

# Predictive factors of spontaneous release of vitreomacular traction: a systematic review and meta-analysis

Anubhav Garg HBSc<sup>1</sup>, Milena Cioana BHSc<sup>1</sup>, Marko M. Popovic MD<sup>2</sup>, Brian G. Ballios MD, PhD, FRCSC, DABO<sup>2</sup>, Michael H. Brent MD, FRCSC<sup>2</sup>, Bernard Hurley MD, FRCSC<sup>3</sup>, Peter J. Kertes MD CM, FRCSC<sup>2</sup>, Peng Yan MD, FRCSC<sup>2</sup>

<sup>1</sup>Ophthalmology & Vision Sciences  
UNIVERSITY OF TORONTO

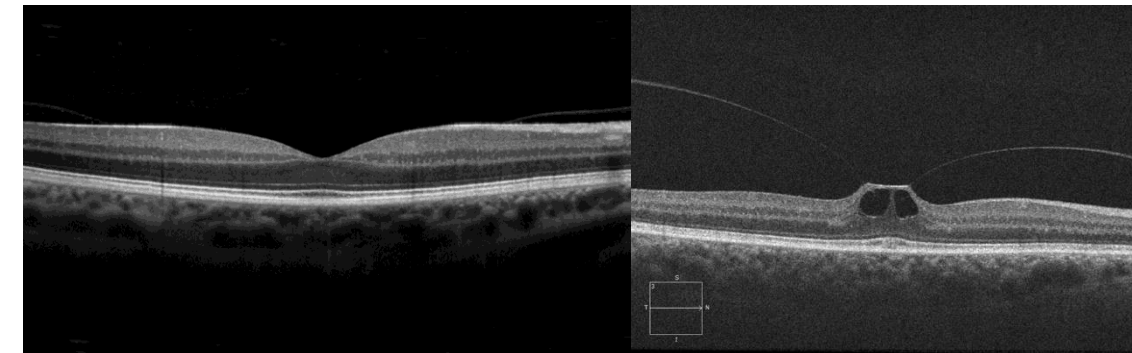
<sup>2</sup>Department of Ophthalmology and Vision Sciences, University of Toronto, Toronto, Ontario, Canada

<sup>3</sup>Department of Ophthalmology, University of Ottawa, Ottawa, Ontario, Canada



## Background

- Vitreomacular traction (VMT) syndrome is a vitreomacular interface pathology characterized by abnormal adhesion of the posterior hyaloid face to the macula resulting in anteroposterior traction causing metamorphopsia or reduced vision<sup>1</sup>
- Spontaneous release of VMT has previously been considered rare with reported rates as low as 11.0%<sup>2</sup>
- Modern optical coherence tomography (OCT) imaging shows spontaneous release may be more common with reported rates up to 47.4%<sup>3</sup>
- Recent studies have attempted to determine which patients are more likely to undergo spontaneous release and would therefore be better candidates for observation rather than intervention<sup>4,5</sup>



**Left:** Normal macula on optical coherence tomography

**Right:** Vitreomacular traction on optical coherence tomography

## Objectives

To synthesize the literature regarding predictive factors of spontaneous VMT release.

## Methods

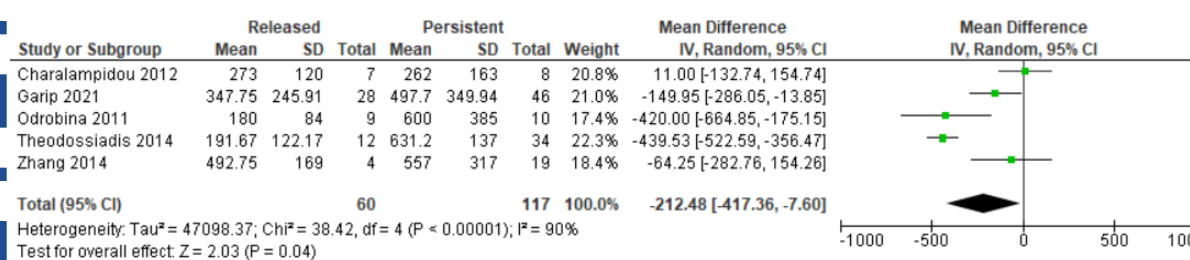
- Systematic search of MEDLINE, EMBASE, and Cochrane Library
- Inclusion criteria:
  - adult patients
  - sample size of 5+ eyes
  - OCT observation of VMT
  - comparison of eyes with spontaneous VMT release to eyes with persistent VMT
- Outcomes:
  - Age
  - VMT diameter
  - Initial best corrected visual acuity (BCVA)
  - Sex
  - Eye
  - Epiretinal membrane (ERM)
  - Previous intravitreal injection (IVI)
  - Ocular comorbidity
  - Fellow-eye posterior vitreous detachment (PVD)
  - VMT classification (focal defined as  $\leq 400\mu\text{m}$ , broad as  $>400\mu\text{m}$ )
- Meta-analysis conducted using a random effects model in which weighted mean differences (WMD) and risk ratios (RR) with 95% confidence intervals (95%CI) were reported
- A validated, 10-item tool for assessing risk of bias in prevalence studies was used to assess each study
- The Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) tool was used to evaluate the certainty of evidence for each outcome

## Results

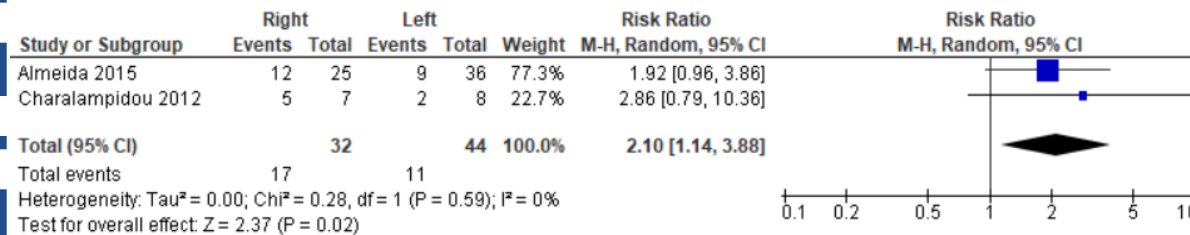
Twelve out of 258 studies included  
272 out of 934 eyes (29%) underwent spontaneous VMT release  
**Mean age:** 70.0 years old  
**Sex:** 37.2% male  
**Mean follow-up:** 22.0 months  
**Mean time to spontaneous release:** 15.3 months (n=212)  
**Mean VMT diameter:** 292.3 $\pm$ 192.9 $\mu\text{m}$  (n=60)  
**Initial mean BCVA:** 0.34 $\pm$ 0.21 logMAR (Snellen 20/44) (n=121)  
**Final mean BCVA:** 0.20 $\pm$ 0.58 logMAR (Snellen 20/32) (n=121)  
**Overall risk of bias:** Low for all included studies

## SIGNIFICANT PREDICTORS OF SPONTANEOUS RELEASE

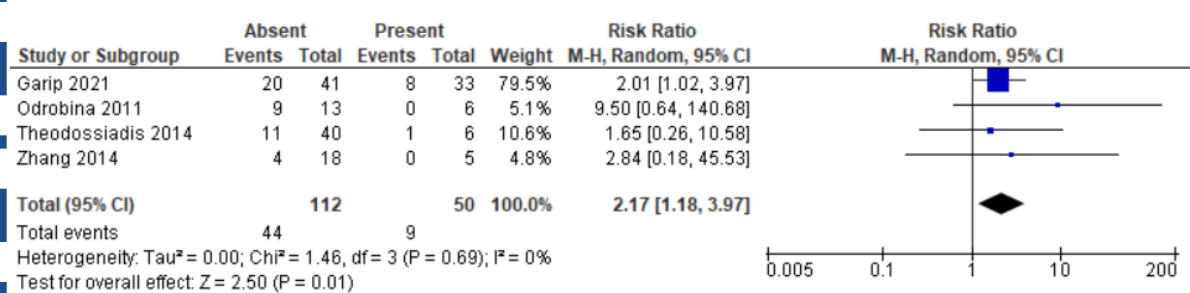
**Smaller Vitreomacular Traction Diameter** (GRADE: very low)



**Right Eye Involvement** (GRADE: low)

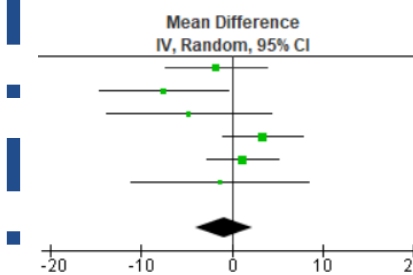


**Absence of Epiretinal Membrane** (GRADE: low)

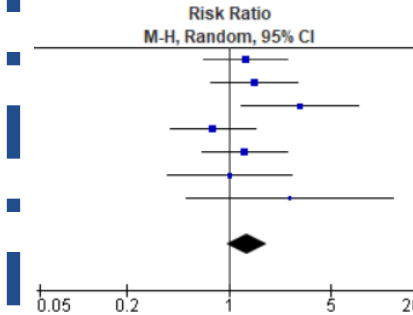


## NON-SIGNIFICANT PREDICTORS OF SPONTANEOUS RELEASE

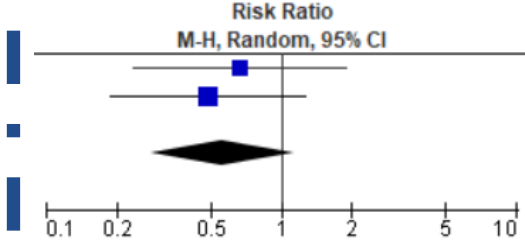
**Age** (GRADE: very low)



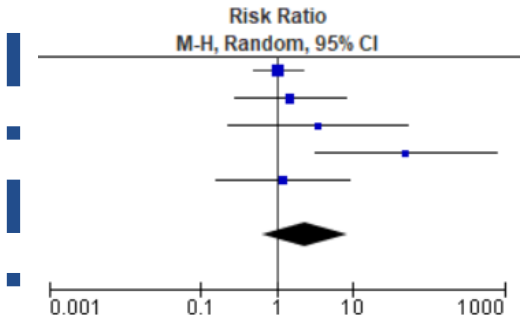
**Sex** (GRADE: very low)



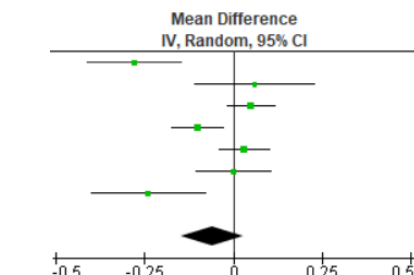
**Fellow-Eye PVD** (GRADE: very low)



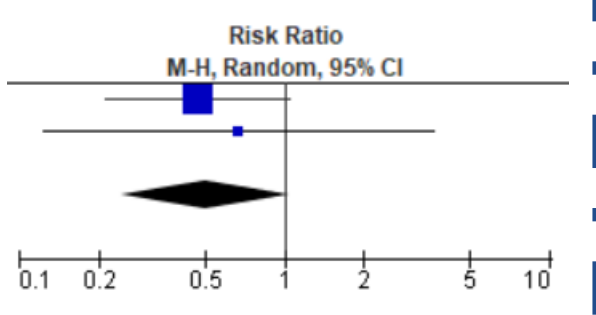
**VMT Classification (Focal  $\leq 400\mu\text{m}$ , Broad  $>400\mu\text{m}$ )** (GRADE: very low)



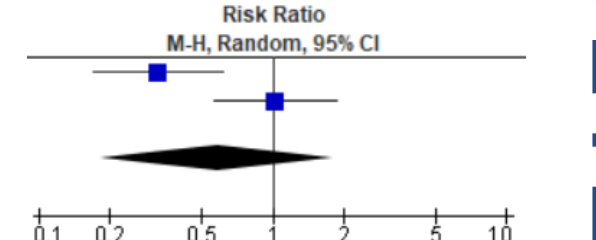
**Initial BCVA** (GRADE: very low)



**Ocular Comorbidity** (GRADE: very low)



**Previous IVI** (GRADE: very low)



## Conclusions

- Smaller VMT diameter, absence of ERM, and right eye involvement may support spontaneous VMT release
- Spontaneous VMT release can occur after prolonged observation with favourable visual outcomes
- It may be reasonable to consider observation as a management strategy in patients who have the above predictive factors and tolerable symptoms

## References

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