Ologen Implant versus Mitomycin-C in Trabeculectomy: An Updated Systematic Review and Meta-Analysis

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Introduction:

Trabeculectomy is the most common surgical treatment for glaucoma, which helps reduce intraocular pressure (IOP) via increased aqueous outflow. Several trials comparing MMC and Ologen for patients undergoing trabeculectomy have been published in the literature. This systematic review and meta-analysis compares these two adjuvants in trabeculectomy in terms of efficacy and safety

Aim:

To compare the outcomes of adjuvant Ologen implant versus mitomycin-C (MMC) in patients undergoing trabeculectomy

Methods:

A systematic review and meta-analysis were conducted in accordance with the PRISMA guidelines[9]. An electronic search was performed to identify all comparative studies comparing adjuvant Ologen implant and MMC during trabeculectomy.

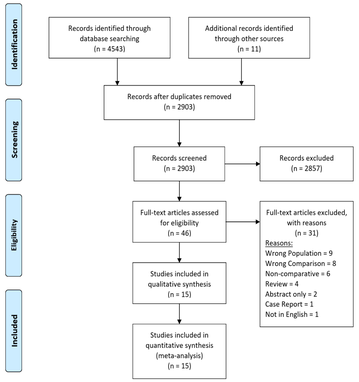
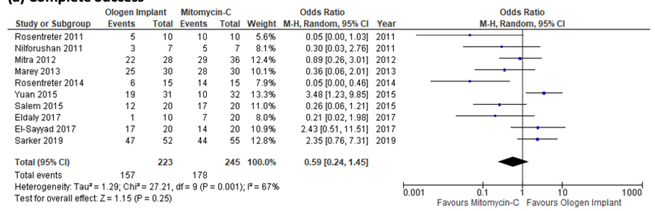


Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Flow Diagram. The PRISMA diagram details the search and selection processes applied during the overview.

Results:

- Study Sample: From 4554 screened articles, 15 studies enrolling 672 eyes from 666 patients were included
- Primary Outcomes:
  - No significant difference between the Ologen implant and MMC in terms of complete (odds ratio [OR] = 0.59, P = 0.25) and relative surgical success (OR = 1.34, P = 0.32). There was no significant difference between the two groups in IOP change at different time points following surgery, except at month 1 (mean difference [MD] = 1.41, P = 0.02) postoperatively, at which time the MMC group was favoured.
- Secondary Outcomes:
  - No statistically significant difference was noted in the reduction in glaucoma medications (MD = 0.03, P = 0.85) and change in BCVA (MD = 0.05, P = 0.36). The Ologen implant had similar results compared with MMC regarding bleb score and various complications, including conjunctival wound leaks, blebitis, bleb leak, hypotony and reoperation rate.

(a) Complete Success



(b) Relative Success

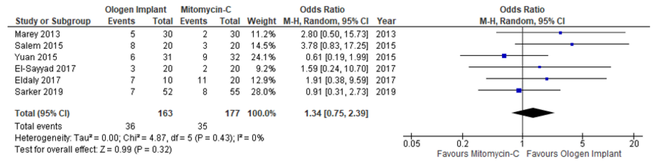


Figure 2: Forest Plot for Odds Ratio of Ologen Implant versus Mitomycin-C (MMC) – Surgical Success: (a) Complete Success (b) Relative Success. There was no statistically significant difference in the odds of complete and relative surgical success between both groups.

Conclusion

Across 15 studies, the Ologen implant was comparable to MMC following trabeculectomy in terms of surgical success, post-operative IOP, reduction of glaucoma medications, BCVA and bleb scoring as well as post-operative complications. Interestingly, MMC was associated with a lower IOP at day 1 and week 1 post-operatively whereas the Ologen implant had a significantly lower reoperation rate.

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