

Comprehensive Evaluation of Common Open and Endovascular Procedures and Their Relationship with Post-Discharge Complications

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Background



- Percutaneous endovascular treatment for arterial vascular diseases have revolutionized vascular care
- Studies have shown equitable outcomes between endovascular and open approaches for several vascular procedures
- Endovascular approach has shown improved short-term morbidity and mortality

Research Objectives

To perform a comprehensive analysis understanding post-discharge complications after common vascular procedures:

- Evaluate trends in LOS and post-discharge complications over time
- Assess factors associated with post-discharge complications

Methods

- Data were obtained from ACS-NSQIP Procedure Targeted Dataset for patients undergoing AAA, aortoiliac disease, lower extremity disease, and carotid stenosis 2014-2019
- Exclusion criteria:
 - ASA Classification 6
 - LOS>30 days
 - Inpatient death
- Non-parametric test of trend was used to assess trends and multivariable logistic regression was used to predict post-discharge complications



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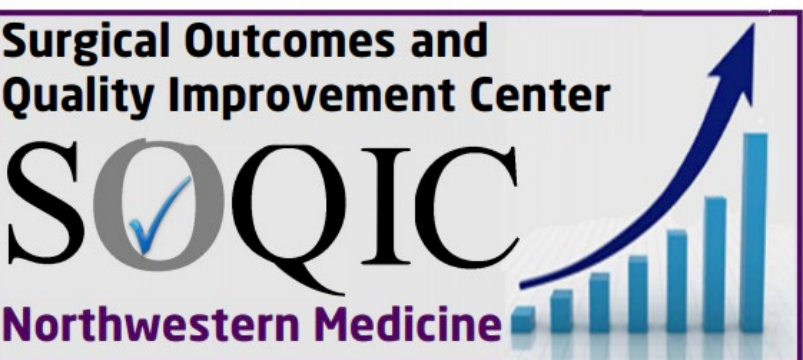


Figure 1. Post-Discharge Complication Rates for Open vs. Endovascular Procedures

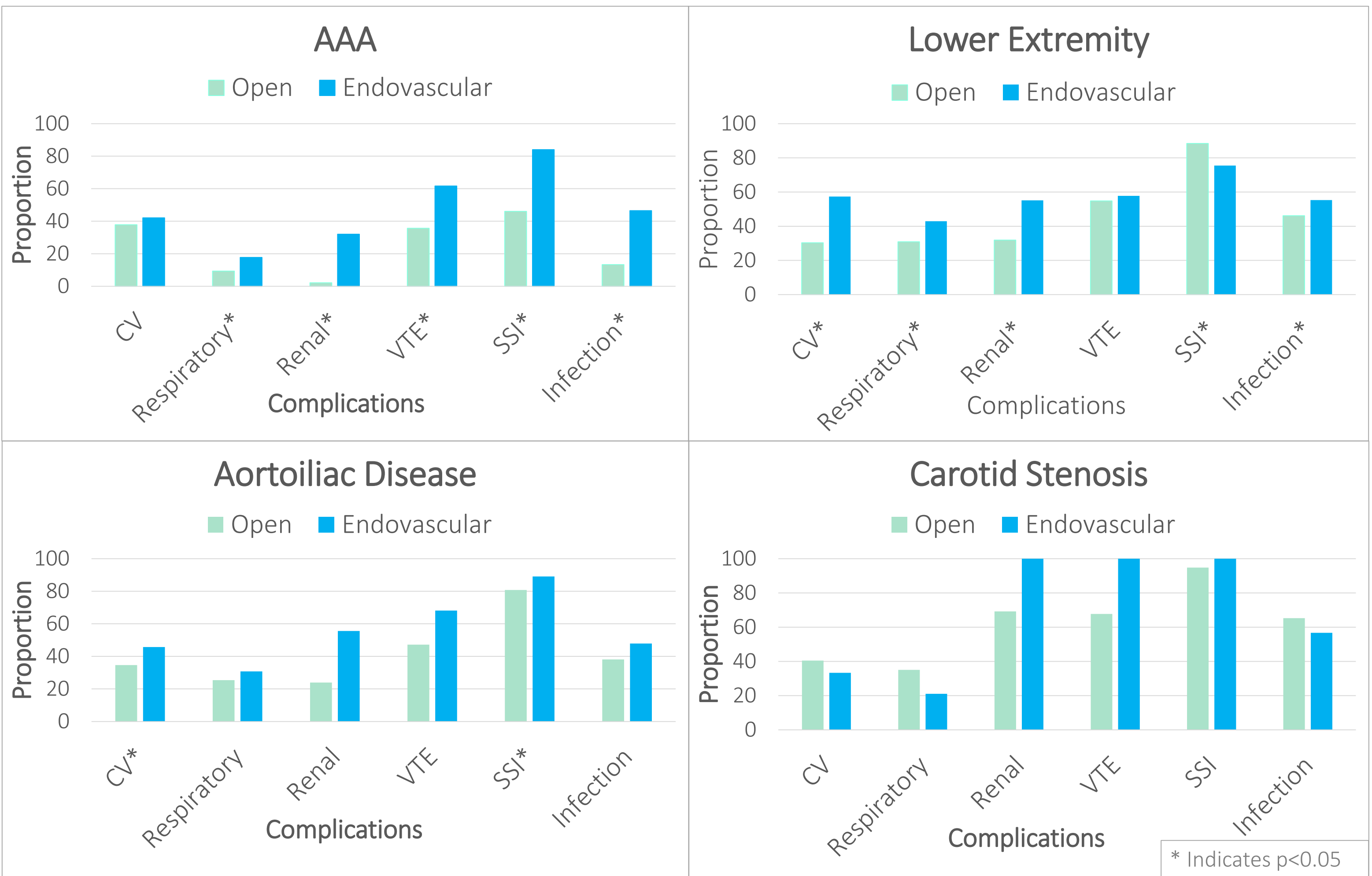
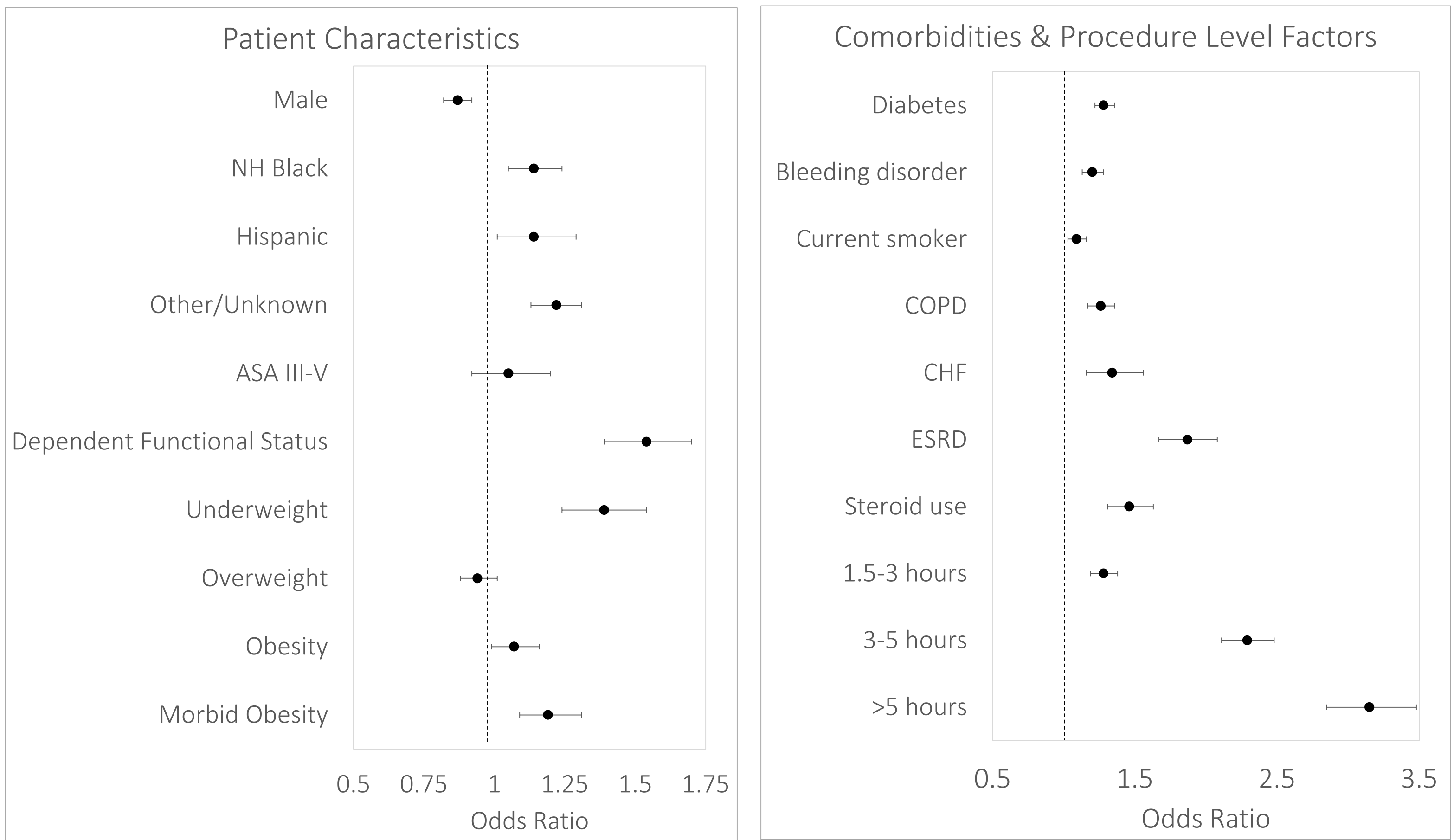
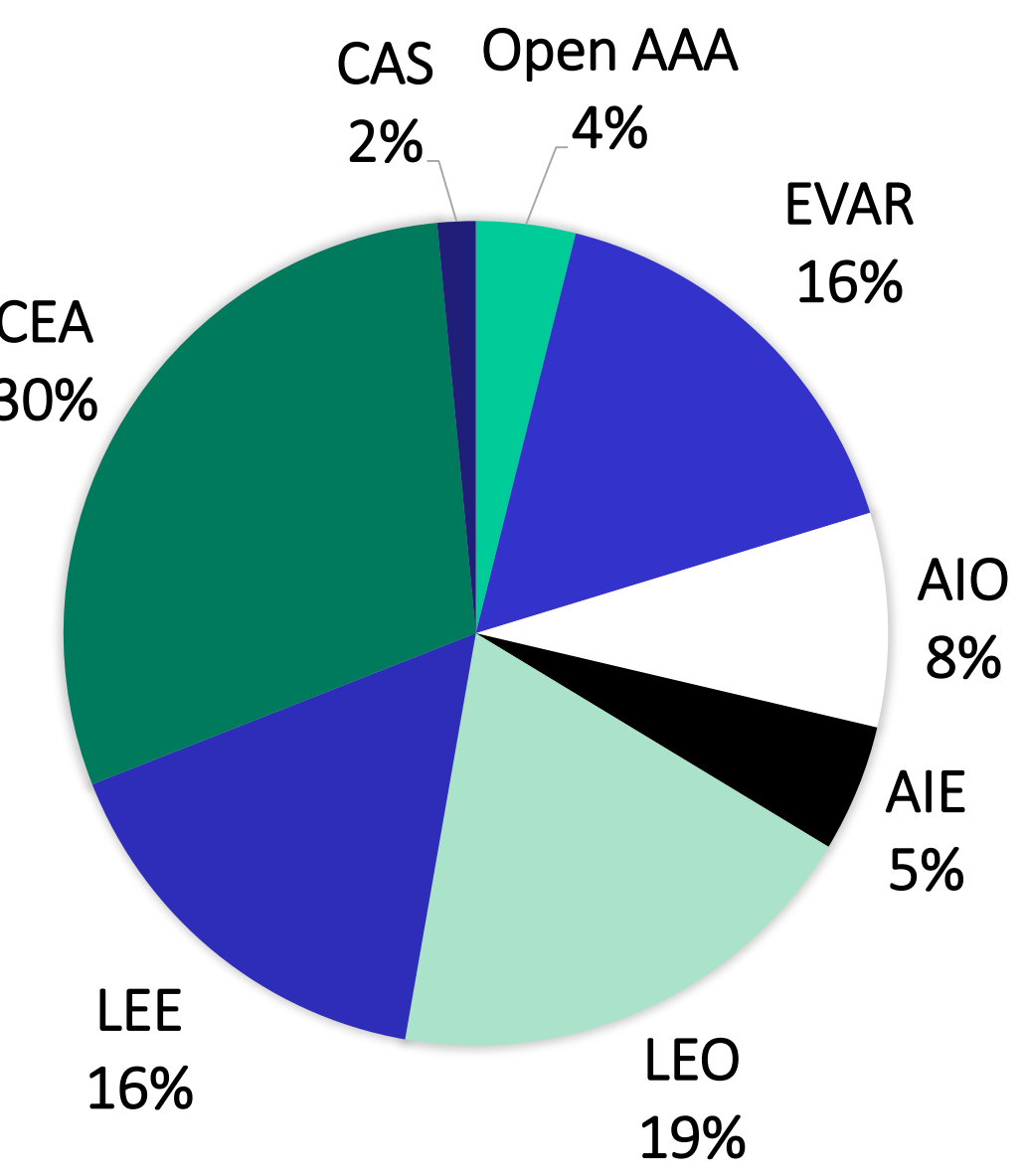


Figure 2. Patient-level and Procedural Level Predictors for Post-Discharge Complications



Results

DISTRIBUTION OF PROCEDURES



- Study Population N= 80,311
- Length of Stay
 - Median LOS remained at 2 days (IQR 1-5) from 2014 to 2019
- Postoperative Complications
 - Unadjusted rate of overall postoperative complication was higher for open procedures compared to endovascular procedures (17.5% vs. 13.0% , p<0.001)
- Post-Discharge Complications
 - Patient-level and procedure level factors are associated with post-discharge complications (Figure 2)

Limitations

- Study design only demonstrates association
- ACS NSQIP procedure targeted data participants may be a selective population
- Follow up was limited to 30 days

Conclusions

- There was no change in LOS for open or endovascular procedure over time
- While endovascular procedures had less postoperative complications than open procedures, there was a higher proportion of post-discharge complications
- A comprehensive, and proactive post-discharge monitoring system should be developed to allow early identification and assessment for patients