

Background

- Venous thromboembolism (VTE) remains an important complication following revision total hip arthroplasty (rTHA)
- rTHA for periprosthetic joint infection (PJI) might be associated with higher risk of VTE complications compared to aseptic rTHA.
- Previous studies reported Aspirin to be safe and effective in prevention of VTE after aseptic rTHA [1].
- However, there is no literature on aspirin use in VTE prevention after hip debridement, antibiotics and implant retention (DAIR) for PJI.

Objectives

We conducted a propensity-score matched analysis to:

Compare the safety and effectiveness of Aspirin monotherapy with non-Aspirin monotherapy and dual therapy following hip DAIR in preventing VTE

Methods

- We conducted a retrospective analysis using the Research Network on the TriNetX healthcare database (2005 – 2025)
- We identified adult patients undergoing their first hip DAIR for PJI using ICD-10 and CPT codes for rTHA and/or hip arthrotomy.
- Patients were required to have a preoperative PJI diagnosis.
- Patients with spacer insertion, removal or exchange codes on same day of surgery were excluded.
- Stratified based on the postoperative VTE drug prescribed (defined as prescription within 2 weeks after surgery [2]) into 3 cohorts:

1. Aspirin

2. Non-Aspirin (Rivaroxaban, Apixaban or Enoxaparin)

3. Dual therapy (Aspirin and a non-Aspirin)
- Ensured no overlapping prescriptions in monotherapy cohorts.
- 1:1 propensity score matched for relevant comorbidities, including age at surgery, sex, history of VTE, stroke, cancer, coagulopathy, body mass index, tranexamic acid use, glycemic control and smoking among other variables.
- Compared outcomes after matching using the Aspirin cohort as reference.
- Outcomes of interest included:
 - 90-day risk of VTE, bleeding, transfusion, wound disruption, death, surgical site infection (SSI) and re-revision surgery
 - 1-year risk of death and re-revision surgery.
- TriNetX built-in tool for statistical analysis.
- Used chi-square test for categorical variables and student t-test for continuous variables
- Significance threshold was set at p<0.05.

Results

The initial database query resulted in 1,721 patients, with 626 receiving Aspirin, 714 receiving non-aspirin and 381 receiving dual therapy.

Results

- Non-Aspirin vs Aspirin*
- After matching, each cohort consisted of 401 patients with adequate baseline covariate balancing.
 - 90 days: Non-Aspirin monotherapy was associated with similar complication rates compared to Aspirin monotherapy (Table 1).
 - 1 year: Similar death and re-revision rates (Table 2).
- Dual therapy vs Aspirin*
- After matching, each cohort consisted of 325 well-balanced patients.
 - 90 days: Dual therapy was associated with similar complication rates compared to Aspirin monotherapy (Table 1).
 - 1 year: Similar death and re-revision rates (Table 2).

90-day outcomes	Non-Aspirin %	Aspirin %	RR (95% CI)	p-value	Dual therapy %	Aspirin %	RR (95% CI)	p-value
DVT	3.99%	3.74%	1.07 (0.54, 2.13)	0.855	6.46%	4.31%	1.50 (0.78, 2.90)	0.224
VTE	5.49%	5.74%	0.96 (0.54, 1.69)	0.878	8.00%	6.46%	1.24 (0.71, 2.16)	0.449
Re-revision	12.22%	14.21%	0.86 (0.60, 1.23)	0.404	12.31%	12.92%	0.95 (0.64, 1.43)	0.813
Death	3.74%	4.99%	0.75 (0.39, 1.44)	0.388	4.62%	4.62%	1.00 (0.50, 2.01)	1.000
Transfusion	9.73%	8.73%	1.11 (0.72, 1.72)	0.626	10.15%	8.31%	1.22 (0.75, 1.99)	0.416
Bleeding	5.49%	6.98%	0.79 (0.46, 1.35)	0.381	4.00%	6.15%	0.65 (0.33, 1.28)	0.211
Wound disruption	8.73%	9.48%	0.92 (0.59, 1.43)	0.713	8.31%	9.54%	0.87 (0.53, 1.43)	0.582
SSI	4.24%	5.49%	0.77 (0.42, 1.43)	0.412	5.54%	4.62%	1.20 (0.62, 2.34)	0.592
Confidence interval (CI), Risk ratio (RR), Deep vein thrombosis (DVT), Pulmonary embolism (PE), Venous thromboembolism (VTE), Surgical site infection (SSI).								

Table 1: Summary of the 90-day outcomes after matching 1:1 comparing use of aspirin with non-Aspirin and dual therapy after septic hip DAIR

1-year outcomes	Non-Aspirin %	Aspirin %	RR (95% CI)	p-value	Dual therapy %	Aspirin %	RR (95% CI)	p-value
Re-revision	23.94%	19.20%	1.25 (0.96, 1.63)	0.103	19.39%	18.46%	1.05 (0.76, 1.44)	0.764
Death	8.73%	7.23%	1.21 (0.75, 1.94)	0.434	9.85%	7.39%	1.33 (0.80, 2.21)	0.263
Confidence interval (CI), Risk ratio (RR)								

Table 2: Summary of the 1-year outcomes after matching 1:1 comparing use of aspirin with non-Aspirin and dual therapy after septic hip DAIR

Conclusion

- First study to compare VTE prophylaxis agents in the setting of hip DAIR for PJI
- Aspirin was not associated with increased risk of VTE, bleeding, wound complications, death or re-revision.
- This data suggests that Aspirin is safe and non-inferior to other anticoagulant regimens for VTE prevention following hip DAIR for PJI
- Further prospective studies are needed to confirm these findings.

References

1. Kim BI, Suhardi JV, Gausden EB, Blevins JL, Della Valle AG, Lee GC. Aspirin Is Noninferior to Other Anticoagulants in Low-Risk Patients for Venous Thromboembolism Undergoing Aseptic Revision Total Hip Arthroplasty. J Arthroplasty. 2026 Apr 1:S0883-5403(26)00232-9. doi: 10.1016/j.arth.2026.03.031. Epub ahead of print. PMID: 41936472.

2. Porto JR, Lavu MS, Hecht CJ 2nd, Arnold KE, Acuña AJ, Kaelber DC, Parvizi J, Kamath AF. Low-Dose Aspirin: The Safest Prophylactic Approach for Venous Thromboembolism Prevention Following Total Hip Arthroplasty Across All Risk Profiles. J Arthroplasty. 2026 May;41(5):1525-1532. doi: 10.1016/j.arth.2025.09.026. Epub 2025 Sep 22. PMID: 40992597.