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Symptomatic Venous Thromboembolism after Total Knee Replacement: A Population-Based Asian Study

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Background:
In Western countries, symptomatic venous thromboembolism (VTE) is a major preventable perioperative complication; the greatest risk follows major orthopedic surgery. Limited data exist regarding the symptomatic VTE after total knee (TKR) replacement surgery in Asia or Taiwan.

Methods:
A retrospective, population-based cohort study was a randomized, systemic sampling of one million beneficiaries for National Health Insurance from 2000 to 2009. There were totally 7,066 patients after TKR. The patients with symptomatic pulmonary embolism and deep vein thrombosis after TKR within 3 months were used to examine the incidence of symptomatic venous thromboembolism. The duration in hospital and intensive care unit were also analyzed.

Results:
The incidence rate of symptomatic pulmonary embolism and deep vein thrombosis was 1.67 and 11.56 per 1,000 patients respectively. The rate of using anticoagulation or anti-platelet treatment was only 19.78 per 1,000 patients. The longer average staying days in hospital or in intensive care unit of symptomatic VTE patients were 12.11 vs. 9.07 and 48.50 vs. 27.52 comparing to without events.

Conclusions:
The incidence rates of symptomatic VTE after TKR was much lower in Taiwan, Asia, than in the Western countries. However, in the high risk patients, the prophylaxis treatment is still highly recommended. Although we could not know the incidence of subclinical VTE after TKR based on the population-based cohort study, the incidence of symptomatic VTE after TKR was lower than those of the western countries. Since most of the patients (98%) after TKR in the same cohort did not use anticoagulant or antiplatelet for VTE prophylaxis, we suggest the guidelines or protocols for chemical prophylaxis after TKR in some ethnic population, such as the Han Chinese, need to be adjusted for dosing amount, duration, or frequency. A comprehensive, prospective, randomized, and dose-controlled study should be of value for this preventable complication after TKR.