BMI-based Lovenox dosing for VTE chemoprevention post-bariatric surgery is Safe and Effective

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Background

- Bariatric patients are at increased risk of venous thromboembolic events (VTE) in the perioperative period due to the associated comorbidities, patient factors, and nature of the surgeries.
- Lovenox® serves as the mainstay prophylactic following surgery.
- Dosing strategies employed in this population vary.
- Complications related to bleeding are of concern at higher doses.
- The aim of this study was to evaluate the risk of post-operative complications between Weight-based (WBD) and BMI-based (BMIBD) Lovenox® dosing protocols after bariatric surgery.

Methods

- Retrospective study conducted utilizing registry data from 2015-2023 at a single institution classified as a Center of Excellence for Bariatric Surgery.
- WBD (2015-10/2019) and BMIBD (11/2019-2023) of Lovenox® were employed following bariatric surgeries (i.e., sleeve gastrectomy, Roux-en Y gastric bypass, and biliopancreatic diversion with duodenal switch [BPD-DS]).
- The 30-day post-operative outcomes including readmissions, gastrointestinal bleeding, blood transfusions, and VTEs were compared between the two dosing strategies.

Results

- A total of 4339 cases were analyzed in this study with 2233 (51.5%) receiving BMIBD Lovenox® .
  - Higher doses were used in this group.
- Roux-en Y gastric bypass was the most common surgery (75%), followed by sleeve gastrectomy (19%) and BPD-DS (6%).
- There were no significant differences in 30-day adverse outcomes between WBD and BMID (Table 1).
  - Adjusting for baseline differences did not impact the results.

Table 1: Lovenox® dosing and the unadjusted comparison of post-operative outcomes in weight-based and BMI-based dosing.

	Overall N=4339	WBD N=2106	BMIBD N=2233	p-value
Lovenox® dose (mg daily)				
40	28% (n=1214)	38% (n=808)	18% (n=406)	<0.0001
60	23% (n=977)	46% (n=977)	0% (n=0)	
80	34% (n=1454)	12% (n=258)	54% (n=1196)	
100	1% (n=63)	3% (n=63)	0% (n=0)	
120	15% (n=631)	0% (n=0)	28% (n=631)	
Readmission related to Lovenox®	0.6% (n=25)	0.5% (n=11)	0.6% (n=14)	0.649
GI Bleed	0.4% (n=18)	0.4% (n=8)	0.5% (n=10)	0.728
Blood transfusion	1.0% (n=44)	1.2% (n=25)	0.9% (n=19)	0.269
DVT/PE	0.2% (n=9)	0.2% (n=4)	0.2% (n=5)	0.999
Any of above	1.6% (n=69)	1.6% (n=33)	1.6% (n=36)	0.905

Conclusion

- The necessity for VTE prophylaxis following bariatric surgery is well established.
- Objective guidelines regarding dosing are controversial and remain a topic of ongoing discussion and research.
- Higher doses of Lovenox®, as seen when utilizing BMIBD, may place the patients at risk for bleeding complications in the post-operative period.

- There were **no significant differences** in 30-day post-bariatric surgery outcomes as they may relate to weight-based or BMI-based dosing of Lovenox®.
- Although BMI-dosing may require higher doses it is both **safe** and **effective** for VTE chemoprevention.

References

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Disclosures

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