

# Estimated glomerular filtration rate versus creatinine clearance to determine anticoagulant dosage after lower-limb orthopedic surgery

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## Abstract

**Aim:** This retrospective study aimed to determine whether different renal function estimation formulas affect the incidence of venous thromboembolism (VTE) and bleeding when anticoagulant dosages are determined. **Methods:** The study included patients who underwent lower-limb orthopedic surgery and were treated with anticoagulants between January 2017 and March 2020 at Yaizu City Hospital. The appropriateness of anticoagulant dosing was assessed using creatinine clearance (CCr), estimated glomerular filtration rate (eGFR), and de-indexed eGFR without correction for body surface area, and the incidence of VTE and bleeding was compared among the different renal function estimation formulas. **Results:** The median values for body surface area, CCr, eGFR, and de-indexed eGFR were 1.40m<sup>2</sup>, 56.0mL/min, 73.0mL/min/1.73m<sup>2</sup>, and 60.9mL/min, respectively. There was no significant difference in the incidence of VTE among the different renal function estimation formulas. However, when the threshold for dose reduction or contraindication was determined by eGFR rather than CCr, the incidence of bleeding was significantly higher in the group that was overdosed in CCr (6.0% vs 25.7% p<0.05). Similarly, when the threshold for dose reduction or contraindication was determined by de-indexed eGFR rather than CCr, the incidence of bleeding was significantly higher in the group that was overdosed in CCr (7.5% vs 28.6% p<0.05). **Conclusion:** It is necessary to set the dosage of anticoagulants based on CCr for patients with a small body surface area in the field of orthopedics to avoid the risk of bleeding.

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