Evaluation of Unfractionated Heparin (UFH), Low Molecular Weight Heparin (LMWH), and Warfarin for deep vein thrombosis (DVT) prophylaxis in high risk trauma patients.

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Introduction/Background:
Injured patients are at great risk for development of DVT. Without any prophylaxis, the incidence is 58%. Multiple studies have demonstrated that prophylaxis can significantly reduce the incidence of VTE in this population. However, despite prophylaxis, the frequency of DVT remains 25% in patients sustaining major trauma. The most effective modality of prophylaxis has not yet been determined.
Several studies have compared the effectiveness of LMWH and UFH for prophylaxis of VTE in trauma patients. Trials thus far have yielded inconclusive results. Warfarin has been reported to be beneficial for patients with isolated hip fractures (a patient population at high risk for development of VTE). Despite lack of supporting scientific data, some trauma surgeons have used warfarin for DVT prophylaxis to avoid the risks of long term heparin prophylaxis and patient discomfort with multiple, repeated subcutaneous injections. The intent of this study is to evaluate two methods of DVT prophylaxis in high-risk trauma patients.

Rationale/Hypothesis:
We hypothesized that use of UFH and warfarin prophylaxis for venous thromboembolic events (VTE) would prove more effective than LMWH in high-risk trauma patients.

Methods:
High-risk trauma patients with a RAP score >= 5 who met the inclusion criteria without meeting any of the exclusion criteria were randomized to receive either UFH and warfarin or LMWH after giving informed consent. The primary outcome was the incidence of symptomatic and asymptomatic acute DVT or pulmonary embolism (PE). Secondary outcome measures were adverse events and complications due to the prophylactic agent used. Patients were monitored until study completion (30 days) or until a DVT or PE was diagnosed.

Results:
Patient accrue has been slow. There are an insufficient number of patients to warrant statistical analysis.

Conclusions:
We expect to find that a combination of unfractionated heparin followed by warfarin therapy will prove more effective as a means of DVT prophylaxis in high-risk trauma patients compared with low molecular weight heparin. The combination of unfractionated heparin and warfarin will also help to reduce the cost associated with DVT prophylaxis