How Does Aspirin Compare to Other Anticoagulants in Patients Undergoing Hip Prosthesis Explantation with Spacer Insertion?

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Background

- Venous thromboembolism (VTE) remains an important complication following total hip revision arthroplasty (rTHA)
- rTHA for periprosthetic joint infection (PJI) is associated with increased risk of VTE.
- Previous studies reported Aspirin to be safe and effective in prevention of VTE after rTHA without separating septic from aseptic indications [1, 2].
- However, there is limited literature on optimal VTE prevention drug after hip explantation with spacer insertion 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 explantation with spacer insertion 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 explantation with spacer insertion for PJI using ICD-10 and CPT codes.
- Patients were required to have a preoperative PJI diagnosis and a concomitant spacer insertion code on the same day of surgery.
- Patients with spacer removal/exchange and/or arthrotomy codes on same day of surgery were excluded.
- Stratified based on the postoperative VTE drug prescribed (defined as prescription within 2 weeks after surgery [3]) 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.
- Outcomes of interest included 90-day risk of:
 - VTE, transfusion and wound disruption
- 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 1,769 patients, with 597 patients receiving Aspirin, 819 patients receiving non-Aspirin and 353 patients receiving dual therapy.

Non-Aspirin vs Aspirin

- After matching, each cohort consisted of 477 well-balanced patients.
- 90 days: Non-Aspirin monotherapy was associated with similar rates of VTE transfusion and wound disruption compared to Aspirin monotherapy (Table 1).

Dual therapy vs Aspirin

- After matching, each cohort consisted of 306 well-balanced patients.
- 90 days: Dual therapy was associated with similar rates of VTE transfusion and wound disruption compared to Aspirin monotherapy (Table 1).

Outcome	Non-ASA (n=477)	ASA (n=477)	RR (95%CI)	p-value	Dual therapy (n=306)	ASA (n=306)	RR (95%CI)	p-value
VTE	4.40%	2.73%	1.62 (0.82-3.19)	0.162	5.56%	3.60%	1.55 (0.74-3.25)	0.246
Transfusion	13.00%	11.32%	1.15 (0.82-1.62)	0.428	14.71%	13.40%	1.10 (0.74-1.63)	0.642
Wound disruption	4.40%	3.77%	1.17 (0.63-2.16)	0.624	4.90%	4.58%	1.07 (0.53-2.18)	0.849

Aspirin (ASA), Confidence interval (CI), Risk ratio (RR), VTE (venous thromboembolism).

Table 1: Summary of the results after matching 1:1 comparing use of aspirin with other anticoagulants and dual therapy after septic hip explantation with spacer insertion.

Discussion

- Aspirin was not associated with increased risk of VTE, bleeding or wound disruption compared to non-Aspirin and dual therapy.
- Data adds to growing body of literature reporting on the safety and effectiveness of Aspirin in the multiple settings of primary and revision arthroplasty [1-3].
- Limitations:
 - Unavailable microbiology and antibiotic data
 - Adherence, dose and duration of prophylactic drug
 - Couldn't determine reimplantation, type of spacer, intraoperative complications and blood loss.

Conclusion

- Our data suggests that Aspirin might be a safe and non-inferior to other anticoagulant regimens for VTE prevention following hip prosthesis explantation with spacer insertion
- Further prospective studies are needed to confirm these findings.

References

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