NHS
Croydon Clinical Commissioning Group

Croydon Guidelines for Managing Low Molecular Weight Heparins for high risk patients undertaking long-haul travel

This protocol has been developed in conjunction with Croydon University Hospital Clinicians based on the British Committee for Standards in Haematology (BCSH) 'Guidelines on travel-related venous thrombosis' (2010).

General Key Messages

• Long duration travel is a weak risk factor for the development of venous thromboembolism (VTE).
• Duration of travel of ≥ 3 hours is associated with a thrombotic risk
• VTE may be attributable to travel if it occurs up to 8 weeks following the journey
• The risk of travel-related thrombosis is higher in individuals with pre-existing risk factors for the development of VTE.
• Maintaining mobility may prevent VTE and, in view of the likely pathogenesis of travel-related VTE, maintaining mobility is a reasonable precaution for all travellers on journeys over 3 hours.
• Global use of compression stockings and anticoagulants for long distance travel is not indicated.
•Assessment of risk should be made on an individual basis.
• Where pharmacological prophylaxis is considered appropriate, anticoagulants as opposed to anti-platelet drugs are recommended.

Table 1: VTE risk stratification of patients

Risk Category	Factors	Recommendations
Low Risk	No previous history of DVT or PE No Surgery in the previous 4 weeks No other risk factors to indicate moderate /high risk	• Avoid excessive alcohol or sedatives • Regularly flex ankles to contract calf muscles. • Drink plenty of fluids to avoid dehydration. • Take short walks in aisles if possible
Moderate risk	Previous history of DVT or PE (but without any other additional risk factors to indicate high risk) Surgery under general anaesthesia lasting more than 30 minutes in previous 2 months but not in the last 4 weeks.	• As above plus • Wear compression travel socks (i.e. class 1, 10-14mmHg, graduated below knee compression stocking) • Note: this class of compression hosiery is not available on NHS prescriptions).
High risk but uncomplicated (i.e. specialist input may not be necessary)	Surgery under general anaesthesia lasting more than 30 minutes in the last 4 weeks. Previous history of DVT/PE plus one or more of the following additional risk factors e.g. ▪ Severe obesity (i.e. BMI >40kg/m2) ▪ Thrombophilia ▪ Plaster cast ▪ Recent event where oral anticoagulation treatment completed within past 3 months	• As for low risk patients plus • LMWH at prophylactic dose 2-4 hours before departure and return flight. • Provision of medical letter for immigration & customs official explaining need to carry needles and syringes whilst travelling. **GP Prescribing of LMWH acceptable under these circumstances**
High risk and complex (i.e. specialist advice is required)	Previous history of DVT/PE plus one or more of the following additional risk factors e.g. • New patients receiving oral anticoagulation but not yet stabilised • Previous history of life threatening PE event. • Receiving tamoxifen or other hormonal treatment. • Active malignancy	• Refer to Haematologist for specialist input

Additional information if low molecular weight heparin (LMWH) is prescribed:

- Ensure that appropriate arrangements are in place for LMWH administration (for example, that a nurse is available) or that the person is given training if the drug will be self-administered.
- Where LMWH indicated should be administered before departure.
- The British Medical Association warns that cabin crew are generally not trained in the administration of drugs by injection, and therefore the passenger or an accompanying person must be able to do this when necessary [BMA, 2004].
- Prescribe sufficient LMWH to cover the outgoing and any subsequent connecting or return flights.
- Prescribe LMWH as pre-filled syringes for ease of administration.
- Provide the person with a letter that explains why they have to carry needles and syringes while travelling, to show to security, immigration, and customs officials.
- Warn about the increased risk of bleeding and bruising.
- Advise the person to seek urgent medical advice if there is uncontrolled or excessive bleeding or bruising, or if they have a sudden severe headache (possible intracranial haemorrhage), or gastrointestinal pains (signifying possible gastrointestinal bleeding).
- Give advice on the safe storage and disposal of needles and syringes ('sharps').

Table 2: A dosing guide for prescribing Dalteparin for Thromboprophylaxis

Dalteparin Dose banding based on body weight has been adapted from CUH trust guidance on LMWH	
Weight	**Dalteparin dose**
Under 45kg	2500 units once daily
45-99kg	5000 units once daily
100-149kg	7500 units once daily
150kg or more	5000 units twice daily

Glossary

- **International normalised ratio (INR) -** A standardised laboratory measure of blood coagulation used to monitor the adequacy of anticoagulation in patients who are having treatment with a vitamin K antagonist
- **Low Molecular Weight Heparins (LMWH)** – Fractions of heparin with a molecular weight below 8,000 Daltons.
- **Venous Thromboembolism (VTE)** - Venous thromboembolism (VTE) is a condition in which a blood clot (a thrombus) forms in a vein, most commonly in the deep veins of the legs or pelvis. This is known as **deep vein thrombosis**, or **DVT**. The thrombus can dislodge and travel in the blood, particularly to the pulmonary arteries. This is known as **pulmonary embolism, or PE**. The term '**VTE**' includes both **DVT** and **PE**.
- **Warfarin**- Warfarin is the commonest oral anticoagulant in clinical practice. It exerts its anticoagulant effects by blocking the regeneration of vitamin K. Patients on warfarin have reduced levels of Vitamin – K dependent clotting factors (II, VII, IX and X and also protein C,S and Z). The effect of warfarin is measured by the INR. For the purpose of this document, warfarin refers to all oral vitamin K antagonists.

References

1. NICE Clinical Guidance 92 www.nice.org.uk/CG92
2. Guideline on Travel –Related Thrombosis http://www.bcshguidelines.com/documents/BCSHTravelGuideline 2010
3. NICE Clinical Guidance 144 www.nice.org.uk/CG144
4. Prescribing Low Molecular Weight Heparins (LMWH's), NHS Wands worth, July 2011
5. NHS Evidence Clinical Knowledge Summaries website Accessed Dec 2012 http://www.cks.nhs.uk/dvt_prevention_for_travellers/management/scenario_dvt_prevention_for_travellers/view_full_scenario

Prepared by Dr Stella Appiah-Cubi (Consultant Haematologist CUH) & Claudette Allerdyce (Principal Pharmacist PCT) Dec 2012

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