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Short Communication

Surgical Patients Should be Assessed for VTE and Bleeding Risks and Receive Appropriate VTE Prophylaxis-Ward Perspective

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INTRODUCTION

The house of commons health committee reported in 2005 that an estimated 25,000 people in the UK die from preventable hospital-acquired Venous Thromboembolism (VTE) every year [1-4]. This includes patients admitted to hospital for medical care and surgery. The inconsistent use of prophylactic measures for VTE in hospital patients has been widely reported. A UK survey suggested that 71% of patients assessed to be at medium or high risk of developing deep vein thrombosis did not receive any form of mechanical or pharmacological VTE prophylaxis [5-8].

DESCRIPTION

VTE risk factors

- Regard surgical patients and patients with trauma as being at increased risk of VTE if they meet one of the following criteria.
- Surgical procedure with a total anaesthetic and surgical time of more than 90 minutes or 60 minutes if the surgery involves the pelvis or lower limb.
- Acute surgical admission with inflammatory or intra-abdominal condition.
- Expected significant reduction in mobility.
- One or more of the risk factors shown in box 1.

Risks of VTE

- Active cancer or cancer treatment
- Age over 60 years, obesity (Body Mass Index (BMI) over 30 kg/m)
- Critical care admission
- Dehydration
- Known thrombophilia
- One or more significant medical comorbidities (for example: Heart disease; metabolic, endocrine or respiratory pathologies; acute infectious diseases; inflammatory conditions).
- Personal history or first-degree relative with a history of VTE
- Use of hormone replacement therapy, oestrogen-containing contraceptive therapy
- Varicose veins with phlebitis
- For women who are pregnant or have given birth within the previous 6 weeks

Risk factors for bleeding

- Active bleeding
- Acquired bleeding disorders (such as acute liver failure)
- Concurrent use of anticoagulants known to increase the risk of bleeding (such as warfarin with International Normalised Ratio (INR) higher than 2)
- Lumbar puncture/epidural/spinal anaesthesia expected within the next 12 hours
- Lumbar puncture/epidural/spinal anaesthesia within the previous 4 hours
- Acute stroke
- Thrombocytopenia (platelets less than 75 × 109/l)
- Uncontrolled systolic hypertension (230/120 mmHg or higher)
- Untreated inherited bleeding disorders (such as haemophilia and von willebrand's disease)

Mechanical VTE prophylaxis

Base the choice of mechanical VTE prophylaxis on individual patient factors including clinical condition, surgical procedure and patient preference. Choose any one of:

- AntiEmbolism Stockings (AES), thigh or knee length
- Foot impulse devices
- Intermittent pneumatic compression devices (thigh or knee length)

Contraindications of antiembolism stockings

Do not offer antiembolism stockings to patients who have;

- Suspected or proven peripheral arterial disease
- Peripheral arterial bypass grafting

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- Peripheral neuropathy or other causes of sensory impairment
- Any local conditions in which stockings may cause damage, for example fragile 'tissue paper' skin, dermatitis, gangrene or recent skin graft.
- Known allergy to material of manufacture
- Cardiac failure
- Severe leg oedema or pulmonary oedema from congestive heart failure
- Major limb deformity preventing correct fit
- Use caution and clinical judgement when applying antiembolism stockings over venous ulcers or wounds.

Audit objective

Our audit objective is to find out.

- Were all the patients assessed for VTE and bleeding risks
- Any perioperative period in which patients were not on AES
- Was the pharmacological prophylaxis considered as per the guideline?

Audit standards

- All patients on admission should be assessed to identify those who are at increased risk of VTE.
- All patients should also be assessed for risk of bleeding before offering pharmacological VTE prophylaxis. Do not offer pharmacological VTE prophylaxis to patients with any of the risk factors for bleeding, unless the risk of VTE outweighs the risk of bleeding.

For abdominal surgery

- Offer VTE prophylaxis to people undergoing abdominal (gastrointestinal, gynaecological, urological) surgery who are at increased risk of VTE. For people undergoing bariatric surgery, follow recommendations.
- Start mechanical VTE prophylaxis on admission for people undergoing abdominal surgery.
- Anti-embolism stockings
- Intermittent pneumatic compression.
- Continue until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility.
- Add pharmacological VTE prophylaxis for a minimum of 7 days for people undergoing abdominal surgery whose risk of VTE outweighs their risk of bleeding, taking into account individual patient factors and according to clinical judgement.
- LMWH
- Fondaparinux sodium
- Consider extending pharmacological VTE prophylaxis to 28 days postoperatively for people who have had major cancer surgery in the abdomen.

Audit objective

Our audit objective is to find out.

- Were all the patients assessed for VTE and bleeding risks
- Any perioperative period in which patients were not on AES
- Was the pharmacological prophylaxis considered as per the guideline?

Sample

- Prospective data collection
- Consecutive patients over 2 weeks who come in surgical wards at SGH will be included.
- Patients were excluded if they had contraindications to AES

Summary of results

- Vast majority of the patients were found more than 5 days without AES.
- In one third of the patients there was a significant delay of 3 days between the time of AES prescribed and received.
- Staggering number of postoperative patients was found more than 3 days in the ward without AES.

CONCLUSION

VTE is a common adverse event in patients undergoing surgery. Pulmonary embolism PE is the most common cause of preventable death in patients following surgical procedures. More wide use of prophylaxis, early mobilization and better peri-operative care have reduced the incidence of VTE in surgical patients. However, many patients remain at high risk for VTE because of advanced age, more complicated operative procedures and increased medical co-morbidities. Postoperative DVT of the lower limbs is often asymptomatic; in many patients; fatal PE is the first clinical manifestation of postoperative VTE. For that, it is inappropriate to rely on early diagnosis and treatment of postoperative VTE. If applied carefully, such prophylaxis is cost effective because it reduces the incidence of symptomatic thromboembolic complications, which require costly diagnostic methods and lengthy anticoagulation therapy.

REFERENCES

1. Baglin T. Venous thromboembolism in hospitalised patients: A public health crisis. Br J Haematol. 2008;141(6):764-770.
2. Rashid ST, Thursz MR, Razvi NA, Voller R, Orchard T, Shlebak AA. Venous thromboprophylaxis in UK medical inpatients. J R Soc Med. 2005;98(11):507-512.
3. Piechowski KL, Elder S, Efird LE, Haut ER, Streiff MB, Lau BD. Prescriber knowledge and attitudes regarding non-administration of prescribed pharmacologic venous thromboembolism prophylaxis. J Thromb Thrombolysis. 2016;42(4):463-470.
4. Hill J, Treasure T. Reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital: Summary of the NICE guideline. Heart. 2010;96(11): 879-882.
5. Johnston A, Hsieh SC, Carrier M, Kelly SE, Bai Z. A systematic review of clinical practice guidelines on the use of low molecular weight heparin and fondaparinux for the treatment and prevention of venous thromboembolism: Implications for research and policy decision-making. PloS One. 2018;13(11):e0207410.
6. Flanders SA, Greene MT, Grant P, Kaatz S, Paje D, Lee B, et al. Hospital performance for pharmacologic venous thromboembolism prophylaxis and rate of venous thromboembolism: A cohort study. JAMA. 2014;174(10):1577-1584.
7. Merli GJ, Malangone E, Lin J, Lamerato L, Stern L. Real-world practices to prevent venous thromboembolism with pharmacological prophylaxis in US orthopedic surgery patients: An analysis of an

integrated healthcare database. J Thromb Thrombolysis. 2011;32(1): 89-95.

8. Lederle FA, Zylla D, MacDonald R, Wilt TJ. Venous thromboembolism prophylaxis in hospitalized medical patients and those with stroke: A background review for an American college of physicians clinical practice guideline. Ann Intern Med. 2011;155(9): 602-615.