

VTE prophylaxis in Medical HDU



**Wishaw General Hospital
MHDU**

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CONTENTS

- ❖ Introduction
- ❖ Background
- ❖ Audit Standard
- ❖ Audit Objective
- ❖ Methodology
- ❖ Results
- ❖ Recommendations

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

Suggested doses of LMWH for thromboprophylaxis in adult patients				
	<50kg	50-100kg	100-150kg	>150kg
Enoxaparin	20mg daily*	40mg daily	40mg twice daily*	60mg twice daily*
Dalteparin	2500 units daily*	5000 units daily	5000 units twice daily*	7500 units twice daily*
Tinzaparin	3500 units daily*	4500 units daily	4500 units twice daily*	6750 units twice daily*

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

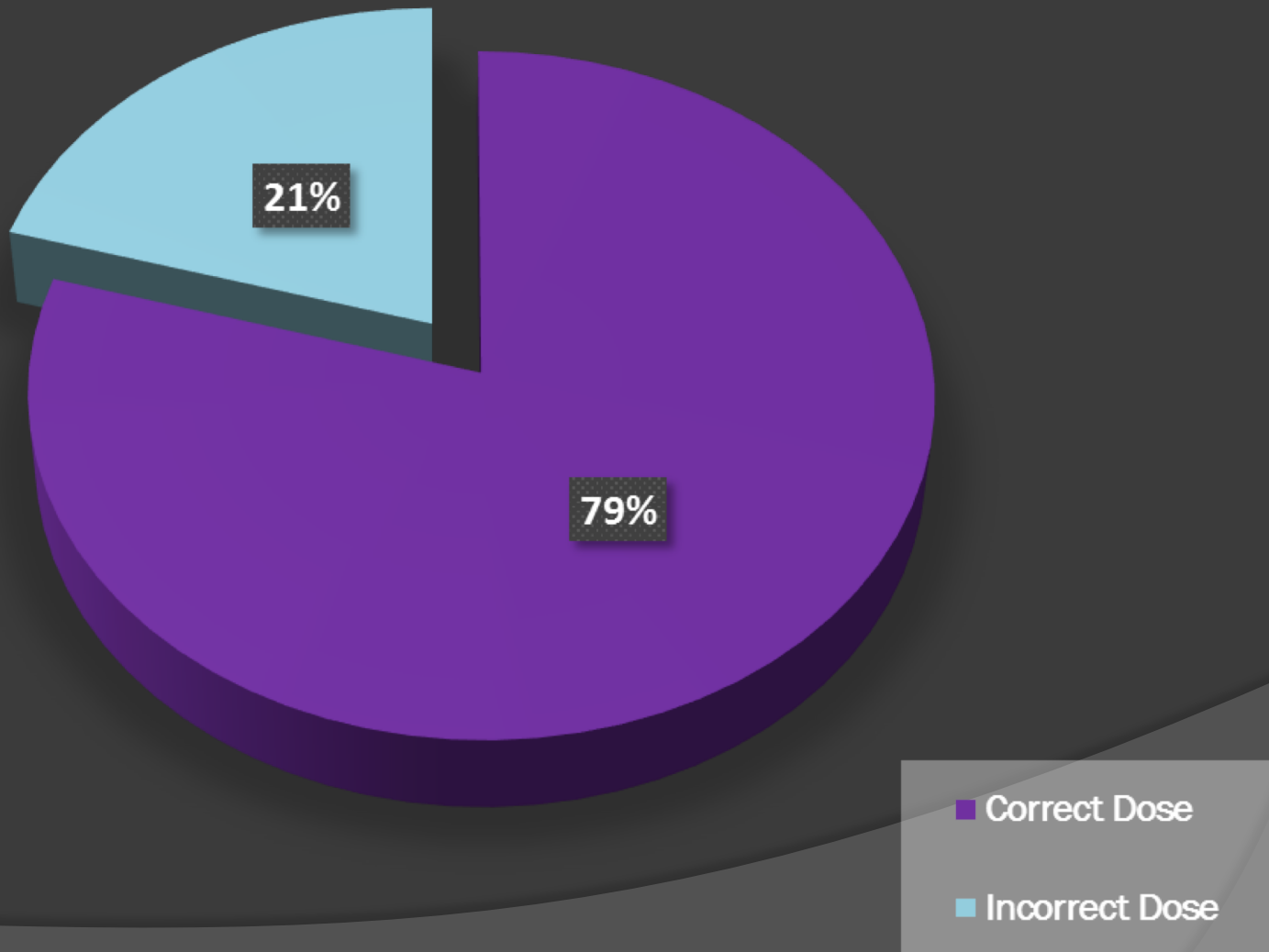
- ❖ Retrospective study
- ❖ Ward watcher – admission dates
- ❖ Clinical Portal- Medication chart
- ❖ Weight/Height from MUST, Drug charts, ICP, GP records
- ❖ Renal Function on admission
- ❖ Creatinine clearance
- ❖ Platelet number on admission
- ❖ ICP for diagnosis and contraindications to thromboprophylaxis

DATA DESCRIPTION

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

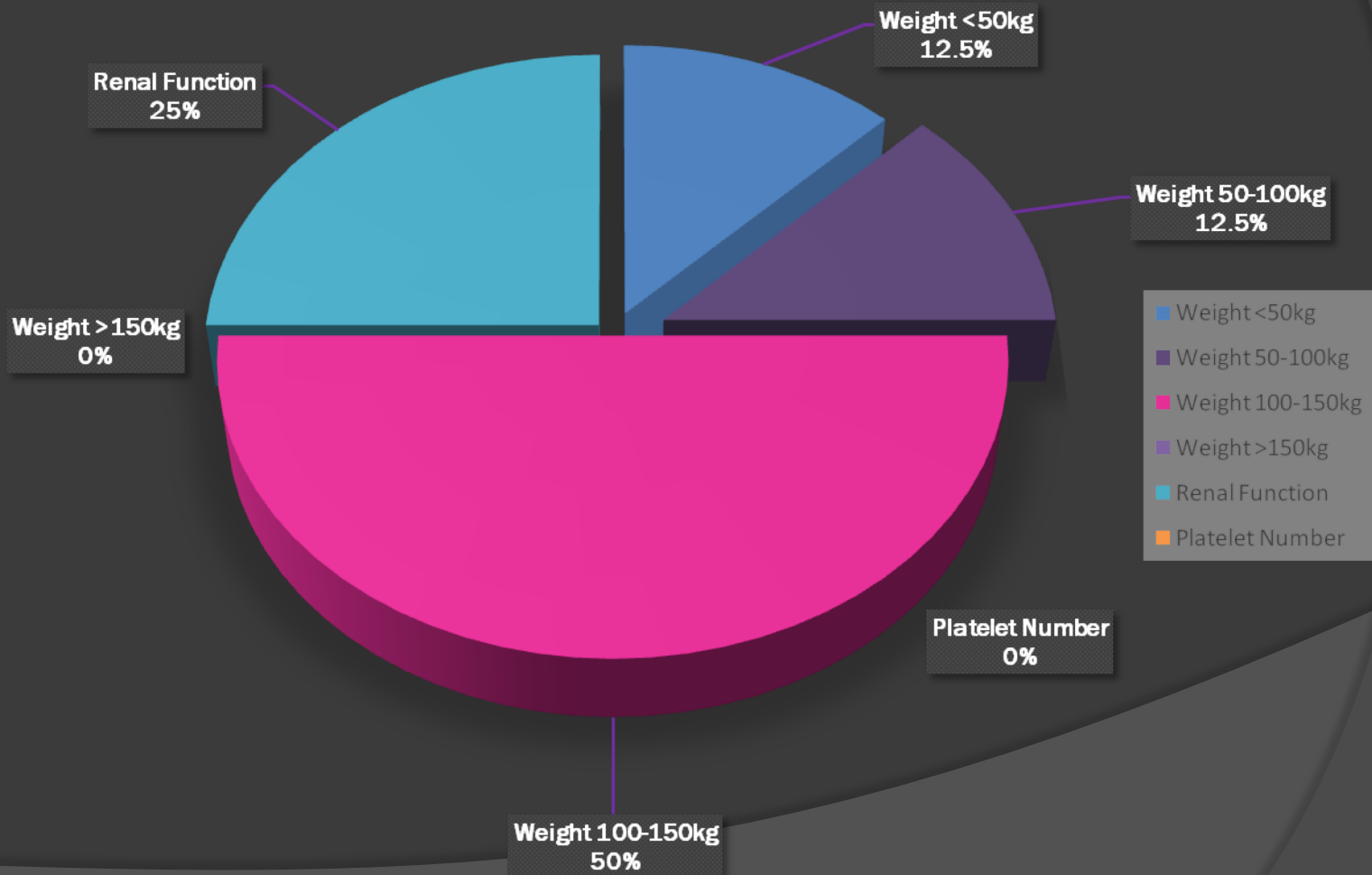
RESULTS

Percentages of cases with correct Enoxaparin dose prescribed



RESULTS

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



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 in the Medical High Dependency Unit at Wishaw General Hospital



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BACKGROUND

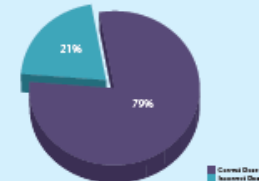
- 25,000 patient deaths occur annually in the UK due to venous thromboembolism (VTE)
- The risk of VTE in critical care patients is between 25% and 32%
- Infection, inflammatory processes, vascular injury, recent surgery and immobility increase risk for critical care patients
- Safe dosing of thromboparis is dependent upon weight and renal function
- Severe renal insufficiency occurs in 30% of critical care patients therefore such consideration is imperative

AUDIT OBJECTIVE

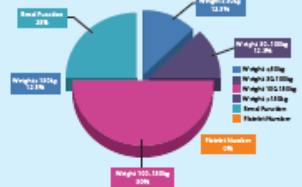
To determine whether dosing of thromboprophylaxis is carried out appropriately for assessed weight and reduced renal function on the medical high dependency unit (MHDU)

METHODOLOGY

- Sample Inclusion Criteria:**
- Patients admitted to MHDU between 01.08.2016 & 01.09.2016
 - Patients receiving thromboprophylaxis
- Exclusion Criteria:**
- ACS treatment
 - VTE treatment
 - Palliation
- Retrospective data for patients admitted to MHDU was collected for one month. Dose of Enoxaparin on admission to MHDU was recorded alongside weight, creatinine clearance and platelet count.



Graph 1: An overview of cases with correct/dose given as prescribed



Graph 2: An overview of incorrect prescriptions due to weight, platelet number or renal function

RESULTS

- 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

ACTION TAKEN

- Journal Club presentation & Hospital Wide presentation
- Regional presentation
- Pharmacy lead teaching
- Poster Production
- Re-Audit

NHS Lanarkshire THROMBOPROPHYLAXIS DOSING IN AUDIT PATIENTS				
	<50kg	50-100kg	100-150kg	>150kg
Prescribed	2/2	1/1	2/2	2/2
Total n	2	1	2	2

Figure 1: Poster produced to guide thromboprophylaxis dosing

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Dosing Guidance Poster



THROMBOPROPHYLAXIS DOSING IN ADULT PATIENTS

	<50kg	50-100kg	100-150kg	>150kg
Enoxaparin	20mg daily*	40mg daily	40mg twice daily*	60mg twice daily*

* 'off-license' dose

- Re-audit July 2017

QUESTIONS



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