Minimal Effect of Universal Extended Prophylaxis on Rates of Venous Thromboembolic Events After Colorectal Surgery in a Tertiary Care Center. Is Compliance the Problem?

Beth Israel Deaconess Medical Center

Córdova-Cassia Carlos, Wong Daniel, Cotter Mary B, Ward Mary F, Messaris Evangelos, Cataldo Thomas, Poylin Vitaliy

HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

TAP TO GO BACK TO KIOSK MENU

Introduction

- Venous thromboembolic events (VTE) are a significant source of morbidity following colorectal surgery.
- Several studies have shown a reduction in VTE with extended duration post-operative prophylaxis with enoxaparin.
- Despite guidelines endorsing extended prophylaxis in high risk patients, provider compliance is poor.

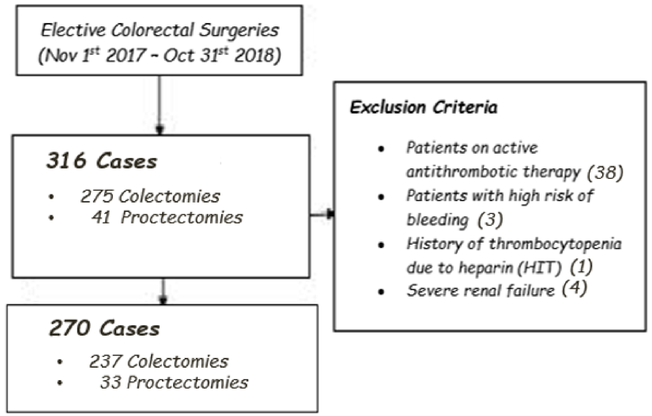
Aim

- To determine whether universal post discharge use of enoxaparin after colorectal surgery is safe and can decrease the rates of VTE by avoiding provider compliance issues.

Methods

- Prospective quality improvement project of patients undergoing colorectal resections.
- All patients undergoing colectomy were prescribed extended duration VTE prophylaxis (30 days) of enoxaparin based on weight.
- Patient adherence was evaluated via phone survey.

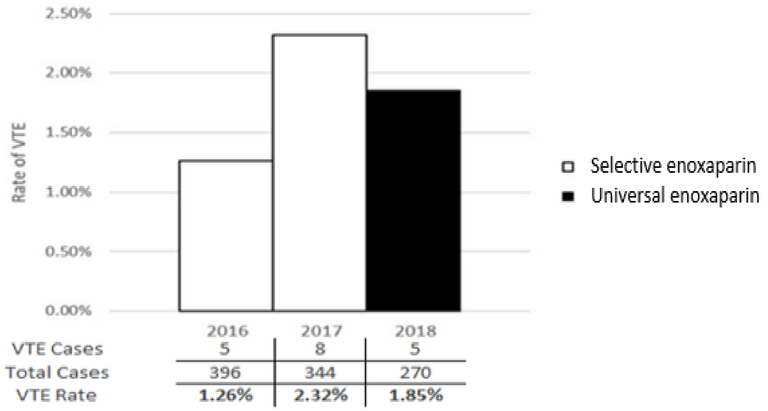
Figure 1: Study Population



Results

- A total of 316 patients underwent elective colorectal surgery during study period, out of which 270 patients were eligible and received extended prophylaxis.
- The rate of VTE during study period was **1.85 %**. There was no significant difference when compared to previous years of selective prophylaxis: **1.26 %** for 2016, **2.32 %** for 2017.
- The clinical significant bleeding rates were similar between universal versus selective prophylaxis with **one episode of bleeding related to enoxaparin in selective and one in universal prophylaxis.**
- **36% of respondents to phone survey reported non-adherence to enoxaparin injections**.

Figure 2: Rate of VTE within 30 days follow-up after elective colorectal surgery



	2016	2017	2018
VTE Cases	5	8	5
Total Cases	396	344	270
VTE Rate	1.26%	2.32%	1.85%

Table 1: Adherence rates to extended enoxaparin prophylaxis in post-operative patients

	Yes	No	Total
Responded to survey	178 (66%)	92 (34%)	270
Completed Course	114 (64%)	64 (36%)	178
Did not complete course			
Reported >3x/week	44 (69%)	20 (31%)	64
Reported >2weeks	61 (95%)	3 (5%)	64

Table 2: Patients demographics and comorbidities

Univariate Analysis

	Full compliance enoxaparin	*No full compliance enoxaparin*	*P value*
Age	**60.8 +/- 1.3**	**55.8 +/- 1.8**	**0.023***
Male	54 (48.6%)	35 (52.2%)	0.643
Length of Stay (LOS)	**5.0 +/- 0.38**	**3.7 +/- 0.26**	**0.011***
Comorbidities			
American Society of Anesthesiologists (ASA)	2.5 +/-0.1	2.3 +/- 0.1	0.146
Body Mass Index (BMI)	27.1 +/- 0.6	27.5 +/- 0.8	0.669
Weight loss	1.95 +/- 0.1	1.63 +/- 0.1	**0.015***
Diagnosis			
Cancer	41 (23.03%)	36 (20.22%)	0.185
Inflammatory Bowel Disease (IBD)	27 (15.17%)	16 (8.99%)	0.934
Previous DVT/PE Event	**12 (10.53%)**	**49 (4.69%)**	**0.011***
Charlson Comorbidity Index Total Points	**1.55 +/- 0.2**	**2.23 +/- 0.2**	**0.033***

Multivariate Analysis

	OR	*Odds Ratio (95% Confidence Interval)*	*P value*
Age	1.31	[0.77 – 2.25]	0.132
Length of Stay (LOS)	**1.2**	**[1.07 – 1.18]**	**0.015**
Previous DVT/PE Event	1.79	[0.84 – 3.83]	0.078
Weight Loss	**3.1**	**[1.19 – 2.05]**	**0.016**
Charlson Comorbidity Index Total Points	0.52	[0.18 – 1.46]	0.242

Table 3: Patient reported reasons for non-adherence to extended enoxaparin prophylaxis

Reason for non-adherence	N = 64
Unable to perform injections	45 (70%)
Pain	28 (44%)
Injections not preferred	20 (31%)
Patient instructed to stop treatment (bleeding)	1 (1.6%)

Conclusions

- Universal use of extended duration enoxaparin prophylaxis in post-operative colorectal surgery patients is safe, but does not decrease rates of thromboembolic events.
- High risk for VTE including previous events and more comorbidities was associated with low compliance; on the other hand, longer hospital stay was associated with improved post discharge compliance.
- High rates of non-adherence, especially in high risk patients, are likely a significant contributing factor.