Current Rates and Trends of Venous Thromboembolism After Total Hip and Knee Arthroplasty

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¹Orthopedic Surgery, Baptist Health Orthopedic Care, ²Baptist Health Orthopedic Care INTRODUCTION:

The volume of THA and TKA procedures continues to grow. Venous thromboembolism remains a significant complication, with reported incidence rates between 0.45 and 5.30%. Enhanced rapid recovery pathways and chemoprophylaxis evolution may correlate with decreased VTE events over time. This study aims to analyze recent trends of VTE post-THA and TKA.

METHODS:

Adults undergoing THA or TKA between 2009 and 2021 were identified from the NSQIP database using CPT codes 27130 and 27447. DVT and PE were defined using the standard NSQIP database definitions. VTE was defined as the occurrence of a DVT and/or PE event in the same patient. The 30-day incidence of VTE, DVT, and PE were trended over time. Multivariate regression analyses were performed to estimate the adjusted risk of events by year of surgery relative to 2009 and to identify any associated risk factors.

RESULTS:

A total of 338,260 THAs and 530,644 TKAs were included. Trends of 30-day VTE decreased over the study period in THA (0.8% to 0.5%, p<0.001) and TKA (1.8% to 0.9%, p<0.0001). Significant trends over the study period were observed for both DVT (1.2% to 0.6%) and PE (0.8% to 0.4%) following TKA (both p<0.001) and for DVT (p<0.05) following THA. After adjusted regression analyses, in 2021, the odds of 30-day VTE (OR 0.67, p<0.001), DVT (OR 0.69, p<0.05), and PE (OR 0.59, p<0.01) after TKA were significantly lower compared to 2009.

DISCUSSION AND CONCLUSION:

The 30-day VTE incidence following THA and TKA has significantly decreased since 2009 in our study population. Both DVT and PE have decreased in the TKA population. These results could be attributed to improved preoperative patient optimization and enhanced recovery pathways, despite the widespread adoption of less aggressive chemoprophylaxis.

