**Significant Reduction of Pulmonary Embolism in Orthopaedic Trauma Patients**

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**Purpose:** This is a report of results of a protocol intended to lessen incidence of pulmonary embolism (PE) among orthopaedic trauma patients. The protocol centered on rapid identification of high-risk patients, higher enoxaparin dosing, and use of inferior vena cava filters (IVCFs) in those patients. We did a retrospective review of the number of PEs seen in orthopaedic trauma inpatients from September to December 2016, when our protocol was in place, and compared it to the number from September to December 2015.

**Methods:** Based on our previous PE risk algorithm, we developed a protocol to prevent PE in high-risk patients. Risk calculation includes age, injury mechanism, method of transport to the ER, heart rate on arrival, obesity, presence of injury to the thorax, abdomen, or lower extremities, pelvis, or acetabulum, and planned admission to the surgical ICU. If possible, high-risk patients are given their first dose of enoxaparin in the ER. 40 mg BID is used for patients >50 kg and 30 mg if 0.5 IU/mL, the dose is reduced.

**Results:** From September 1 through December 31, 2015, our hospital admitted 420 orthopaedic trauma patients. 51 were classed as high risk for PE. In September through December 2015, 9 sustained PE, 1 of which was fatal. From September 1 through December 31, 2016, our hospital admitted 368 orthopaedic trauma patients with comparable age and ISS to 2015. 40 were at high risk for PE, 1 sustained a nonfatal PE. PE incidence from September through December 2016 was significantly lower than in 2015 ($P = 0.02$). Overall, 23 patients managed under the new protocol had IVCFs placed. 15 had their filters removed. 3 died with filters in place. The remaining have follow-up with interventional radiology for removal. There were no complications during filter placement or removal. 2 IVCFs were found to have clot beneath them which prevented filter removal. 1 patient had hemorrhage felt to be attributable to enoxaparin.

**Conclusion:** We aimed to identify those patients at highest risk for PE. Our protocol emphasizes more robust enoxaparin dosing, and more frequent use of IVCF, but only among those at highest risk. Our protocol was successful at lessening the incidence of PE, with a low complication rate. We expect that our results can be replicated at other centers.