

DRY EYE POST-CATARACT SURGERY: A SYSTEMATIC REVIEW

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Background

Cataract surgery is the most prevalent surgical procedure in the United States and worldwide. Cataract surgery is a potential risk factor for dry eye.

Objective: To perform a systematic review of observational studies that report the effect of cataract surgery on symptoms of dry eye.

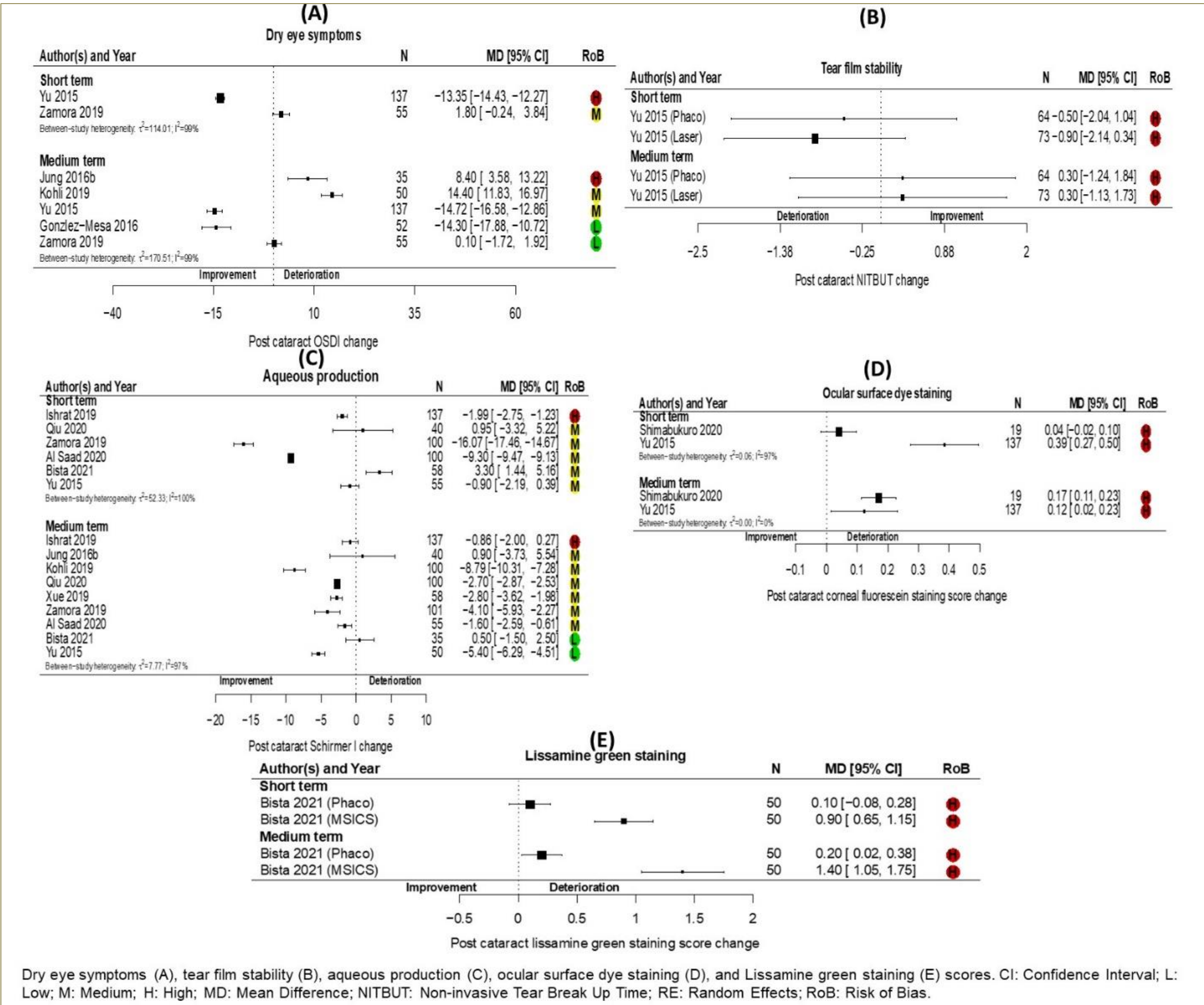
METHODS

- Search:**
 - Databases: Pubmed and Embase
 - Dates: 01/01/2010 to 08/16/2021
- Eligibility criteria:**
 - Included studies reporting postoperative dry eye symptoms compared with baseline or between different cataract extraction interventions among adults. All cataract surgery types were eligible.
 - Excluded studies in which patients had dry eye diagnosis at baseline.
- Outcomes at short-term (<1 week) and medium-term (>1 week to 3 months):**
 - Ocular Surface Disease Index (OSDI)
 - Tear break up time (TBUT)
 - Non-invasive tear break up time (NITBUT)
 - Schirmer's I test (ST-1)
 - Corneal fluorescein staining (CFS)
 - Lissamine green surface staining (LGSS)
- Data extraction and risk of bias assessment:**
 - Used Joanna Briggs Institute risk of bias tools.
 - Extracted by one author and verified by another author, using Systematic Review Data Repository Plus.

RESULTS

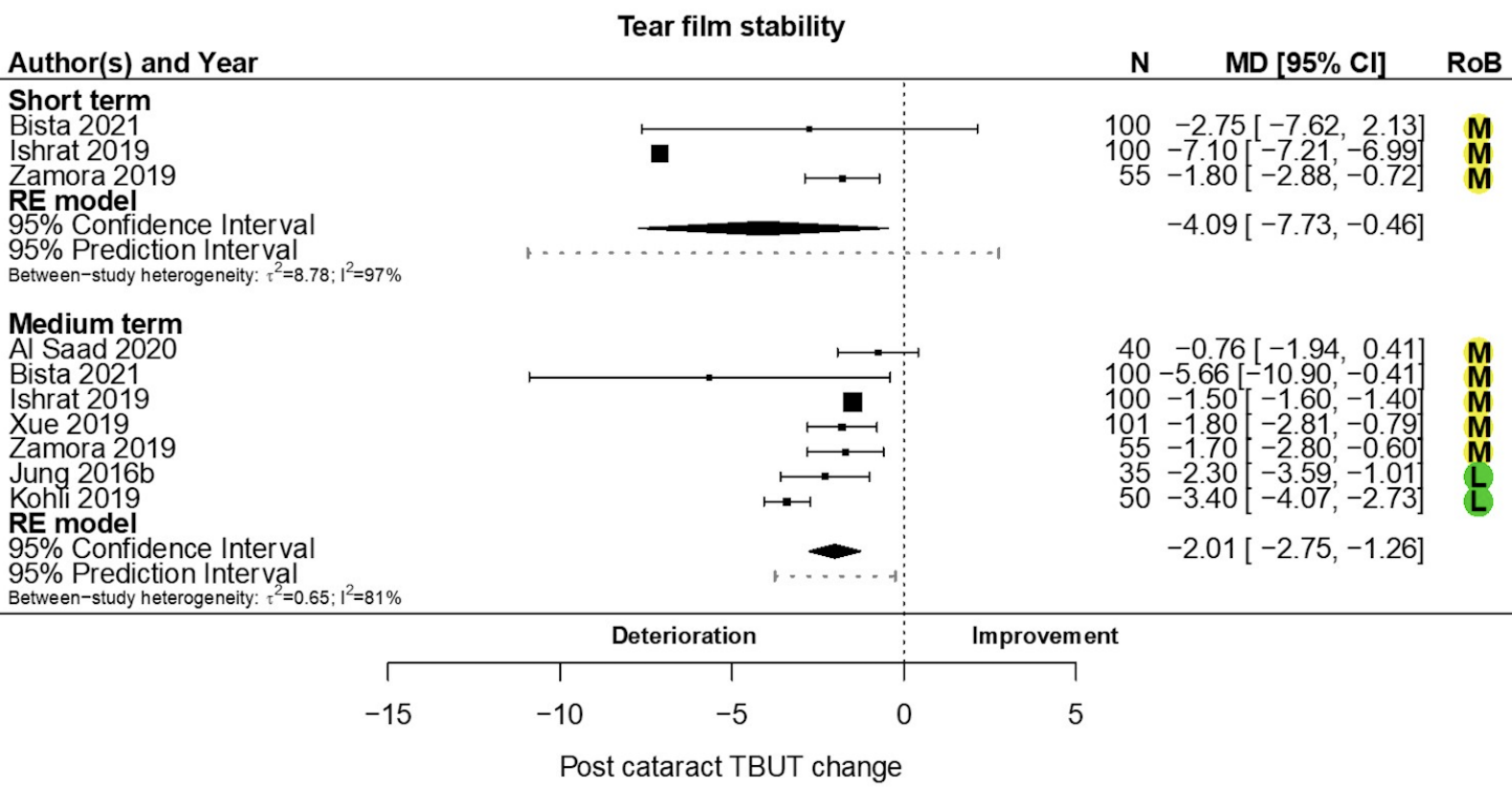
- Retrieved 11,132 records and included 20 observational studies from 10 countries with 1,515 participants (1,694 eyes). 53.2% females. Mean age 66.7. 45% cohort studies.
- Of the five studies evaluating our primary outcome (OSDI), the overall risk of bias was low in two studies (40%), moderate in two studies (40%), and high in one study (20%).

Figure 1. Forest plots of dry eye outcomes without meta-analysis



- High heterogeneity among studies evaluating all the outcomes assessed in our review.
- Meta-analysis suggests an association between cataract surgery and a worsening of TBUT score extending up to 3-month follow-up period (**Figure 2**).
- No clear associations between cataract surgery and other ocular surface outcomes (**Figure 1**).

Figure 2. Meta-analysis of the mean change from baseline in TBUT at short-term and medium-term follow-ups.



CONCLUSIONS

- Dry eye may persist up to three months postoperatively following cataract surgery.
- Further studies are required to determine if dry eye outcomes return to baseline at longer term follow-up after cataract surgery
- Clinicians are urged to incorporate the potential for postoperative dry eye symptoms into their discussions with patients undergoing cataract surgery.



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