

## **Doctor's Orders: An Analysis of Patient Refusal of Pharmacologic Venous Thromboembolism Prophylaxis**

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### **Abstract**

**Introduction:** Venous thromboembolism (VTE) occurs in between 10-40% of patients during or after hospitalizations. Pharmacologic VTE prophylaxis is refused almost twice as often by inpatients than any other medication. We sought to define factors influencing noncompliance with VTE prophylaxis, exploring relative contributions of nursing unit culture, clinical service type, and medication characteristics on patient refusal of VTE prophylaxis at a single institution.

**Methods:** Retrospective review of inpatients at a quaternary, urban academic medical center over a five-year period who were prescribed a pharmacologic agent for VTE prophylaxis. Variables reviewed included medication type, administration timing, hospital unit, and admitting service. Refusal rates were compared across groups using a parametric ANOVA with a Duncan multiple comparison deflator. A forward selection logistic regression model was performed to determine relative contribution of each variable after adjustment for other variables.

**Results:** >180,000 doses of pharmacologic VTE prophylaxis for 192,704 patients were analyzed. Enoxaparin was most commonly prescribed. The pharmacologic agent was associated with significantly different rates of refusal: heparin 8.4%, enoxaparin 4.7%, and fondaparinux 2.6% ( $p<0.05$  for all). Dose timing was also associated with a small but significant differential refusal rate: 12 AM- 8AM 6.9%, 8AM-4PM 6.2%, and 4PM-12 AM 6.0% ( $p<0.05$ ). Units with primarily medicine patients had significantly higher rates of refusal (9.9%) compared to surgery (2.6%) or ICU units (2.6%) ( $p<0.05$ ). Surgical patients on surgical units had the lowest rate of refusal (2.3%) compared to medical patients on medical units (10%) ( $p<0.05$ ).

**Conclusion:** Multiple factors are associated with refusal of pharmacologic VTE prophylaxis. Enoxaparin or fondaparinux is less likely to be refused than unfractionated heparin raising questions about injection burden on refusals. Prescribing a once daily dose in the afternoon may increase adherence. Surgical services and units had lower rates of patient refusal which may be due to differences in clinical microsystem culture.