

# Outcomes of Eyes with Diabetic Macular Edema that are Lost to Follow-up after Anti-VEGF Injections

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# Summary

- Anti-VEGF treated DME patients who were lost to follow-up (LTFU) for a prolonged period experienced a modest decline in VA on return
- VA improved after restarting therapy but did not fully return to baseline level despite improvement in macular edema
  - Driven by poorer outcomes in eyes with severe NPDR before LTFU
  - Eyes with mild-moderate NPDR before LTFU recovered to baseline levels
- Patients with more severe NPDR before LTFU may be at higher risk of vision loss



# Background

- Clinical trials have demonstrated benefit of anti-VEGF therapy for DME
- Real world studies
  - Lower levels of visual improvement compared to clinical trials
  - Less injections in real world studies (mean 3.4-7.9/year)
- Benefits optimized by regular follow-up and treatment

# Loss to Follow-up is a Major Problem

## Loss to Follow-up After Intravitreal Anti—Vascular Endothelial Growth Factor Injections in Patients with Diabetic Macular Edema

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- 2,595 patients with NPDR and DME
- LTFU defined as no follow-up visits immediately after anti-VEGF injection for > 1 year
- LTFU rate = **25.3%**

# Purpose

- To evaluate the effect of LTFU on outcomes in eyes with NPDR and DME treated with anti-VEGF injections



# Methods

- Inclusion:
  - Diagnosis of NPDR with DME
  - >6 months LTFU from 7/15 to 2/18
  - $\geq 1$  anti-VEGF injection prior to LTFU
- Exclusion:
  - H/O AMD, RVO, uveitis, prior treatment at outside practice
- Note: patients with no additional follow-up after first return visit from LTFU excluded in the final visit analysis

# Results: Baseline Characteristics

	mean $\pm$ SD or N (%)
Age (years)	63.4 $\pm$ 9.9
Race	
Caucasian	18 (41.9)
African American	21 (48.8)
Asian	2 (4.7)
Other	2 (4.7)
Sex	
Male	24 (55.8)
Female	19 (44.2)
HbA1c (%)	7.4 $\pm$ 2.3
Prior Anti-VEGF Therapy	
Bevacizumab	11 (19.3)
Ranibizumab	7 (12.2)
Aflibercept	39 (68.4)
Mean number of injections	8.7 $\pm$ 5.3
History of focal laser	
Yes	16 (28.1)
No	41 (71.9)
Lens Status	
Phakic	34 (59.6)
Pseudophakic	23 (40.3)



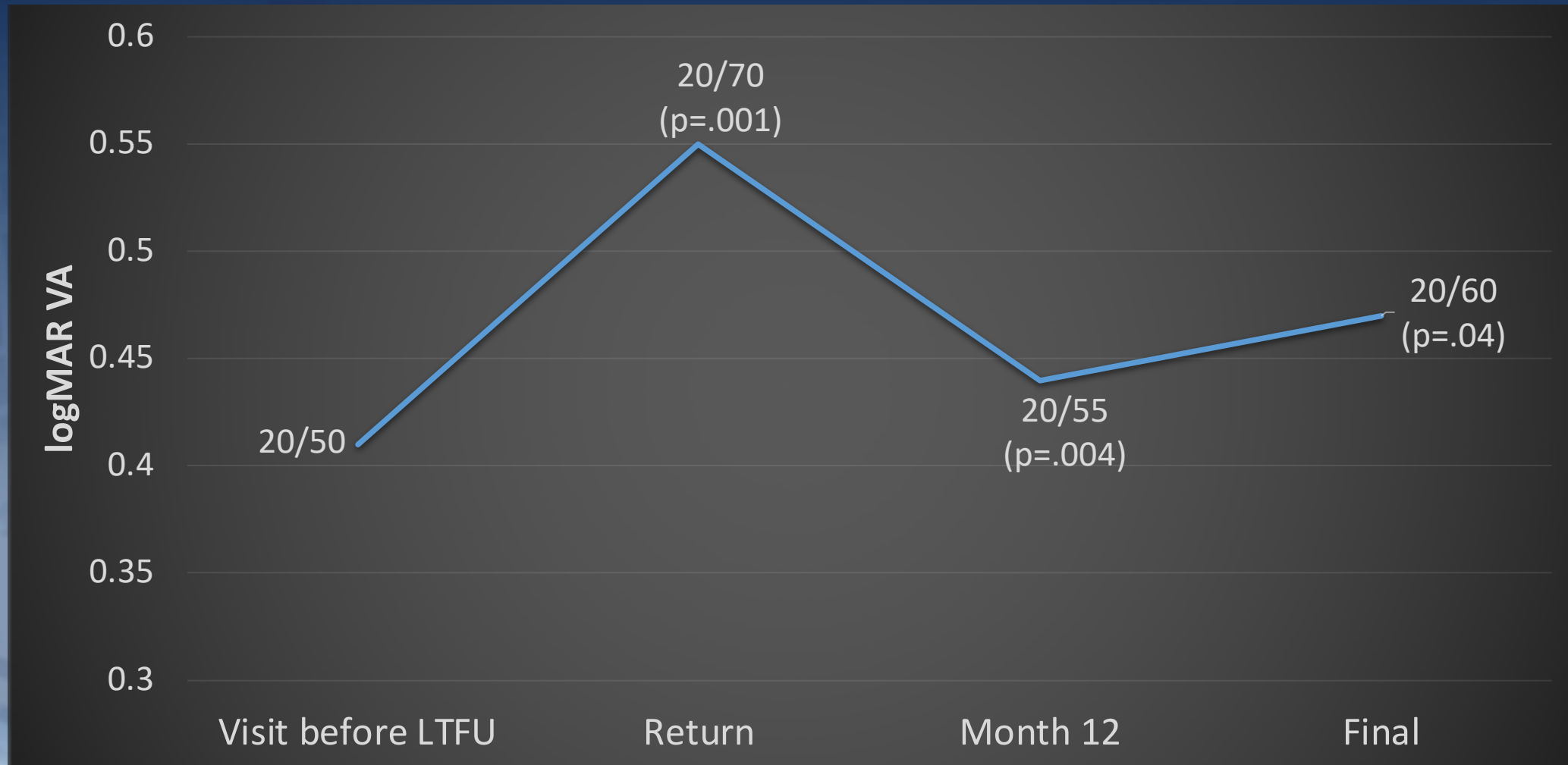
# Results

- Mean LTFU duration: 373 days (range, 181-1126)
- Mean duration from return to final visit: 354 days (range, 0-1141)
- Mean # of anti-VEGF injections after return:  $5.4 \pm 4.8$
- Severity of Diabetic Retinopathy

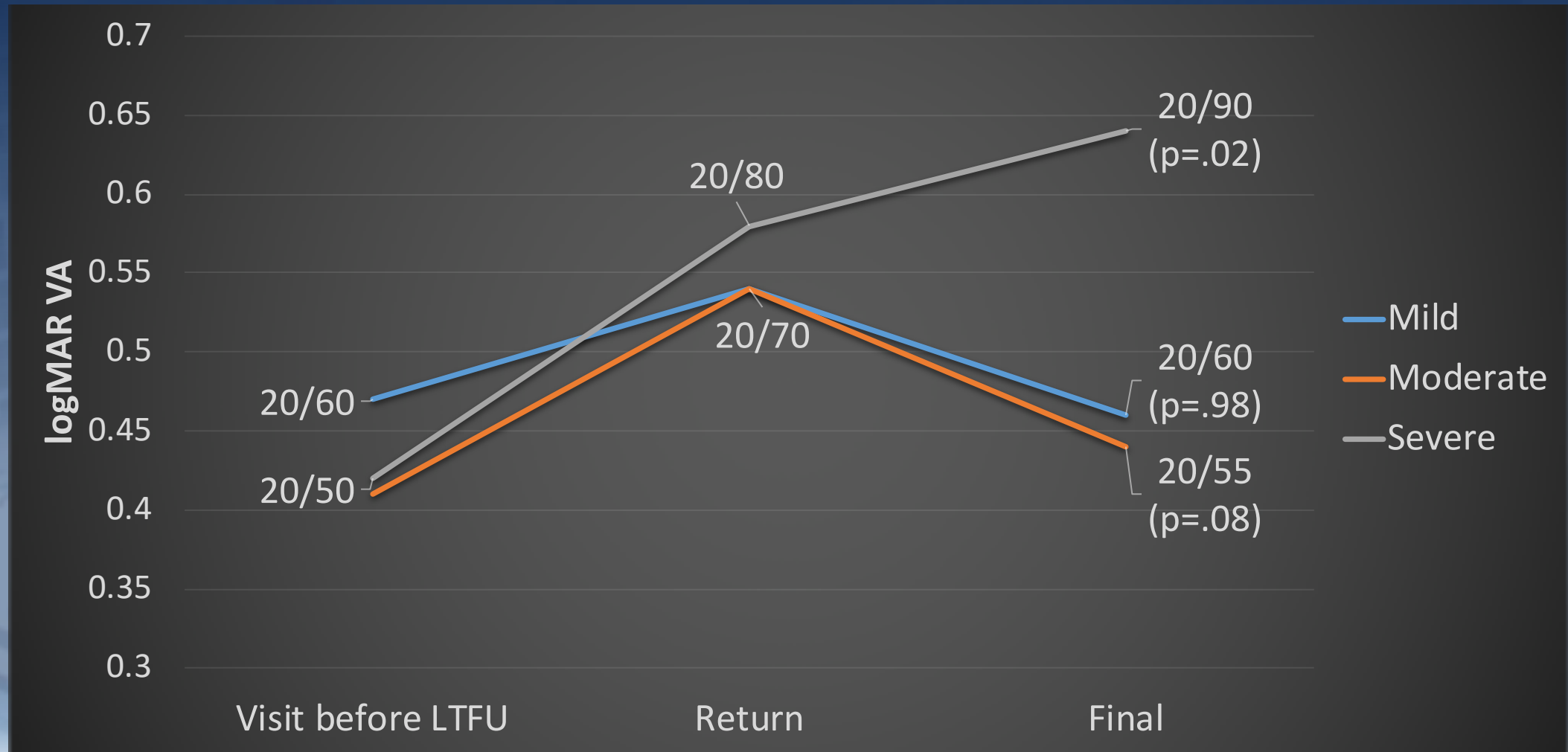
	Visit before LTFU*	Return Visit	Final Visit
Severity			
Mild NPDR	7 (12.3%)	4 (7.0%)	4 (7.0%)
Moderate NPDR	34 (59.6%)	30 (52.6%)	29 (50.9%)
Severe NPDR	15 (26.3%)	21 (36.8%)	19 (33.3%)
PDR	0 (0.0%)	2 (3.5%)	5 (8.8%)

\*One eye was noted as NPDR without a specified baseline severity

# Results: Visual Acuity

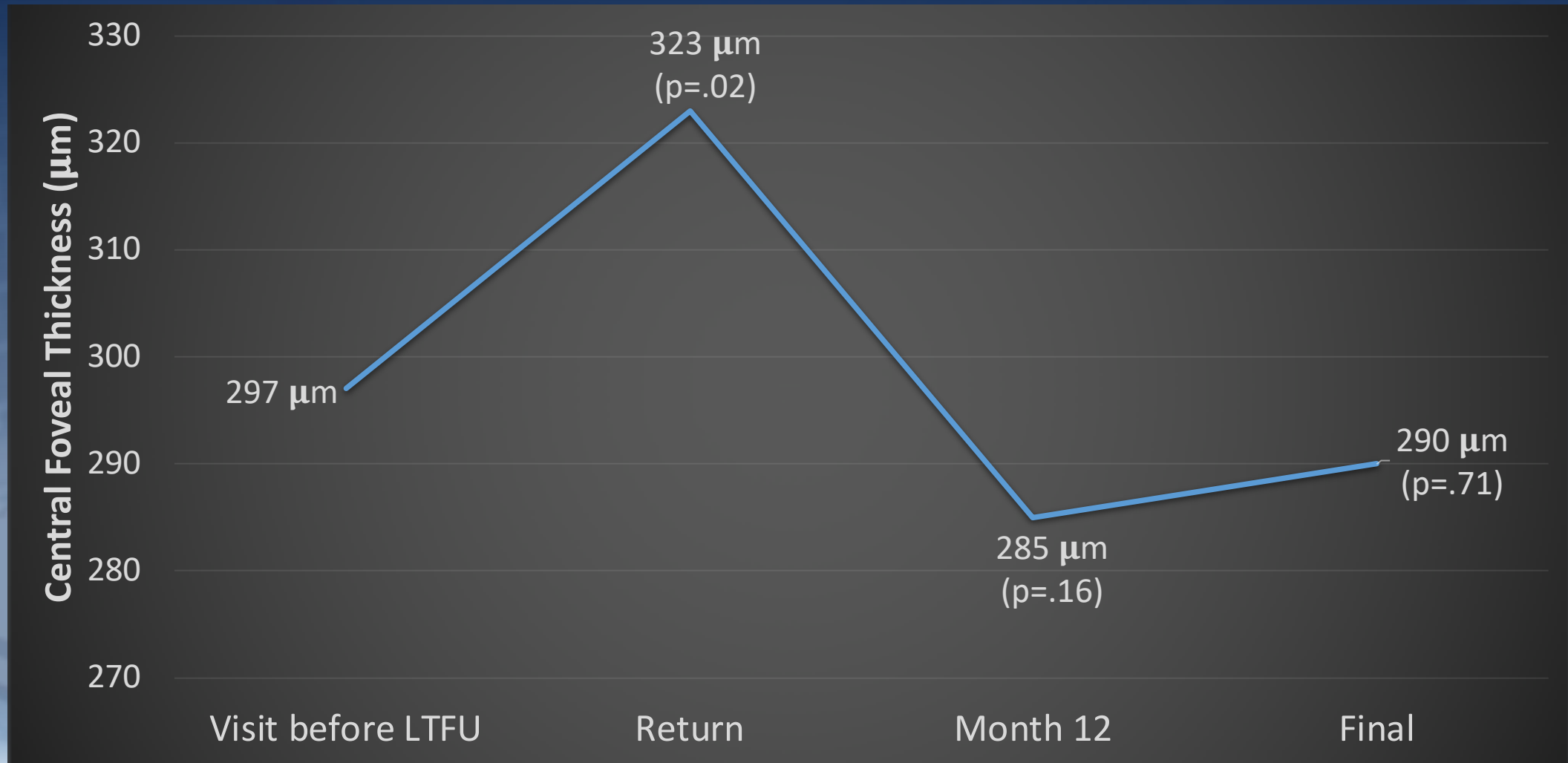


# Results: Visual Acuity Outcomes with DR Severity





# Results: Central Foveal Thickness on OCT



# Results: Effect of Prior and Additional Rx

- No correlation
  - # of injections prior to LTFU and change in VA from visit before LTFU to return ( $p=.2$ ) or final visit ( $p=.11$ )
  - Injection frequency after return and change in VA from visit before LTFU to final visit ( $p=.74$ )
- Focal laser:
  - Prior laser: no difference in VA outcome in eyes with vs without prior focal
  - Laser after return: no difference in final VA outcome in eyes receiving focal ( $n=7$ ) compared to those that did not

# Outcomes after LTFU in DME

- Modest decrease in VA after prolonged (>6 months) LTFU after anti-VEGF therapy for DME
- VA improved after restarting treatment
  - Returned to baseline in mild to moderate NPDR
  - Worsened if severe NPDR at visit before LTFU
- Central foveal thickness on OCT improved to baseline after restarting treatment



# How does this compare with wet AMD?

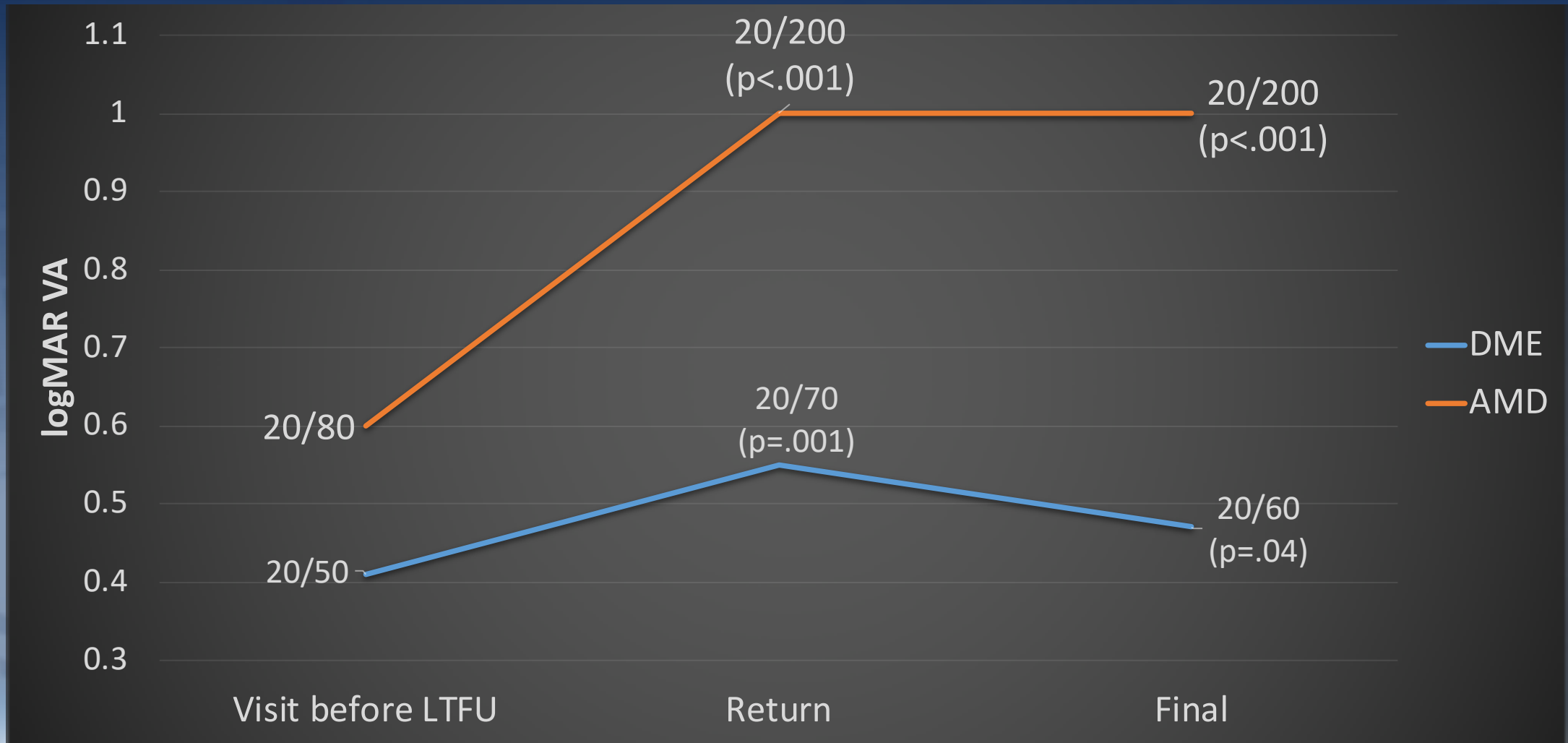
## **Outcomes of Eyes Lost to Follow-up with Neovascular Age-Related Macular Degeneration Receiving Intravitreal Anti-Vascular Endothelial Growth Factor**

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- 93 eyes of 77 patients LTFU for mean of 346 days
- Mean duration from return to final visit: 383 days
- Mean # of anti-VEGF injections after return: 5.0

# Results: Visual Acuity Outcomes DME vs AMD



# Outcomes of DME vs nAMD after LTFU

- Poorer outcomes in nAMD despite similar durations of LTFU and resumption of therapy
- Both groups had improvements in CFT back to baseline after restarting therapy
- Prioritizing care: DME may tolerate more treatment breaks