

Investigating Predictors of Retreatment Following Initial Anti-VEGF Therapy for Retinopathy of Prematurity: A Systematic Review and Meta-Analysis

- **Purpose** : Investigate factors contributing to **retreatment** after anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with retinopathy of prematurity (ROP).
- **Methods** :
 - Systematic review and meta-analysis of studies published up to November 2022.
 - Data extracted included gestational age (GA), birth weight (BW), ROP zone, and **incidence of retreatment(IR)**.
 - Used Mixed Methods Appraisal Tool (MMAT) for quality assessment and STATA 16 for statistical analysis.
- **Results** :
 - Overall IR was 19% (95% CI: 15%-23%).
 - IR by agent:
 - **Intravitreal ranibizumab (IVR): 27% (95% CI: 19%-35%)**
 - **Intravitreal aflibercept (IVA): 27% (95% CI: 6%-47%)**
 - **Intravitreal conbercept (IVC): 16% (95% CI: 13%-20%)**
 - **Intravitreal bevacizumab (IVB): 11% (95% CI: 7%-14%)**
 - **Zone I ROP had an 11% higher IR than Zone II.**
 - IVR retreatment rates increased with GA and BW, while IVB showed no such association.
- **Discussion** :
 - **IVB** demonstrated more consistent results with **lower retreatment rates** compared to other agents.
 - Variability in retreatment criteria across studies complicates comparisons.
- **Conclusion** : While all anti-VEGF agents are effective, **IVB appears superior due to its stability regardless of patient age or weight**. Future studies should address inconsistencies in retreatment definitions.

