

## **Incidence and Risk Factors of Clinically Important Venous Thromboembolism in Tibial Plateau Fractures**

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**Purpose:** There are multiple reports on venous thromboembolism (VTE) for major orthopaedic surgery. The incidence and risk factors of VTE in tibial plateau fractures are reported less commonly. This study aimed to investigate the incidence and risk factors of clinically important VTE (CIVTE) in patients with tibial plateau fractures.

**Methods:** A total of 462 patients aged 18 years and older were retrospectively identified as undergoing operative fixation of tibial plateau fractures from 2003 to 2018. All the suspected CIVTE patients were examined by ultrasonography or/and CT scan. Univariate and multivariate analyses were used to assess the association in patient demographics between CIVTE and no VTE. Variables that were significant at  $P < 0.05$  in univariate analyses entered into a multivariable logistic regression model to evaluate the risk factors.

**Results:** 39 (8.4%) of 462 patients developed CIVTE in 75.5% (394/462) of patients with the chemical prophylaxis. Pulmonary embolism (PE) and deep vein thrombosis (DVT) were examined in 18 (3.9%) and 21 (4.54%) patients respectively. Male (OR [odds ratio], 11.267;  $P = 0.002$ ), associated with traumatic brain injury (OR, 4.777;  $P = 0.041$ ), associated with spine injury (OR, 9.506;  $P < 0.001$ ), associated with extremity injury (OR, 3.695;  $P = 0.003$ ), the time from injury to definite operation (OR, 1.062;  $P = 0.004$ ), and length stayed in ICU (OR, 1.101;  $P = 0.001$ ), were all risk factors for CIVTE. Two patients died in the hospital after the serious injury.

**Conclusion:** The incidence of CIVTE in tibial plateau fracture was high (8.4%). The males, associated with traumatic brain injury, associated with spine injury, associated with extremity injury, the time from injury to definite operation, and length stayed in ICU were the independent risk factors.