VTE prophylaxis in Medical HDU

Wishaw General Hospital
MHDU
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INTRODUCTION

- 25,000 patient deaths occur annually due to VTE in the UK
- Critical care patient VTE risk is between 25% and 32%
- Infection, inflammatory processes, vascular injury, recent surgery and immobility increase risk
Dosing Considerations

Renal Function

• Severe renal insufficiency in 30% critical care patients

• Bioaccumulation of Enoxaparin

• Manufacturers of Enoxaparin recommend reduced dose in severe renal impairment (defined as CrCl <30ml/min).

Weight

• Suboptimal anti-factor Xa levels in obesity

• 71% percent of the adult population in Lanarkshire classified as overweight (2015-2016)

• Low body weight- Increased bleeding event risk
NHS LANARKSHIRE

- New risk assessment tool recently introduced
- Weight guided dosing currently available

![Table: Suggested doses of LMWH for thromboprophylaxis in adult patients](image)

*Figure 1: Dosing guidance for thromboprophylaxis (NHS Lanarkshire., 2016)*
AUDIT OBJECTIVE

To determine whether pharmacological thromboprophylaxis is prescribed correctly according to weight and renal function in the medical HDU at Wishaw General Hospital.
AUDIT STANDARDS

NICE guidelines [CG92], Venous thromboembolism-reducing the risk. NICE; 2010.

• ‘Reassess patients’ risks of bleeding and VTE within 24 hours of admission and whenever the clinical situation changes’

• ‘Assess all patients on admission to the critical care unit for their risks of VTE’

SIGN, Prevention and management of venous thromboembolism. SIGN; 2010.

• ‘Reassess patient every 48 to 72 hours or sooner if condition changes’

• NHS Lanarkshire Joint Formulary. Anticoagulants and protamine. NHS Lanarkshire; 2016
METHODOLOGY

Sample Inclusion Criteria:

- Patients admitted to medical HDU between 01.08.2016 & 01.09.2016
- Patients receiving thromboprophylaxis

Exclusion Criteria:

- ACS treatment
- VTE treatment
- Palliation
- Unavailable Notes
METHODOLOGY

- Retrospective study
- Ward watcher – admission dates
- Clinical Portal - Medication chart
- Weight/Height from MUST, Drug charts, ICP, GP records
- Renal Function on admission
- Creatinine clearance
- Platelet number on admission
- ICP for diagnosis and contraindications to thromboprophylaxis
DATA DESCRIPTION

- 97 Admissions
- 28 Exclusions
- 69 Inclusions
- 41 Females, 28 Males
- 39 prescribed VTE Prophylaxis
RESULTS

Percentages of cases with correct Enoxaparin dose prescribed

- Correct Dose: 79%
- Incorrect Dose: 21%
RESULTS

Percentage of incorrect prescriptions due to weight, platelet number and renal function

- Weight <50kg: 12.5%
- Weight 50-100kg: 12.5%
- Weight 100-150kg: 50%
- Renal Function: 25%
- Platelet Number: 0%
- Weight >150kg: 0%
RESULTS SUMMARY

- 21% of patients receiving VTE prophylaxis were prescribed the incorrect dose
- 50% of incorrect prescriptions were due to under dosing of patients in the weight range 100-150kg
- 25% of incorrect prescriptions were due to a failure to adjust for reduced renal function
SUMMARY

- Audit demonstrates need to improve VTE prophylaxis prescribing in patients with extremes of weight and renal impairment on the medical high dependency unit

*Factors Influencing the audit*
- Weight and height records
- Note availability
RECOMMENDATIONS

- Improve VTE prescribing by educating doctors, nurses and pharmacists
- Reassess all patients on admission to medical HDU in light of VTE prophylaxis
- Encourage nursing staff to obtain accurate height and weight measurements
- Use CrCl as opposed to eGFR for assessing renal function
- Empower MDT to respond to inappropriate prescriptions
ACTION TAKEN

Dissemination

Local:

- Wishaw Medical Journal Club
- Pharmacy
- FY1 teaching
- Cross-site haematology meeting
- QI event: Wishaw General Hospital
## Thromboprophylaxis Dosing in Adult Patients

<table>
<thead>
<tr>
<th></th>
<th>&lt;50kg</th>
<th>50-100kg</th>
<th>100-150kg</th>
<th>&gt;150kg</th>
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</thead>
<tbody>
<tr>
<td><strong>Enoxaparin</strong></td>
<td>20mg daily*</td>
<td>40mg daily</td>
<td>40mg twice daily*</td>
<td>60mg twice daily*</td>
</tr>
</tbody>
</table>

* 'off-license' dose

- Re-audit July 2017
QUESTIONS
REFERENCES


