	Email notification of entry onto webpage
Document Links	
Required by CQC	Yes
Required by NHLSA	Yes

Amendments History		
No	**Date**	**Amendment**
1	January 2020	New Publication
2	October 2021	Change from Tinzaparin to Enoxaparin
3	January 2022	Post-discharge DOAC option removed following a fragility fracture Enoxaparin and DOAC course duration clarification following THR
4	April 2024	Addition of off-label prescribing in certain circumstances such as needle-phobia, and consideration for patient's objecting to porcine derived products. Religious beliefs. Inclusion of Tinzaparin.

Prescribing Protocol for VTE Prophylaxis For In-patients and Post-discharge

Purpose:

To ensure robust and consistent prescribing of prophylactic Low Molecular Weight Heparins (LMWH) based on patient weight and renal function. To provide guidance on VTE prophylaxis post-discharge.

Scope:

This covers all patients prescribed low molecular weight heparins for prophylaxis within Shropshire Community Health Trust (SCHT). It does not cover treatment doses.

Responsibilities:

Prescribers and nursing staff should be familiar with the contents of this guidance document.

Enoxaparin should be prescribed by brand, this is 'Clexane' at SCHT.

Enoxaparin is the VTE prophylaxis low molecular weight heparin of choice at SCHT, RJAH (Orthopaedic Hospital) and Hereford Hospitals.

Please note, the acute Trust (SaTH) use Tinzaparin as their low molecular weight heparin of choice. In the event a patient is admitted on an alternative LMWH e.g. Tinzaparin, the supply that has come with the patient will be prescribed and used as long as the patient has the complete course. Otherwise, they will be converted to Enoxaparin, e.g.,

- Patient arrives on the ward with a complete course of Tinzaparin (relevant for orthopaedic patients) – The prescriber should continue the Tinzaparin at clerking.
- Patient arrives out of hours with no Tinzaparin, and the only way to administer VTE prophylaxis will be to use the SaTH medicine chart stating Tinzaparin for prophylaxis – nursing staff should use SCHT stock to administer next dose(s) of Tinzaparin until a prescriber is back on site, then request that VTE prophylaxis is changed to 'Enoxaparin' when clerking.
- Patient arrives within prescribing hours with no supply of Tinzaparin – patient should be clerked and swapped over to Enoxaparin.

In all instances:

- **Ensure the VTE Risk assessment Form has been completed**
- **Review within 24 hours and whenever the patient's condition changes**

Prescribing Guidance for: Prophylactic doses of Enoxaparin for Medical Inpatients with one or more VTE risk factors:

ENOXPARIN (CLEXANE)	
Weight	**Dose (Creatinine Clearance ≥ 20ml/min)**
31-54kg	20mg (0.2ml) once a day
55-130kg	40mg (0.4ml) once a day
131kg - 170kg	60mg (0.6ml) once a day
>170kg	80mg once a day Use 2 x 40mg (0.4ml) syringes – until 80mg syringes available

TINZAPARIN (INNOHEP) *Medical and Surgical Prophylaxis*	
Weight	**Dose (Creatinine Clearance ≥ 20ml/min)**
<55kg	3500 units ONCE a day in the evening
55-120kg	4500 units ONCE a day in the evening
>120kg	50units/kg (rounded to the nearest 500units) ONCE a day. Where doses are 9,000 units or greater, the dose should be split e.g. prescribe 9,000 units as 4,500 units twice a day

Note: The recommendations for dosing Enoxaparin and Tinzaparin by bodyweight have been implemented in this guidance based on expert opinion and clinical experience.

Where Creatinine Clearance falls below 20ml/min the patient must be transferred to an alternative product:

Renal impairment	
Creatinine Clearance <20ml/min	Unfractionated Heparin (5,000 units twice a day) should be used if Creatinine Clearance is less than 20ml/min

Calculate creatinine clearance (CrCl) using the Cockcroft Gault equation. Renal function using e-GFR is not equivalent to CrCl and cannot be used for dose adjustment in renal impairment.

The benefit of prophylaxis of venous thromboembolism in medical patients is not established for a treatment longer than 14 days, any decision to extend prophylaxis beyond this duration for medical patients must be made by the consultant and documented accordingly.

Other Considerations:

Low molecular weight heparins should be given for VTE prophylaxis as a first line option; however, they are porcine derived. Some patients may object to being given porcine derived heparin for personal or religious reasons.

Tinzaparin has been approved for use in patients with religious or dietary beliefs that preclude porcine based components and this is evidenced here. Where this is still refused, consider offering Fondaparinux to patients as VTE prophylaxis. Contact a member of the pharmacist team to offer advice on dosing.

Prescribing Guidance for: Surgical DVT prophylaxis patients

If eGFR < 20 mL/minute: discuss with Consultant Haematologist and/or Renal Consultant

Body weight	ENOXPARIN Dose
Less than 100kg	40mg (0.4ml) subcutaneously ONCE daily
100-130kg	60mg (0.6ml) subcutaneously ONCE daily – Use 1 x 40mg and 1 x 20mg until 60mg syringe is available
More than 130kg	80mg subcutaneously ONCE daily-Use 2 x 40mg (0.4ml) syringes until 80mg syringes available
More than 170kg	0.6mg/kg/day- Round dose to nearest 20mg given sub-cut ONCE daily

Refer to page 3 for Tinzaparin dosing which remains the same as for medical VTE prophylaxis.

The table below makes recommendations for course lengths for surgical patients as well as a possible oral option. **Rivaroxaban** at a dose of **10mg ONCE daily**, can be substituted in certain circumstances e.g. patient unwilling to continue subcutaneous injections. *N.B. use for some fracture sites will be off license, see table for details*, the prescriber needs to risk assess the patient before making a prescribing decision on whether an oral alternative would be appropriate.

N.B. creatinine clearance must be greater than 15ml/min and used with caution when 15-29ml/min when prescribing Rivaroxaban.

Indication:	VTE prophylaxis course length:	Consider Rivaroxaban if patient unwilling to have sub-cutaneous injections. (10mg ONCE daily)
Fragility fracture pelvis/hip/femur	to complete 28 day course LMWH in total post-op	OFF LICENSE USE - Rivaroxaban is not licenced for VTE prophylaxis following a fragility fracture
Total Knee Replacements and Revision	to complete 14 days course in total post-op	YES – **14 days**
Total Hip Replacements and Revision	to complete a 28 day course of LMWH combined with anti-embolism stockings post-op	YES- to complete a **35 day** course of VTE prophylaxis
Lower limb fracture or hind foot surgery with plaster cast	Continue treatment until cast removed	NO – use Enoxaparin until cast removed if patient is high risk or non-weight bearing
Upper Limb surgery	No thromboprophylaxis indicated at discharge	N/A

Post-Discharge completion of VTE prophylaxis course:

Patients willing and able to self- administer or who have a carer willing and able to administer LMWH via sub-cutaneous injection:

- Supply the patient or carer with sufficient injections to complete the course and provide a yellow sharps bin and patient information leaflet if necessary.
- Supervision and observation of the patient's or carer's injection technique is recommended pre-discharge.
- Refer to Community Nursing team to administer post-discharge if the patient or carer is unwilling or unable to administer and rivaroxaban is not indicated.
- Ensure patient / carer is informed on how to dispose of their yellow sharps box following completion of their treatment.

Severe Needle Phobia

The significance of parenteral prophylaxis should be stressed and reassuringly explained to patients who are afraid of needles. Prophylactic Rivaroxaban, 10mg once daily, may be prescribed in certain circumstances, however this approach is off label. The circumstances in which this would be suitable are if the patient refuses medication despite documented assurances and education. The relevant documentation pertaining to the usage of this drug outside of the licensed indications must be recorded in the patient's notes.

References:

1. NICE Guidance NG89. Venous Thromboembolism in over 16's – reducing the risk of hospital acquired DVT or PE (13/08/2019) [Available at: Overview | Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism | Guidance | NICE] Accessed: 11/04/2024

2. Shropshire Community Health NHS Trust: Reducing the Risk of Venous Thromboembolism Policy (14/03/2022) [Available at: 10632.pdf (shropcom.nhs.uk)] Accessed: 11/04/2024

3. NPSA. Rapid Response Report NHS/PSA/W/2015/001 Harm from using Low Molecular Weight Heparins when contraindicated (19/01/2015) [Available: psa-lmwhs.pdf (england.nhs.uk)] Accessed: 11/04/2024

4. Shrewsbury and Telford Hospitals NHS Trust :Prescribing Guide: Venous Thromboembolism (VTE) Prophylaxis in Adults (Enoxaparin). October 2021

5. NICE Technology Appraisal Guidance (TA170) (May 2012 Update): Rivaroxaban for the prevention of venous thromboembolism after total hip or total knee replacement in adults. [Available: Overview | Rivaroxaban for the prevention of venous thromboembolism after total hip or total knee replacement in adults | Guidance | NICE Accessed: 11/04/2024