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## **Chemical Thromboprophylaxis and obesity: A cross-sectional study of Anti-Factor Xa levels in post-operative surgical patients**

Category: Complications of Bariatric Surgery

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Venous thromboembolism is a recognised post-operative complication, with increased risk in obese patients. Studies have suggested obese patients may need higher doses of low molecular weight heparin (LMWH) for adequate post-operative thromboprophylaxis compared to non-obese.

This study aimed to evaluate whether standard dosing of thromboprophylactic LMWH was adequate in post-operative surgical patients at our institution, and whether obesity was associated with suboptimal thromboprophylaxis.

### **METHOD**

Peak serum AFXa levels were tested in 30 post-operative general surgical patients who had at least three consecutive daily doses of 5000 units of dalteparin subcutaneously, excluding those with other anticoagulation or renal impairment requiring dose adjustment. Results between 0.2 - 0.5 units/mL were considered to be within the prophylactic range. Total body weight (TBW), lean body weight (LBW), body mass index (BMI) and body surface area (BSA) were correlated with AFXa levels.

### **RESULTS**

15 patients (50%) had AFXa levels in the prophylactic range and the other 15 patients had subtherapeutic AFXa levels. The mean AFXa level was 0.21 (range 0.1 - 0.47) units/ml. BMI ranged from 19.7 to 54.4. Those with BMI < 40 (21 patients) had a mean AFXa level of 0.22, compared with a mean AFXa level of 0.19 in those with BMI > 40 (9 patients) (no significant difference). There was only weak r-correlation of AFXa levels with TBW and BSA, but no correlation with BMI or LBW.

### **CONCLUSION**

There has been contention in the literature regarding prescription of higher LMWH prophylactic doses in obese patients than non-obese. However, our study does not support this hypothesis, as no correlation between AFXa levels and BMI was demonstrated.

Future studies with a much larger sample size measuring AFXa levels as well as clinical endpoints after variable doses of LMWH may be useful to determine what dose of prophylactic LMWH is optimal post-operatively for patients of any weight.