Abstract

Objective: The aim of this study was to determine the anti-factor Xa levels in patients receiving prophylactic enoxaparin sodium in the intensive care unit (ICU).

Design: A cross-sectional study design was followed.

Setting: Multi-disciplinary ICU at Chris Hani Baragwanath Academic Hospital affiliated with the University of the Witwatersrand.

Participants: Seventy-three patients admitted to the ICU receiving 40 mg enoxaparin sodium daily were enrolled into this study.

Interventions: Anti-factor Xa level samples were taken from patients receiving prophylactic enoxaparin following the second dose administered in the ICU. The prophylactic and the sub-prophylactic groups of patients were also compared for age, sex, weight, body mass index, total bilirubin, serum albumin and APACHE II score.

Main outcome measures: Anti-factor Xa levels after receiving the second prophylactic dose of enoxaparin sodium in ICU.

Results: Anti-factor Xa levels were prophylactic (0.2 – 0.6 IU/ml) in 44 (60.3%) patients and sub-prophylactic (< 0.2 IU/ml) in 29 (39.7%) patients. The mean (SD) actual delivered dose of enoxaparin per kilogram body weight was significantly higher, at 0.59 (0.11) mg/kg in the prophylactic group compared to 0.53 (0.13) mg/kg the sub-prophylactic group, (p=0,043). Patients in the sub-prophylactic group had significantly lower serum albumin levels compared to those in the prophylactic group. Total bilirubin levels were not found to be significantly different between the two groups, (p=0.110).

Conclusion: A fixed prophylactic 40 mg dose of enoxaparin was associated with a high proportion of sub-prophylactic anti-factor Xa levels. Weight-based dose and serum albumin level were independent predictors of achieving the prophylactic target range.