

## **Is Improper Weight-Based Dosing of Prophylactic Enoxaparin Associated with Venous Thromboembolism Events following Acetabular Open Reduction and Internal Fixation?**

Anna P Meyer<sup>1</sup>, Michael A. Maceroli, Adam Boissonneault<sup>2</sup>, Roberto C Hernandez-Irizarry<sup>3</sup>, Patrick Nian<sup>4</sup>

<sup>1</sup>Emory University, <sup>2</sup>University of Maryland Baltimore, Shock Trauma Cen, <sup>3</sup>Emory University School of Medicine,

<sup>4</sup>Department of Orthopaedic Surgery, SUNY Downstate

### **INTRODUCTION:**

Venous Thromboembolism (VTE) events account for approximately 100,000 annual deaths in the United States (US). Operative traumatic fractures increase the risk of these events, particularly in fractures of the lower extremity and acetabulum. Enoxaparin has been widely accepted as the chemoprophylaxis of choice, however, dosing can vary, especially in individuals with higher body weight. The purpose of our study was to determine if improper weight-based dosing of enoxaparin was associated with VTE events in patients with operative acetabular fractures.

### **METHODS:**

We retrospectively reviewed 366 patients at our urban level-I trauma center who underwent operative fixation of an acetabular fracture who received some dosage of prophylactic enoxaparin. Using a weight-based dosing system comprised of BMI tiers, we determined which patients received “proper” dosing and which did not. It was then determined if each patient had a VTE event, including deep vein thrombosis (DVT) and pulmonary embolism (PE). Pearson chi-square and binary logistic regression analyses were performed.

### **RESULTS:**

Of the 366 patients included, 165 did not receive proper weight-based dosing and 198 did. Of those, 20 patients had any VTE event. Four patients suffered a PE, 11 were found to have DVTs, and 3 had both PE and DVT. Of these 20, 13 received proper dosing of enoxaparin based on their BMI. There was not a significant difference in the occurrence of VTE events. When controlling for other risk factors of VTE, there was still no difference in weight-based vs. non-weight-based dosing.

### **DISCUSSION AND CONCLUSION:**

Our results showed that patients with operative acetabular fractures were only receiving proper weight-based dosing 54% of the time. We also found that whether or not patients received dosing based on their BMI did not play a role in the incidence of a VTE event, which held true, even when controlling for other risk factors of VTE.