

# **Persistent Opioid Use After Surgery for Acute Type A Aortic Dissection**

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# Background & Aims

- The opioid epidemic in the US has been potentially exacerbated by prescription opioids
- Patients with acute type A aortic dissections (ATAAD) experience severe pain from the dissection as well as pain associated with surgical repair of dissection
- We assessed the impact of post-surgical opioid prescription on development of persistent opioid use (POU) in patients presenting with ATAAD



# Methods

- A retrospective review of medical records for all patients with the diagnosis of ATAAD from 2010-2020 was conducted.
- Patients' discharge opioid prescriptions all converted to oral morphine equivalents (OME)
- POU was defined as any refilling of opioid prescription one week to one year after discharge



# Methods

- Patients were stratified into two groups:
  - POU
  - No POU
- Baseline characteristics and outcomes were compared between the groups
- Univariable analysis was undertaken to assess factors associated with POU
- Non-linear relationship between total OME at discharge and POU was assessed using splines



# Results

- A total 132 ATAAD patients included
  - 10.6% (14/132) developed POU
  - 89.4% (118/132) did not develop POU
  - Women comprised 34.9% (46/132)
  - Predominantly white race (81.8% (108/132))



# Results

- **POU cohort:**

- **Trended towards being younger** (51.5 years (44-63) vs. 61 years (49-70),  $p=0.07$ )
- **Underwent procedures in more recent years** (2020: 28.6% (4/14) vs. 8.5% (10/118) and 2021: 21.4% (3/14) vs. 2.5% (3/118),  $p=0.06$ )
- **Greater prevalence of chronic pain** (21.4% (3/14) vs. 4.2% (5/132),  $p=0.01$ )



# Results

- Comparable 30-day (1.52% (2/132)) and overall mortality rates (12.1% (16/132)) at a follow-up of 5.5 years (3.6-7)
- **Non-POU** patients had **longer lengths of stay** during index admissions (7.3 days (5.6-10.5) vs. 5.3 days (4.8-6.8),  $p=0.05$ )
- **Non-POU** patients had **lower readmission** rates (50% (59/118) vs. 78.6% (11/14),  $p=0.04$ )



Variable	OR	95% Confidence Limits		p-Value
Race (black)	1.89	0.469	7.618	0.371
Female	0.476	0.126	1.8	0.274
Age	0.966	0.929	1.004	0.078
Current smoker	2.026	0.503	8.16	0.321
Chronic pain	6.164	1.296	29.317	0.022
Cancer history	4.462	0.378	52.639	0.235
Congestive heart failure history	1.22	0.139	10.712	0.858
Coronary artery disease history	0.621	0.075	5.145	0.659
COPD history	1.738	0.188	16.046	0.626
Hypertension history	1.094	0.357	3.354	0.875
Concurrent pneumothorax	3.769	0.659	21.563	0.136
Length of stay	0.882	0.732	1.063	0.188
Total OME at discharge	0.996	0.987	1.005	0.381
OME dosage (225-300)	0.513	0.14	1.876	0.313
OME dosage (300-1000)	0.556	0.091	3.405	0.525

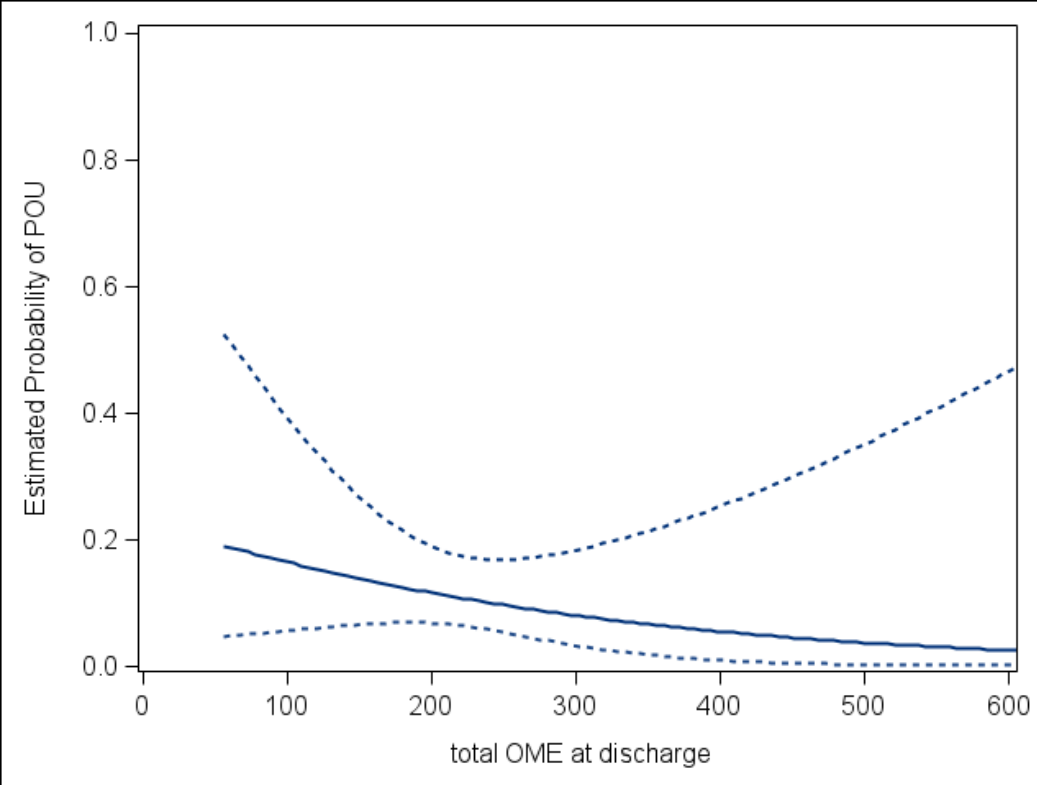
## Results

Univariable logistic regression analysis for risk of developing persistent opioid use following surgery for acute type A aortic dissection



# Results

Analysis of non-linear relationship between total OME at discharge and POU showing a downward trend with increasing dosage of OME



# Discussion

- Postoperative opioid dosage was not found to be associated with the development of POU
- A history of chronic pain may increase the chances of developing POU
- This implies current postoperative pain control regimens for ATAAD surgery are reasonable



# Conclusion

- ❑ Younger ATAAD patients with a history of chronic pain at potentially increased risk for developing POU
- ❑ Individually tailored opioid regimens and close follow-up recommended for pain control with opioids in patients undergoing surgery for ATAAD

