

# How beneficial is cataract surgery in patients with wet AMD?

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Age related macular degeneration (AMD) and cataracts are common and often coexist.

The relationship between wet age-related macular degeneration (AMD) and cataract surgery is largely unknown.

Cataract surgery may not be readily performed due to unknown expectation of outcomes.

There is variation between practices of prompt cataract surgery vs. waiting for improvement of AMD due to concern over exacerbation of choroidal neovascularisation (CNV).

## OBJECTIVES

➤ To compare changes in visual acuity and Optical Coherence Tomography (OCT) in patients with wet AMD before and after cataract surgery

➤ To assess changes in outcomes to determine the impact of cataract surgery

## MATERIALS AND METHODS

This was a retrospective study from January 2017 to June 2019 at a single centre by a single surgeon. Patients chosen were those with wet AMD who required intravitreal treatment (IVT) before cataract surgery.

The following outcomes were assessed pre-operatively and post-operatively:

➤ Visual acuity (ETDRS)

➤ Central macular thickness (CMT) in  $\mu\text{m}$  (microns) from measurements on Topcon and corroborated manually by the same person to ensure consistency.

➤ The number of IVTs 1 year before and 1 year after surgery to assess disease activity.

## RESULTS

	All patients
Number of eyes	56
Number of patients	53
Male to female ratio	17:36
Age mean (range)	83.1 (72 to 96)
Visually significant ocular comorbidities	1x amblyopia
Complications	1x dropped nucleus
Unable to follow up	5

Table 1: Patient demographics.  
4 patients passed away, 1 patient had poor health and stopped attending appointments.

### Best corrected visual acuity change all patients

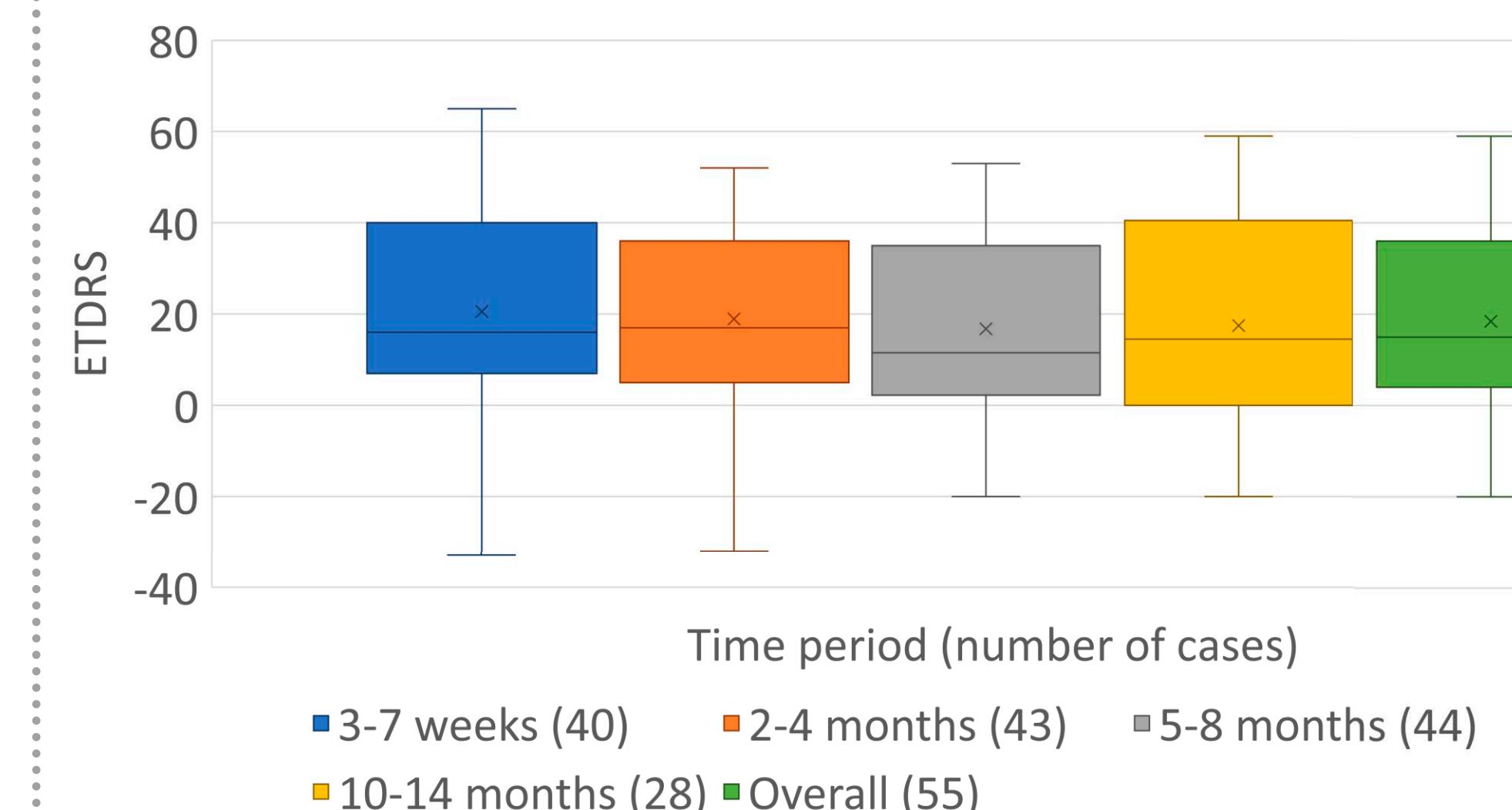


Figure 1: At least 75% of patients had an improvement of vision which was sustained over 1 year.  
The central line is the median and the central cross is the mean.  
The numbers in brackets after each time period show the number of patients who had OCT at those time periods.  
Hand movements and counting fingers vision were counted as 0 letters.

### Change in Central Macular Thickness

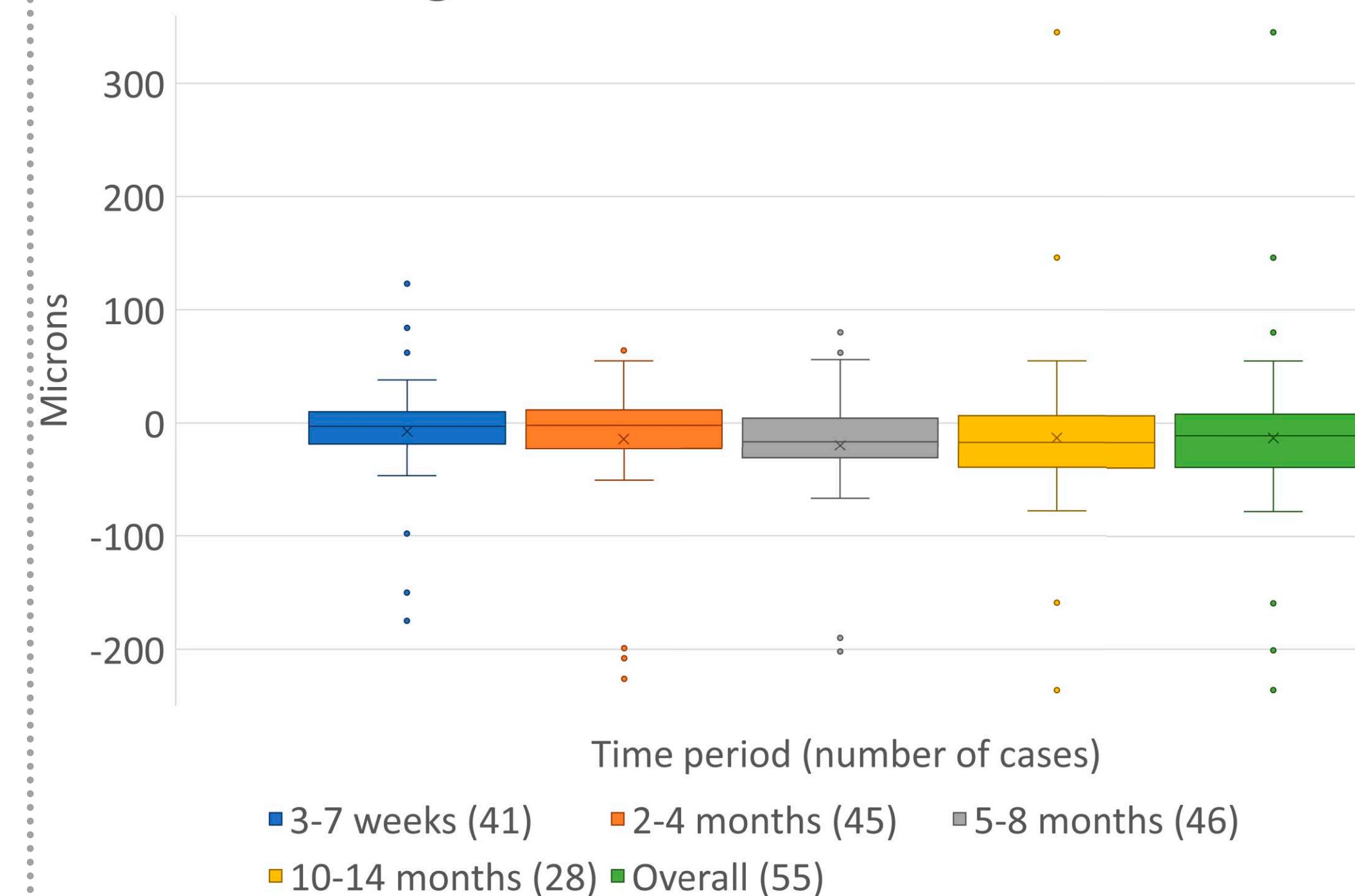


Figure 2: There was a mild reduction in central macular thickness for mean and median values, sustained over 1 year. The interquartile range straddles 0, indicating no change. There were many outliers within this data.

	All patients mean (median) range
IVT pre-operatively 1 year	2.5 (2.5) 0 to 8
IVT post-operatively 1 year	2.2 (2) 0 to 6
BCVA pre-operatively (ETDRS)	35.7 (35) HM to 72
BCVA change overall (ETDRS)	18.5 (15) -20 to 59
CMT pre-operatively ( $\mu\text{m}$ )	207.6 (196) 50 to 839
CMT change overall ( $\mu\text{m}$ )	-13 (-11) -236 to 345

Table 2: This demonstrates the numerical values for CMT and best corrected visual acuity (BCVA) in all patients.

## Discussion

Cataract surgery was performed in patients with active wet AMD whilst receiving IVT, they did not appear to have their cataract surgery delayed.

Our data could not find any evidence that cataract surgery is related to progression of active wet AMD as there was an improvement in visual acuity following cataract surgery as well as a minor reduction in CMT. This reduction in CMT may indicate an improvement in AMD or development of geographic atrophy.

The visual acuity improvement appeared greater in those with active wet AMD (those with more IVT treatment in the preceding year). This may further indicate that cataract surgery in these patients does not cause significant deterioration in their AMD.

### Limitations of this study:

➤ This study was from one medical retina consultant from a single centre and was a small sample size.

➤ As this was a retrospective analysis and no patient management was altered, patients did not have OCTs or visual acuity checks at the same time points in time for more reliable analysis.

➤ Central macular thickness measurement can be difficult with significantly distorted architecture in AMD, however it was the change in values that we were most interested in, rather than the absolute values. By having the same person measuring the CMT for each patient sequentially, we hoped that this would minimise this issue.

➤ There was no comparative group to compare against those who had cataract surgery delayed.

	Patients with IVT 1 year pre op mean (median) range	Patients without IVT 1 year pre op mean (median) range
Number of eyes (patients)	38 (36)	18 (18)
IVT pre-operatively 1 year	3.7 (4) 1 to 8	0 (0)
IVT post-operatively 1 year	2.9 (3) 0 to 6	0.8 (0) 0 to 5
BCVA pre-operatively (ETDRS)	19.9 (17) -17 to 59	15.4 (13) -20 to 50
BCVA change overall (ETDRS)	-11.8 (-10.0) -236 to 345	-15.6 (-16.5) -61 to 30
CMT pre-operatively ( $\mu\text{m}$ )		
CMT change overall ( $\mu\text{m}$ )		

Table 3: This splits table 2 into two groups— those with more active wet AMD who had IVT within 1 year pre-operatively, and those with non active AMD.

## Conclusions

➤ We found no evidence of detrimental effects of cataract surgery on wet AMD after 1 year.

➤ Visual acuity improved following cataract surgery on average in both active and non active wet AMD groups.

➤ As a result of our findings, we suggest that there may be no requirement to wait for the disease to stabilise. This is important as many patients' wet AMD needs ongoing treatment and cataract surgery can be performed safely whilst receiving IVT before and afterwards.

➤ In particular, this can improve the quality of life for one eyed patients with visually significant cataracts and facilitate fundal examination and OCT imaging to optimise AMD management.

➤ Avoiding significant delays in cataract surgery may prevent complications of mature cataracts left in situ and of the cataract surgery itself.

## References

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