Making Fat Blood Thin: Venous Thromboembolism Prophylaxis on Discharge in the Morbidly Obese

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Introduction

A 39-year-old female who was morbidly obese [175kg, Body Mass Index (BMI) = 53.7kg/m²] was a planned discharge from the surgical ward post foot open reduction and internal fixation. The surgical team planned for her to be non-weightbearing for 6 weeks requiring venous thromboembolism (VTE) prophylaxis. The pharmacist was consulted to advise which agent would be appropriate on discharge.

Method

A literature review was performed to provide evidence-based recommendations for appropriate discharge VTE prophylaxis in post-operative patients who are morbidly obese.

Evaluation

Evidence was found to be lacking in this cohort, with most evidence in the bariatric surgery setting. With regards to dalteparin, literature supported higher than standard dosing (such as 5000 units twice a day or 7500 units daily) over standard dosing (5000 units daily). Evidence also supported higher dosing of enoxaparin (such as 40mg twice daily and 60mg daily) over standard dosing. There was conflicting advice around the use of rivaroxaban in these patients. Dalteparin 7500 units daily, dalteparin 5000 units twice daily and rivaroxaban 10mg daily were discussed as treatment options (due to evidence, stock availability and local formularly restrictions). Dalteparin 7500 units daily was the pharmacist's primary recommendation (due to previous clinical experience). Rivaroxaban 10mg daily was prescribed on discharge. Scan the QR code for a detailed summary of the literature.

Post-operative VTE prophylaxis in the morbidly obese requires **higher than standard dosing** of low molecular weight heparins.

Implications

Evidence for the best approach to post-operative VTE prophylaxis in morbidly obese patients is lacking. Existing evidence strongly suggests that post-operative VTE prophylaxis in the morbidly obese requires higher than standard dosing of low molecular weight heparins (LMWHs). Dalteparin 7500 units daily (in patients up to 180kg), dalteparin 5000 units twice daily, enoxaparin 40mg twice daily, enoxaparin 60mg daily or 20-30% higher than standard dosing of LMWHs are all reasonable approaches supported by current evidence. Use of rivaroxaban 10mg daily in this cohort is also supported

Consequently, the pharmacist's primary recommendation from these options should be driven by patient factors (such as ability to self administer injections) and formularly restrictions.

Evidence based approaches for VTE prophylaxis

Rivaroxaban 10mg	20-30% Higher LMWH Dalteparin 7500 IU d Dalteparin 5000 IU bd Enoxaparin 60mg d Enoxaparin 40mg bd Rivaroxaban 10mg	20-30% Higher LMWH Daltebarin 5000 IU bd Enoxaparin 60mg d Enoxaparin 40mg bd Rivaroxaban 10mg Warfarin? DOAC + monitoring?
		
BMI < 40	BMI > 40 (>120kg)	>180kg

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