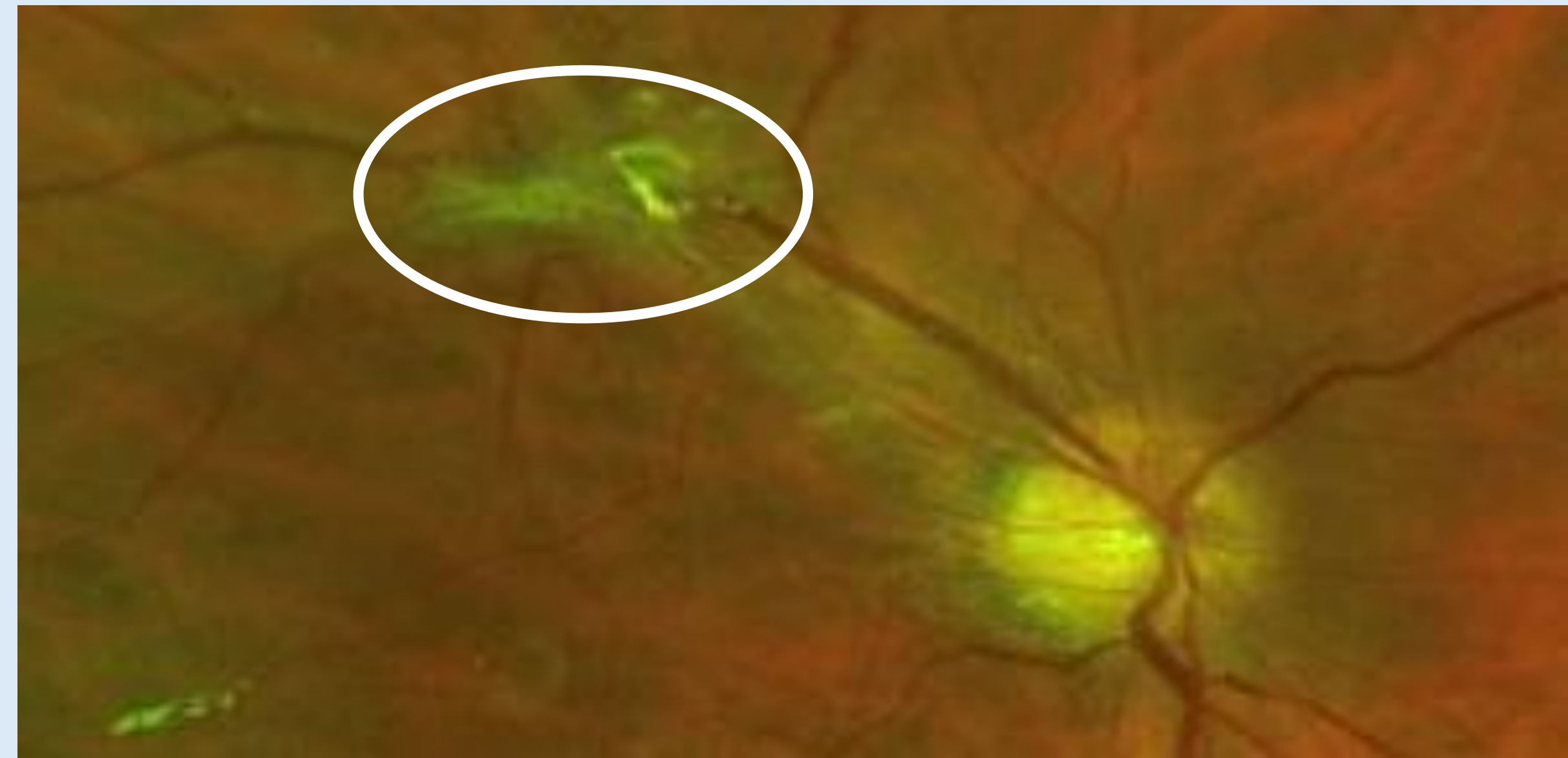


Background

- Proliferative vitreoretinopathy (PVR) remains the most common cause of surgical failure following **vitrectomy** for retinal detachment. It is driven by the proliferation and migration of retinal pigment epithelial cells and fibroblasts. These contractile membranes can cause the retina to **detach** after successful surgery.
- There is **no gold-standard pharmacological treatment** to prevent PVR.
- 5-fluorouracil (5FU)**, an antimetabolite, and **low molecular weight heparin (LMWH)**, known for its **anticoagulant and anti-inflammatory** effects, have been explored to reduce post-surgical fibrosis.
- The **aim** of this study was to evaluate whether 5FU and LMWH, improves clinical outcomes following vitrectomy for rhegmatogenous retinal detachment.

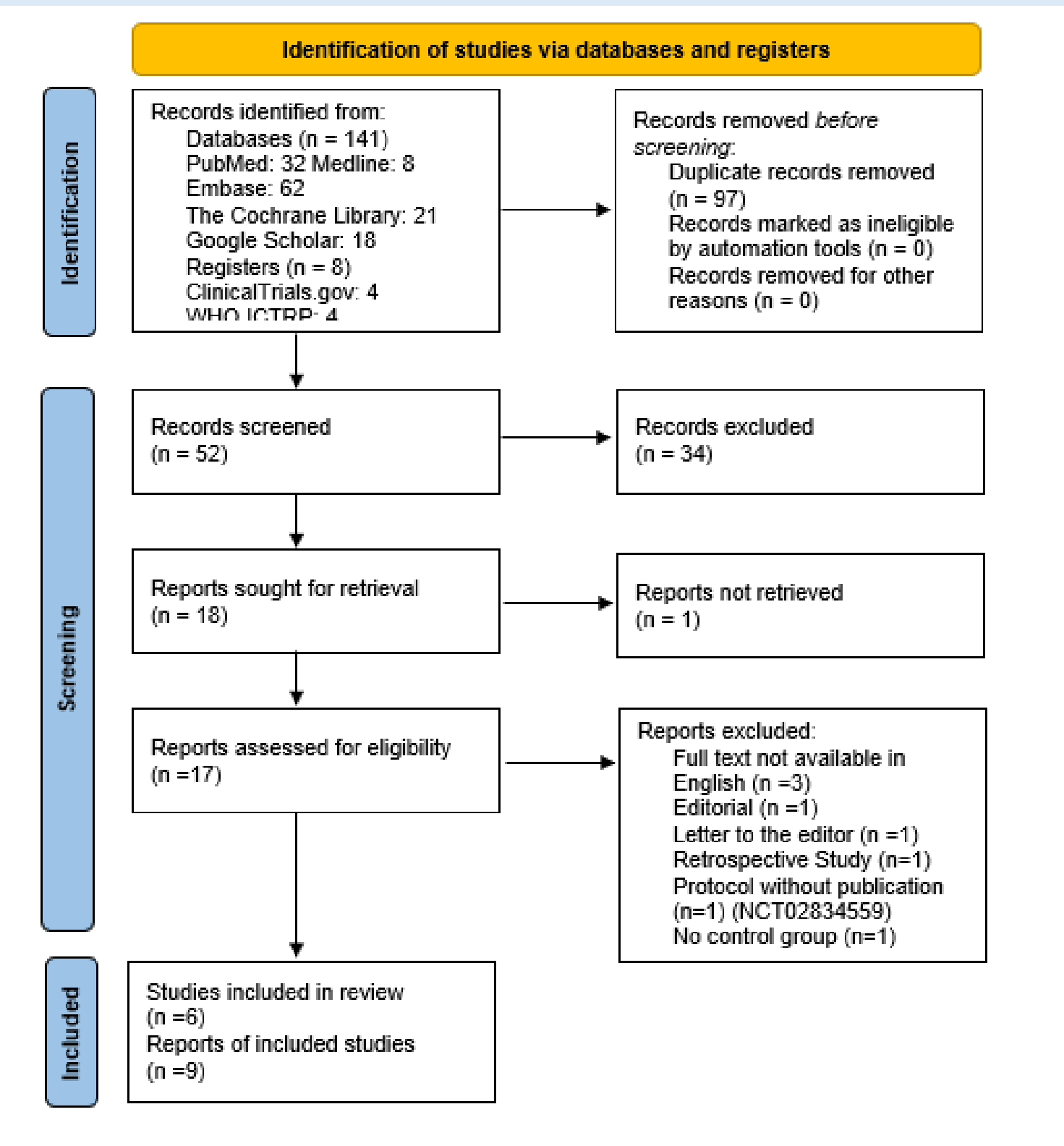


Methodology

- Protocol per the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (**PRISMA**) guidelines.
- Searched across PubMed, Embase, Medline, Cochrane Library and registers.
- Primary Outcomes:** Primary success, postoperative PVR development rate.
- Secondary Outcomes:** Reoperation rate.

- After exclusions, **six studies** involving **1,401 patients** met the eligibility criteria.
- Performed **subgroup analyses** based on **preoperative PVR grade C ratio** and follow-up time and sensitivity analyses.

Figure 1: PRISMA (2020) Flow Diagram



A. Primary Success

- No** significant benefit for primary success of vitrectomy at 3 and 6 months (**RR=0.99, 95% CI=0.93, 1.05, P=0.65, I²=0%**).

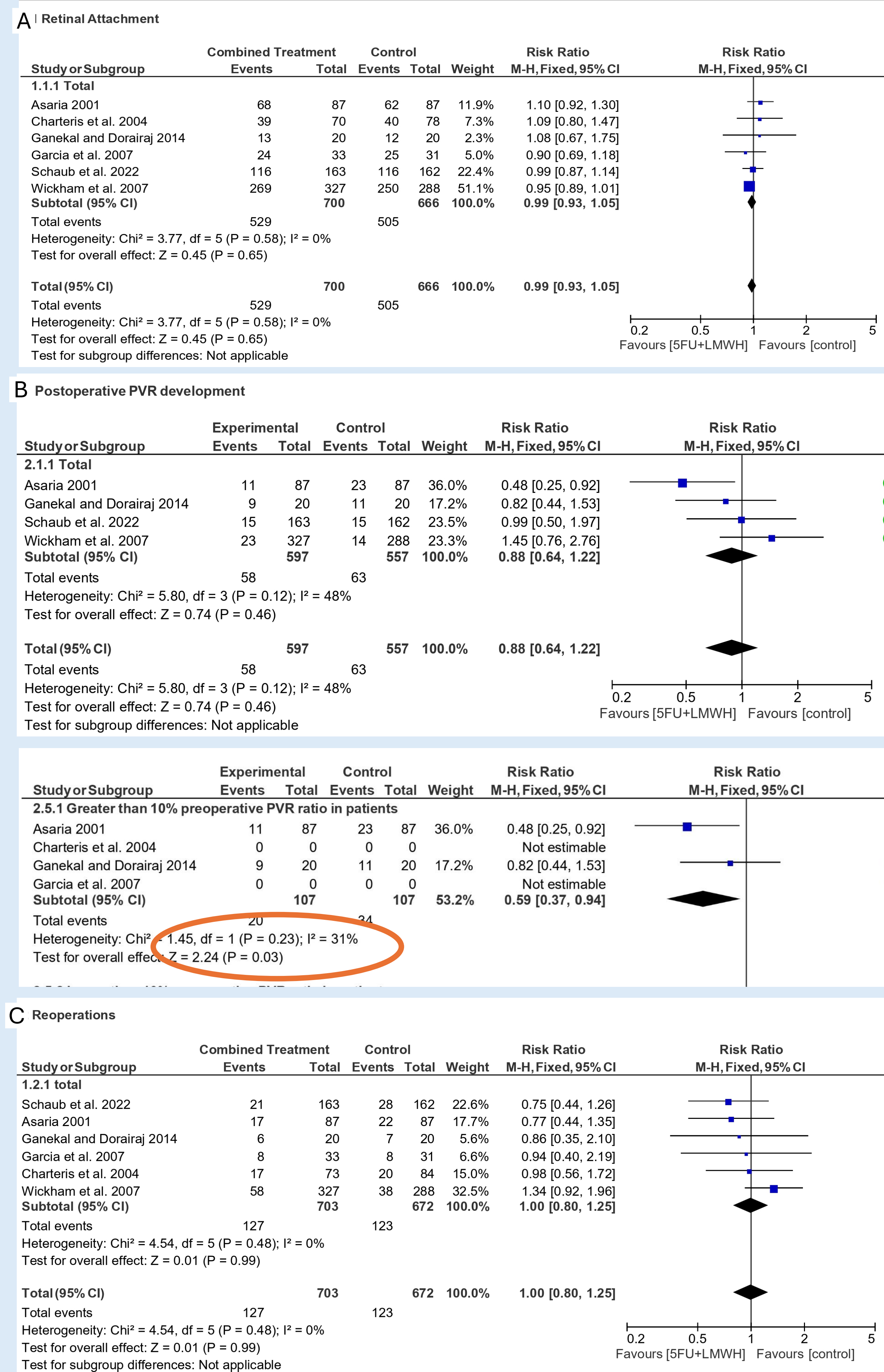
B. Postoperative PVR development

- Overall, **no** significant benefit in preventing postoperative PVR (**RR=0.88, 95% CI=0.64, 1.22, P=0.46, I²=48%**).
- In the **>10% preoperative PVR-C ratio** subgroup, there was a **significant** effect on preventing postoperative PVR occurrence (**P=0.03**).

C. Reoperations

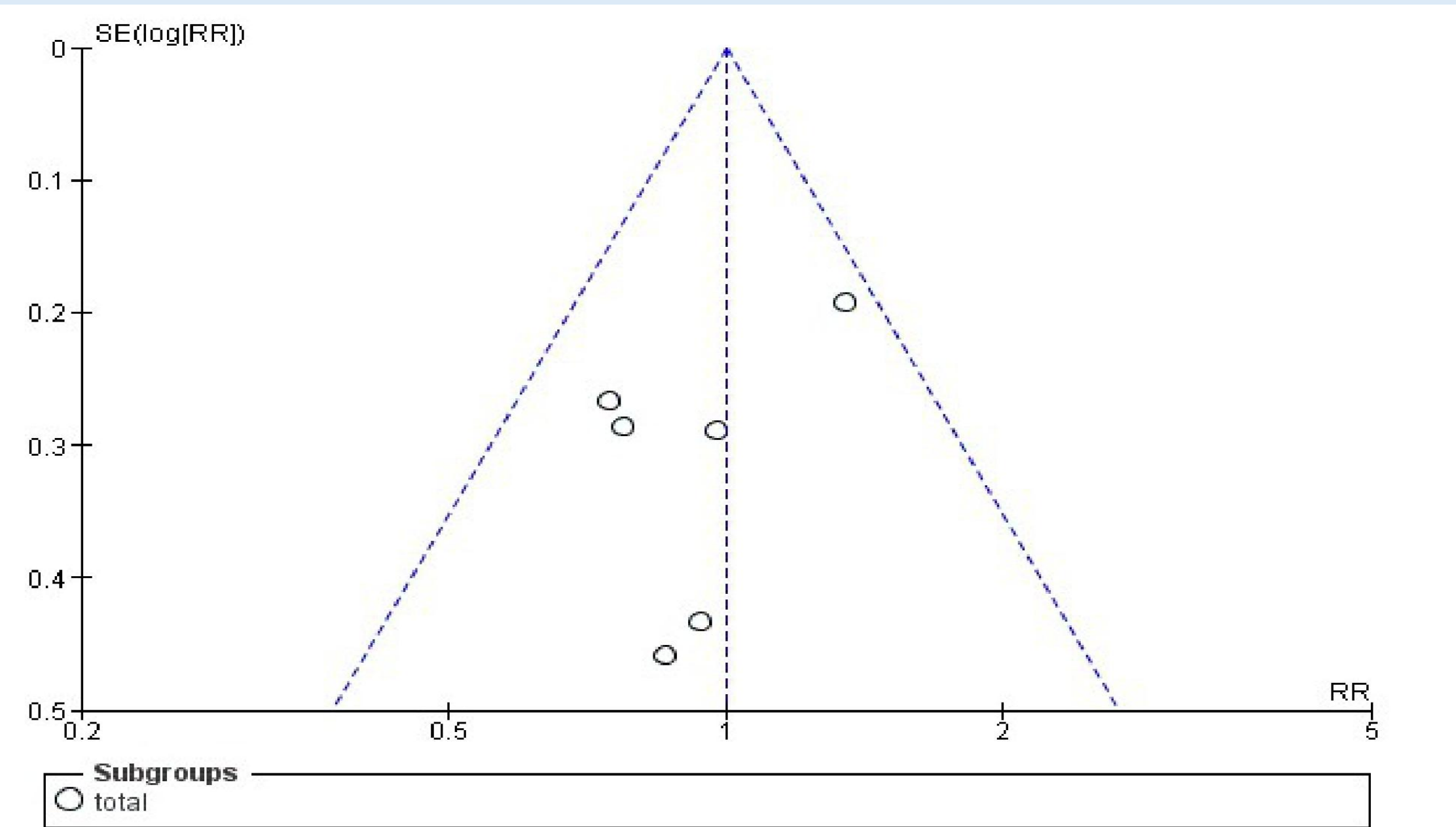
- No** significant effect on the incidence of vitreoretinal reoperations following failed primary vitrectomy (**RR=1.00, 95% CI=0.80, 1.25, P=0.99, I²=0%**).

Results



Discussion

- Funnel plot all **symmetrical** except reoperations.



Funnel plot of comparison: outcome: 1.2 Reoperations.

- No significant benefit for primary success or reoperation rates.
- Potential benefit in pre-operative PVR-C >10% subgroup.

Limitations:

- 3 trials done at the same **centre**.
- Inconsistent **risk stratification**.

Conclusion

- No routine** benefit of adjunctive 5FU + LMWH in RRD vitrectomy.
- Potential targeted use in **preoperative PVR** patients.
- Need **further trials** to verify results.

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