

Antiplatelet Therapy Is Associated With Increased Survival And Decreased Reintervention Following Elective Complex Endovascular Repairs



James M. Dittman MD¹, Alexandra Phocas MD¹, Thomas F. O'Donnell MD²,
 Marc L. Schermerhorn MD³, Sara L. Zettervall MD MPH¹, Kirsten D. Dansey MD MPH¹

1. University of Washington Division of Vascular Surgery, Department of Surgery; Seattle, WA, USA.
 2. Columbia University Irving Medical Center, New York City, NY, USA. 3. Beth Israel Deaconess Medical Center, Boston, MA, USA.

INTRODUCTION

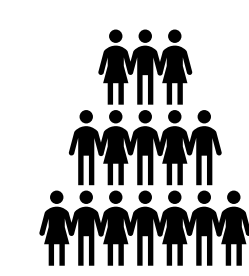
- Antiplatelet regimens maintain visceral & renal artery stent patency after complex endovascular aortic repairs.
- Practice patterns among institutions are heterogeneous.
- No large study has examined the influence of antiplatelet regimens on postoperative outcomes after B/FTEVAR.

OBJECTIVES

To characterize national trends regarding antiplatelet regimen following F/BTEVAR.

To determine the impact of antiplatelet regimens on mortality, reintervention, and other outcomes following F/BTEVAR.

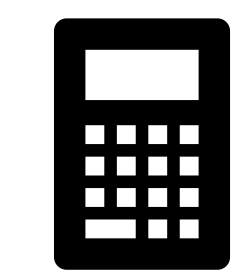
METHODS



All elective fenestrated/branched TEVAR in VQI from 2012-2021 were compiled.



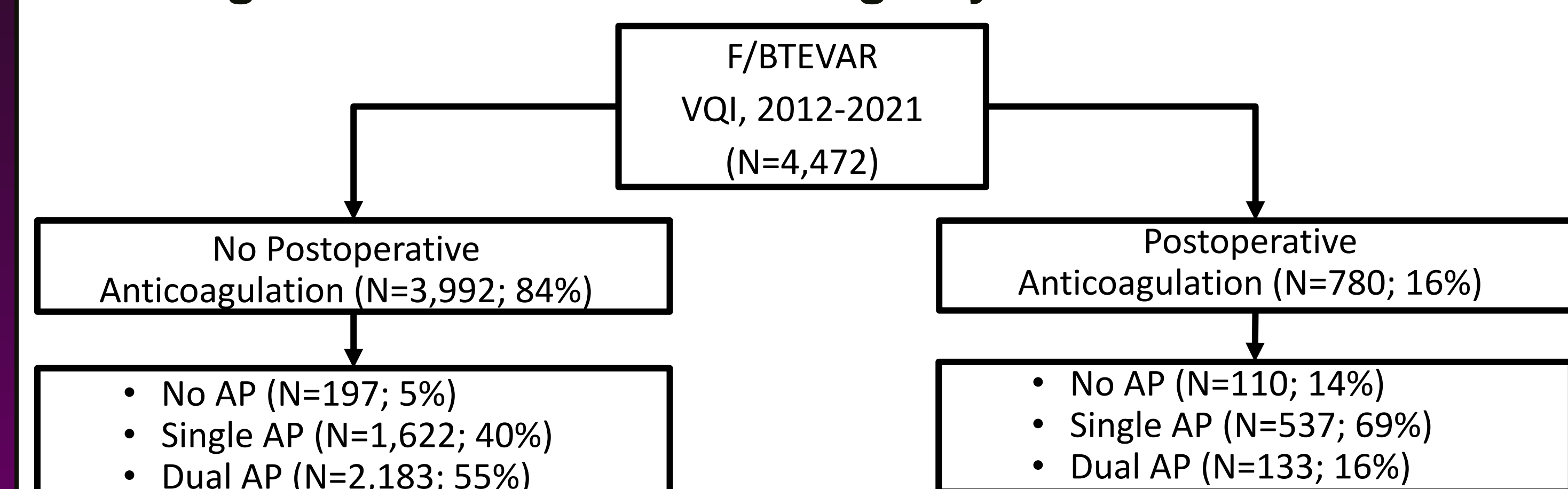
Perioperative factors & outcomes were compared by antiplatelet (AP) regimen: dual therapy (D), monotherapy (M), & none (N). Patients discharged on anticoagulation (AC) were assessed separately from those not on AC.



Univariate & multivariate analyses were applied to assess outcomes differences.

RESULTS

Fig.1: Distribution of Anticoagulation and Antiplatelet Regimens following F/BTEVAR in the VQI Registry from 2012-2021



RESULTS

Patients Discharged without Anticoagulation

- Preoperative Factors: Mean age (N:72 vs M:73 vs D:73, P=0.01), mean GFR (N:72 vs M:70 vs D:68), recent unstable angina or MI (N:2% vs M:1% vs D:2%, P<0.01), and smoking history (N:86% vs M:88% vs D:90%, P=0.03) significantly differed between groups.
- Univariate Outcomes: 30-day mortality (N:6% vs M:1% vs D:1%, p<0.01), reintervention (N:10% vs M:5% vs D:4%, p<0.01), myocardial infarction (N:3% vs M:1% vs D:3%, p<0.01), new postop dialysis (N:3% vs M:1% vs D:1%, p<0.01) & respiratory complications (N:9% vs M:3% vs D:2%, p<0.01) differed by regimen. Survival was significantly increased for those on antiplatelet regimens (Fig.2)
- Multivariate Outcomes: An antiplatelet regimen remained protective after adjustment (Table).

Fig.2: Kaplan Meier Survival Curve following F/BTEVAR by Antiplatelet Regimen without Anticoagulation at Discharge

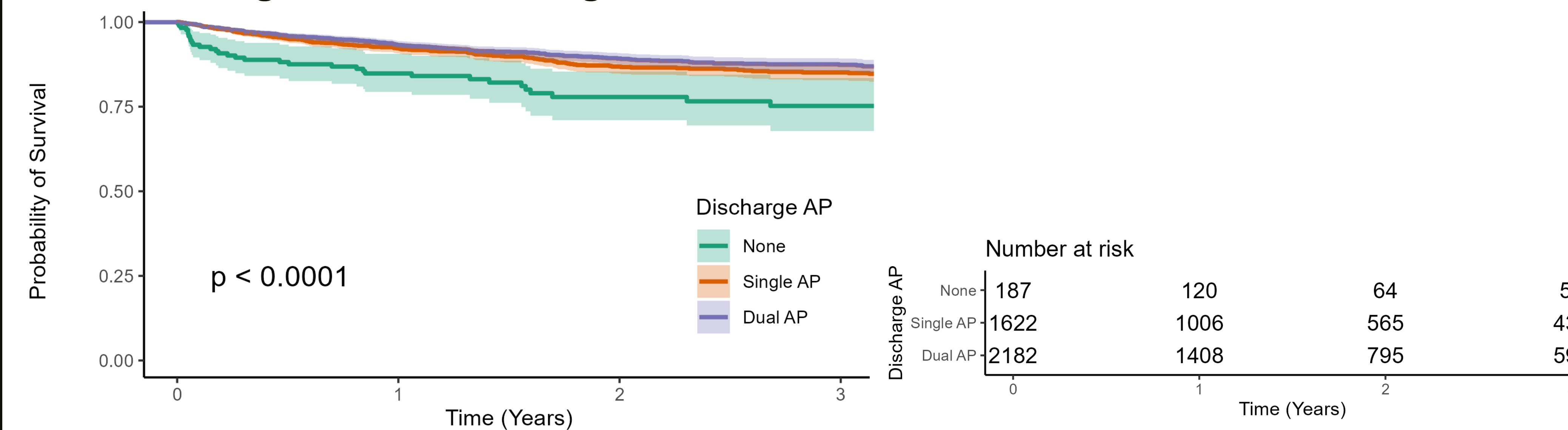


Table: Covariate-adjusted F/BTEVAR Outcomes by Antiplatelet Regimen, No Anticoagulation

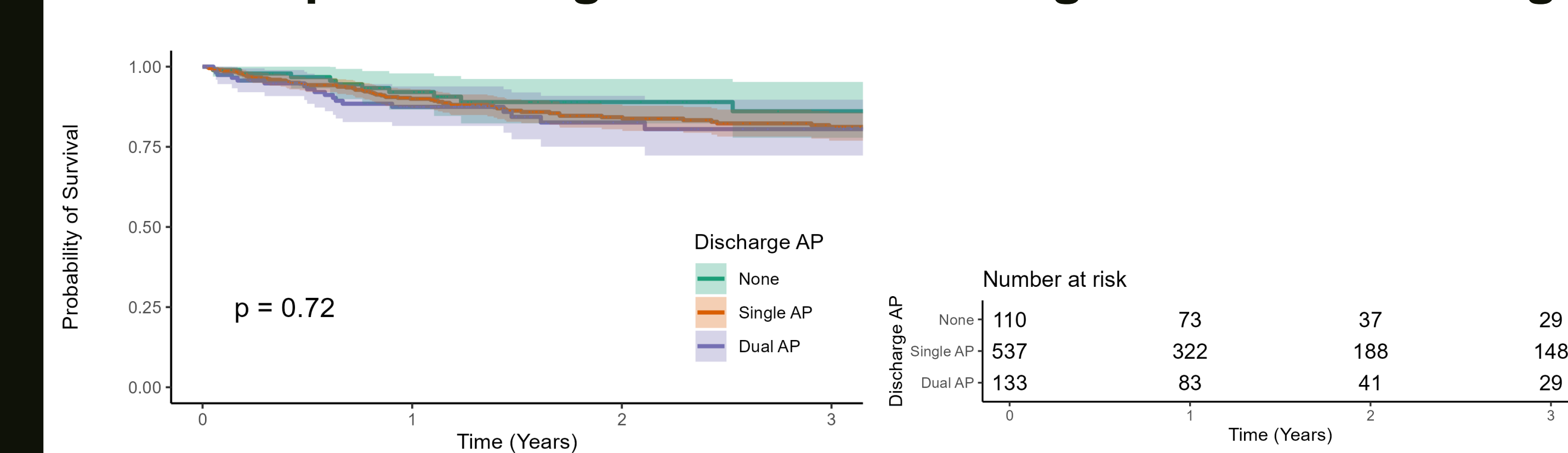
Outcome	Mono vs None aOR (95% CI)	DAPT vs None aOR (95% CI)	DAPT vs Mono aOR (95% CI)
Reintervention	0.5 (0.3-0.9)	0.4 (0.2-0.7)	0.8 (0.6-1.1)
Postoperative MI	0.4 (0.1-1.1)	0.7 (0.3-1.9)	1.8 (1.1-3.1)
Leg Ischemia	0.7 (0.2-2.1)	0.4 (0.2-1.2)	0.8 (0.4-1.4)
New Postop Dialysis	0.3 (0.1-0.9)	0.2 (0.1-0.5)	0.5 (0.3-1.0)
Intestinal Ischemia	0.4 (0.1-0.9)	0.2 (0.1-0.6)	0.8 (0.4-1.4)
Respiratory Complication	0.4 (0.2-0.7)	0.3 (0.2-0.5)	0.8 (0.5-1.1)
Long-term Survival (aHR)	0.6 (0.4-0.9)	0.5 (0.3-0.7)	0.9 (0.7-1.1)

RESULTS

Patients Discharged on Anticoagulation

- Preoperative Factors: hypertension (N:70% vs M:66% vs D:82%, P=0.03) and COPD (N:11% vs M:9% vs D:6%, P=0.03) differed between groups.
- Univariate Outcomes: Only MI incidence differed by antiplatelet regimen (N:3% vs M:3% vs D:11%, p<0.01). There was no difference regarding survival (Fig.3)
- Multivariate Outcomes: MI incidence for DAPT vs None was significant after adjustment (aOR 3.6, 95% CI:1.6-8.1).

Fig.3: Kaplan Meier Survival Curve following F/BTEVAR by Antiplatelet Regimen with Anticoagulation at Discharge



DISCUSSION

- 6% of patients are discharged on no AP regimen after F/BEVAR.
- In patients not on anticoagulation after repair, AP therapy improves short and long-term survival, reintervention, and perioperative outcomes.
- In patients on anticoagulation, AP therapies after repair are not associated with adverse outcomes.

CONCLUSIONS

- Patients who cannot be discharged after F/BTEVAR on an antiplatelet regimen have worse postoperative outcomes.
- Additional research is warranted to understand the optimal regimen for patients on anticoagulation.