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Venous thromboembolism risk in foot and ankle surgical patients: a population-based case-control study

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ABSTRACT

Introduction: Venous thromboembolism (VTE) is the leading cause of preventable hospital death. There are several risk factors for VTE, of which orthopedic surgery is an important one. VTE risk is highest following major orthopedic surgery, and therefore, some form of prophylactic therapy is usually recommended. In contrast, the risk for VTE following foot and ankle surgery is less clear, as are guidelines on VTE prophylaxis in these patients.

Objective: To estimate the risk of VTE and the duration of the increased risk period after foot and ankle surgery.

Methods: Data from a large population-based case-control study (the Multiple Environmental and Genetic Assessment of risk factors for venous thrombosis [MEGA] study) on the etiology of venous thrombosis were used (4721 cases; 5638 controls). Odds ratios (ORs) with 95% confidence intervals (CIs), adjusted for age, sex and body mass index (ORadj), were calculated for patients undergoing any foot or ankle intervention before the index date (VTE date or control date).

Results: The 263 cases and 94 controls underwent any orthopedic intervention in the year before the index date for an ORadj of 3,74 (95% CI 2,91-4,80). The ORadj in the first 90 days was 11,35 (95% CI 7,28-17,70). Fifty-five cases and 20 controls had a foot or ankle intervention in the year before the index date, resulting in a three-fold increased risk for VTE (OR 3,29, 95% CI 1,98-5,49). VTE risk was highest in the first 30 (ORadj 10,15 (95% CI 3,04-33,85)) and 90 days following surgery (ORadj 12,42, 95% CI 4,43-34,84). In 34 patients, the surgery was trauma-related, while 43 patients underwent elective surgery. Traumatic surgery was associated with a higher risk than elective surgery with an OR of 13,85 (95% CI 1,77-108,36) and 8,32 (95% CI 1,87-36,94), respectively, at 30 days.

Conclusion: Foot and ankle procedures were associated with an increased VTE risk, which was highest in the first 90 days following surgery. Trauma-related surgery was associated with a higher VTE risk than elective surgery. These results are important for decisions regarding thromboprophylactic measures following foot and ankle surgery.

Keywords: Venous thrombosis; Risk factors; Orthopedic surgery.

