Initiation of VTE Risk Assessment and Pharmacology Prophylaxis in Hip Fracture Unit patients

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Miss Kang Yuen Kay[1], Miss Tay Hooi Ching[1], Miss Koh Yueting[1], Miss Koh Kai Yee[1], Dr Mallya Jagadish Ullal[2], Dr Su Su[2]

[1]*Department of Pharmacy, Khoo Teck Puat Hospital*

[2]*Department of Geriatrics, Khoo Teck Puat Hospital*

Introduction

Patients with hip fracture are at high risk of developing venous thromboembolism (VTE),which can be fatal. However, risk of developing VTE is underestimated and perceived fear of bleeding prevent patients from receiving appropriate pharmacologic VTE prophylaxis (VTEP).

Hence, we developed a VTEP protocol to:

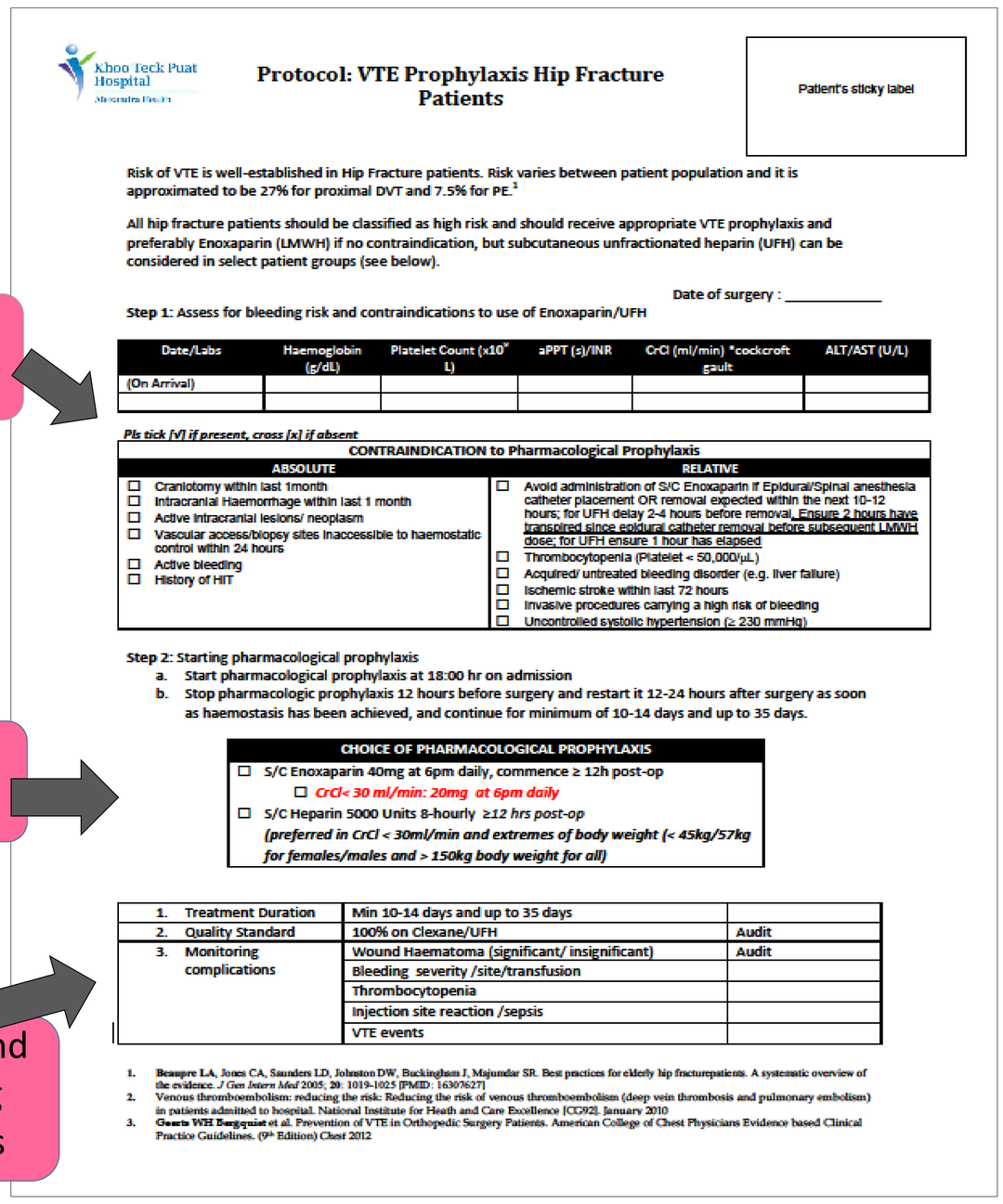
- ✓ Assess risk of VTE and contraindications to prophylaxis therapy
- ✓ Select appropriate pharmacologic prophylaxis
- ✓ Monitor for complications and evaluate efficacy

Methods

Risk assessment

Selecting therapy

Standards and monitoring parameters



Khoo Teck Puat Hospital

Protocol: VTE Prophylaxis Hip Fracture Patients

Patient's sticky label

Risk of VTE is well-established in Hip Fracture patients. Risk varies between patient population and it is approximated to be 27% for proximal DVT and 7.5% for PE.[1]

All hip fracture patients should be classified as high risk and should receive appropriate VTE prophylaxis and preferably Enoxaparin (LMWH) if no contraindication, but subcutaneous unfractionated heparin (UFH) can be considered in select patient groups (see below).

Date of surgery : _____

Step 1: Assess for bleeding risk and contraindications to use of Enoxaparin/UFH

Date/Labs	Haemoglobin (g/dL)	Platelet Count (x10⁹ L)	aPPT (s)/INR	CrCl (ml/min) *cockcroft gault	ALT/AST (U/L)
(On Arrival)					

Pls tick [√] if present, cross [x] if absent

CONTRAINDICATION to Pharmacological Prophylaxis	
ABSOLUTE	**RELATIVE**
☐ Craniotomy within last 1month ☐ Intracranial Haemorrhage within last 1 month ☐ Active intracranial lesions/ neoplasm ☐ Vascular access/biopsy sites inaccessible to haemostatic control within 24 hours ☐ Active bleeding ☐ History of HIT	☐ Avoid administration of S/C Enoxaparin if Epidural/Spinal anesthesia catheter placement OR removal expected within the next 10-12 hours; for UFH delay 2-4 hours before removal. Ensure 2 hours have transpired since epidural catheter removal before subsequent LMWH dose; for UFH ensure 1 hour has elapsed ☐ Thrombocytopenia (Platelet < 50,000/μL) ☐ Acquired/ untreated bleeding disorder (e.g. liver failure) ☐ Ischemic stroke within last 72 hours ☐ Invasive procedures carrying a high risk of bleeding ☐ Uncontrolled systolic hypertension (≥ 230 mmHg)

Step 2: Starting pharmacological prophylaxis

a. Start pharmacological prophylaxis at 18:00 hr on admission

b. Stop pharmacologic prophylaxis 12 hours before surgery and restart it 12-24 hours after surgery as soon as haemostasis has been achieved, and continue for minimum of 10-14 days and up to 35 days.

CHOICE OF PHARMACOLOGICAL PROPHYLAXIS
☐ S/C Enoxaparin 40mg at 6pm daily, commence ≥ 12h post-op
☐ *CrCl< 30 ml/min: 20mg at 6pm daily*
☐ S/C Heparin 5000 Units 8-hourly *≥12 hrs post-op*
(preferred in CrCl < 30ml/min and extremes of body weight (< 45kg/57kg for females/males and > 150kg body weight for all)

1.	Treatment Duration	Min 10-14 days and up to 35 days	
2.	Quality Standard	100% on Clexane/UFH	Audit
3.	Monitoring complications	Wound Haematoma (significant/ insignificant)	Audit
		Bleeding severity /site/transfusion	
		Thrombocytopenia	
		Injection site reaction /sepsis	
		VTE events	

1. **Beaupre LA**, Jones CA, Saunders LD, Johnston DW, Buckingham J, Majumdar SR. Best practices for elderly hip fracturepatients. A systematic overview of the evidence. *J Gen Intern Med* 2005; 20: 1019-1025 [PMID: 16307627]
2. Venous thromboembolism: reducing the risk: Reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital. National Institute for Heath and Care Excellence [CG92]. January 2010
3. **Geerts WH Bergquist** et al. Prevention of VTE in Orthopedic Surgery Patients. American College of Chest Physicians Evidence based Clinical Practice Guidelines. (9th Edition) Chest 2012

Inputs

Resources required:

- ➢ Doctors
- ➢ Nursing Staff
- ➢ Pharmacist
- ➢ Assessment tool
- ➢ Training of Nurses and Doctors

Activities

- ➢ Completion of VTE assessment tool after assessing patient's medical condition by clinicians
- ➢ Selection of appropriate VTEP
- ➢ Administration of VTEP by nurse
- ➢ Monitoring of compliance to VTEP, bleeding complications and VTE events

Outcome Measures

- ➢ Appropriate VTEP rates
- ➢ Reduction in VTE rates
- ➢ Bleeding complications
- ➢ VTE events

Results

Before

Description	Feb 15	Mar 15	Apr 15	Total
No. of Hip fracture patient	20	27	19	66
Given VTEP	16	22	19	57
%Appropriate VTEP	80%	81%	100%	86%
VTE events	2	0	1	3
Bleeding complications	0	0	0	0

Table 1. Patients on pharmacoprophylaxis for VTE **before** implementation of risk assessment form

After

Description	May 15	Jun 15	Jul 15	Aug 15	Total
No. of Hip fracture patient	36	37	22	16	111
Given VTEP	32	35	21	14	102
%Appropriate VTEP	89 %	95%	95%	87%	91%
VTE events	1	0	1	2	4
Bleeding complications	1	0	1	0	2

Table 2. Patients on pharmacoprohylaxis for VTE **after** implementation of risk assessment form

Conclusion

Although VTE is a known risk in this group of patients, there has never been a standard practice of risk assessment and prescribing appropriate prophylaxis therapy. This tool has thus been shown to increase standards of practice across the entire group of hip fracture units patients safely and effectively.