

**MetroHealth Medical Center****RESEARCH DAY 2023****Abstract Submission Form**

**Poster Title:** Trends and Outcomes for Pharmacological Thromboprophylaxis in Total Knee Arthroplasty 2012-2022: Evaluating the Efficacy of Aspirin in Patients with Differing Risk Profiles

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**Introduction:** Deep vein thrombosis (DVT) and pulmonary embolism (PE) are risks following total knee arthroplasty (TKA), as venous thromboembolism (VTE) is a leading cause of fatality. Advancements in chemoprophylaxis have reduced VTE incidence, but drug choice debates persist. While the International Consensus Meeting for VTE (ICM-VTE) in 2022 proclaimed low-dose aspirin to be the most effective agent in patients across all risk profiles, there remains a lack of large sample data sets supporting this assertion. Thus, we aimed to characterize the clinical use of various chemoprophylactics in TKA, as well the efficacy of aspirin compared to other agents in patient groups stratified by VTE risk profiles.

**Methods:** This study utilized TriNetX, a federated research network that aggregates de-identified electronic health record data from over 92 million patients across the United States. The proportion of TKAs receiving aspirin versus other prophylaxis within a 14-day post-operative window was calculated in the high risk, low risk, and overall population from 2012 to 2022. VTE risk was based upon predictive comorbidities established in the ICM-VTE and recent publications. The odds ratios (OR) and 95% confidence intervals (CI) for receiving various classes of thromboprophylaxis were calculated. Odds of DVT, PE, and other complications were also assessed in the 90-day postoperative period for propensity matched cohorts receiving aspirin-only versus other prophylaxis in both high- and low-risk populations.

**Results:** Amongst a total 149,928 TKAs, the proportion of patients receiving aspirin increased from 48% to 83% between 2012 and 2022, while the proportion of patients receiving other prophylaxis decreased from 95.0% to 28.6%. Aspirin use doubled in both high- and low-risk populations. Aspirin (OR:1.33, 95% CI: 1.30-1.36) had higher odds of being administered to low-risk patients, while all other medications had higher odds of being administered to high-risk patients. Within the 90-day postoperative period, both low- and high-risk patients had decreased odds of DVT (OR: 0.14, 95% CI: 0.11-0.17) and PE (OR: 0.11, 95% CI: 0.08-0.14) when given aspirin-only prophylaxis compared to other regimens. Odds of bleeding, infection, and revision were also lower.

**Conclusion:** These results support the statement released from the ICM-VTE. As such, surgeons who are not already using aspirin-only prophylaxis may wish to switch to this cost-effective, safe measure.