

# Impact of Procedure Wait Times on One-Year Health Outcomes in Patients with Degenerative Mitral Regurgitation Undergoing Transcatheter Edge-to-Edge Repair

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## OBJECTIVES

- Transcatheter Edge-to-Edge Repair (TEER) is a safe and effective treatment for patients with Degenerative Mitral Regurgitation (DMR).
- Wait times between procedure eligibility and completion vary and can surpass six months.
- It is unknown how wait time differences may impact post-procedure outcomes.
- This exploratory analysis uses real world data to compare patient post-procedure outcomes by wait time groups.

## METHODS

- Data source: Optum® Market Clarity Cardiac Extract
  - 2015Q4 thru 2024Q2
  - Electronic Health Record (EHR) and Claims data
- Inclusion criteria:
  - Age ≥18 years
  - ICD-10 diagnosis of mitral regurgitation (MR) for one inpatient admission or two outpatient visits
  - ICD-10 or CPT-4 code for TEER procedure after MR diagnosis
  - Physician note of severe MR **OR** ICD-10 diagnosis of chordal rupture
- Exclusion criteria:
  - ICD-10 diagnosis of myocardial infarction **OR** systolic heart failure before MR diagnosis
- Time zero:
  - First date of **severe MR**, by either severe physician note **OR** an ICD-10 code for chordal rupture, atrial fibrillation, or pulmonary hypertension
- Wait Time Groups: Time between procedure eligibility and TEER
  - <6m** – less than 6 months
  - 6m-2yrs** – 6 months to 2 years
  - 2+yrs** – Over 2 years
- Statistics: One-year post-TEER outcomes
  - ANOVA and Chi-square compared **heart failure hospitalizations, heart attack, stroke**, and follow-up **reintervention** rates
  - All-cause mortality** was tested with a Cox proportional hazard model

Table 1. Baseline Characteristics

Measure	<6m	6m-2yrs	2+yrs
Total Number	600	360	455
Age	75.37 (10.24)	76.20 (9.49)	78.50 (8.29)
Female sex	280 (46.67%)	172 (47.78%)	218 (47.91%)
Race			
White	515 (90.51%)	312 (90.96%)	396 (92.31%)
Black	46 (8.08%)	26 (7.58%)	26 (6.06%)
Asian	8 (1.41%)	5 (1.46%)	7 (1.63%)
Atrial Fibrillation	244 (40.67%)	242 (67.22%)	353 (77.58%)
COPD	170 (28.33%)	129 (35.83%)	147 (32.31%)
Pulmonary HTN	161 (26.83%)	151 (41.94%)	237 (52.09%)
≥1 Other valve disease	339 (56.50%)	270 (75%)	316 (69.45%)
Aortic	246 (41%)	184 (51.11%)	210 (46.15%)
Tricuspid	215 (35.83%)	187 (51.94%)	234 (51.43%)
Pulmonic	55 (9.71%)	58 (16.11%)	59 (12.97%)
CAD	231 (38.50%)	150 (41.67%)	209 (45.93%)
Cardiomyopathy	102 (17%)	98 (27.22%)	131 (28.79%)

COPD, chronic obstructive pulmonary disorder; HTN, hypertension; CAD, coronary artery disease

Figure 1. Average Heart Failure Hospitalizations (HFHs) in the year after TEER by Wait Time Group

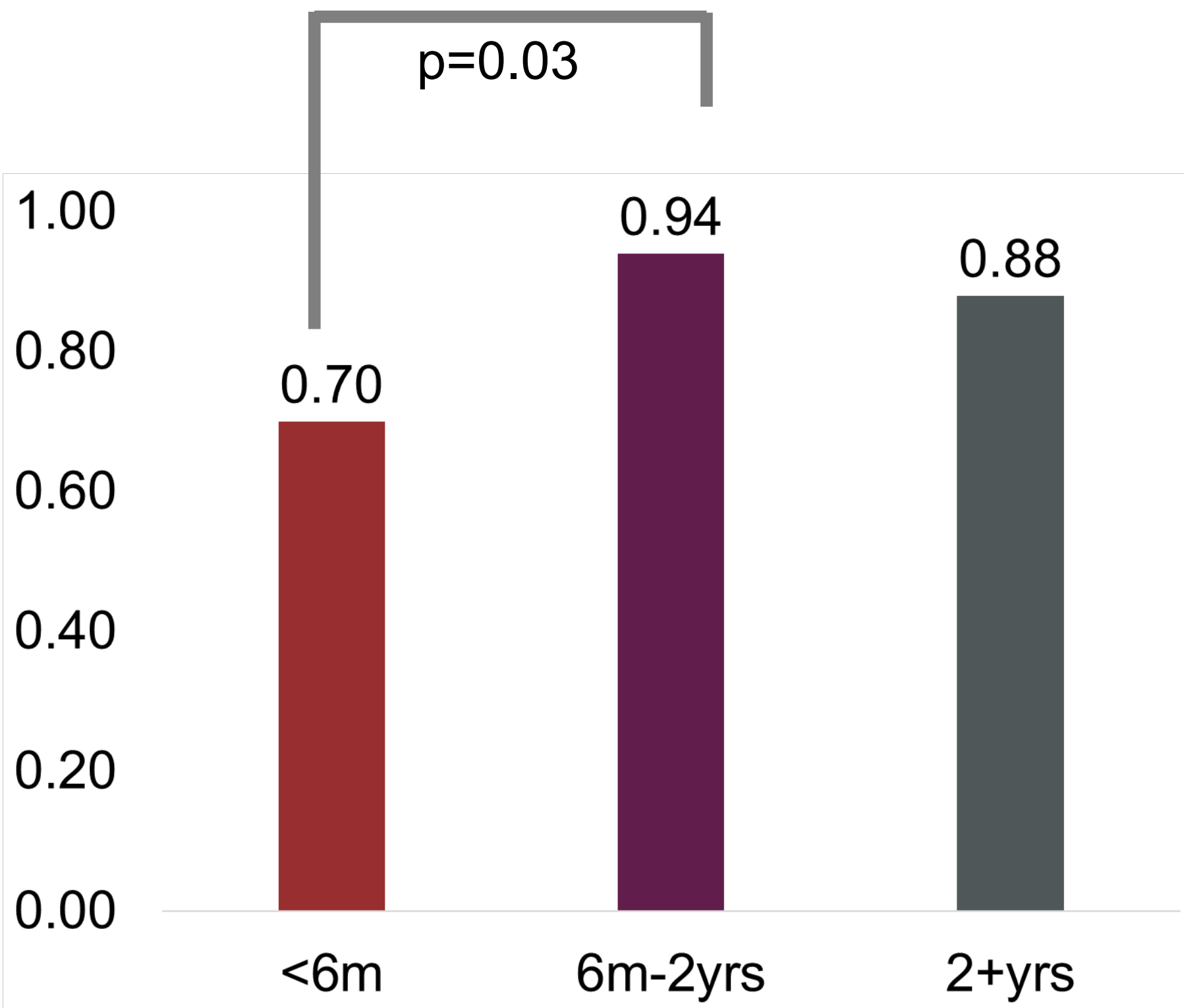


Figure 2. Rates of Heart Attack, Stroke, and Repeat Mitral Procedure in the year after TEER by Wait Time Group

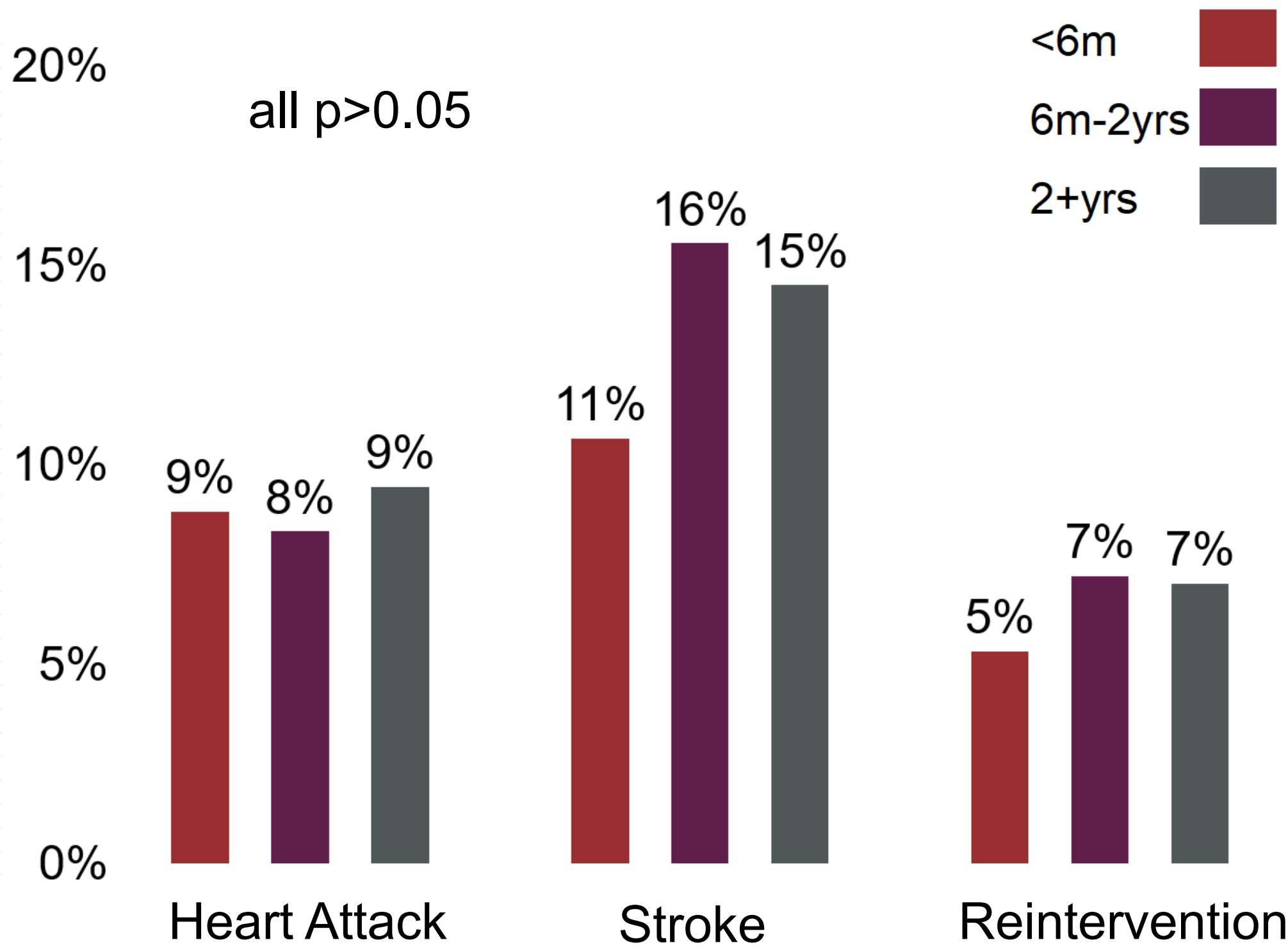


Table 2. One-year Post-TEER Mortality by Wait Time Group

Group	Deaths n (%)	Hazard Ratio (95%CI)	p-value
<6m	65 (10.83%)	n/a	n/a
6m-2yrs	58 (16.11%)	1.32 (0.93-1.89)	0.12
2+yrs	79 (17.36%)	1.83 (1.32-2.54)	< 0.001

## RESULTS

- Median wait time was just under 9 months (268 days; IQR 67-966).
- DMR patients in the <6m group had significantly fewer heart failure hospitalizations in the year after TEER than 6m-2yrs patients
- Wait time groups did not differ significantly in the rates of heart attack (p=0.59), stroke (p=0.07), or reintervention (p=0.08)
- Patients in the 2+yrs group had a significantly higher risk of death in the year after TEER compared to the <6m group

## LIMITATIONS

- Optum® Market Clarity contains data for patients with commercial health insurance and some third-party coverage, which may include Medicare Fee-For-Service (FFS). Findings may differ in a sample with a higher number of FFS patients.
- Data analyzed represents only what is billed to insurance or in the EHR during the study period.
- Inclusion/exclusion criteria were designed to identify patients with DMR, excluding other etiologies. More strict etiology algorithms may alter results, as would including other MR etiologies

## CONCLUSIONS

- This exploratory analysis suggests that longer wait times between severe MR and TEER procedure increase the risk of adverse events (heart failure hospitalizations and death) in the year after the procedure.
- Patients who are treated immediately upon procedure eligibility may have better outcomes and better quality of life