

Abstract 66

COMPARISON OF RETREATMENT RATES BETWEEN BEVACIZUMAB, RANIBIZUMAB, AFLIBERCEPT AND LASER FOR RETINOPATHY OF PREMATURITY

Poster

Chang E.^[1], Josan A.^[2], Purohit R.^[1], Patel C.^[1], Xue K.^[2]

^[1]Oxford Eye Hospital, Oxford University Hospitals NHS Foundation Trust, Oxford, UK ~ Oxford ~ United Kingdom,

^[2]Nuffield Laboratory of Ophthalmology, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK ~ Oxford ~ United Kingdom

Purpose:

Intravitreal anti-VEGF agents are increasingly used as primary therapy for retinopathy of prematurity (ROP), particularly for posterior disease, but late disease recurrence requiring further treatment can occur which requires intensive monitoring. Head-to-head comparisons of retreatment rates between bevacizumab, ranibizumab, aflibercept, and laser are lacking.

Methods:

We conducted a comprehensive literature search for randomised controlled trials and non-randomised comparative studies that used bevacizumab, ranibizumab, aflibercept or laser for ROP. Studies were evaluated by GRADE framework and those with biased case selection, non-randomised case-control, or lack of control group were excluded. Frequentist meta-analyses of proportions were performed to determine the absolute primary retreatment rate of each therapeutic modality followed by Bayesian network meta-analyses comparing pairs of treatments in type 1 ROP and Zone I ROP.

Results:

30 studies (comprising 4686 eyes) were included for network meta-analysis. Laser was associated with a significant 62% (95% CrI:16-83) reduction in retreatment risk compared with ranibizumab for type 1 ROP. Bevacizumab was associated with a significant 67% (95% CrI: 10-90) reduction in retreatment risk compared with laser for Zone 1 ROP. The mean time to retreatment following primary aflibercept (12.96 weeks \pm 0.47 SEM) and bevacizumab (11.36 \pm 0.54 SEM) were significantly longer than ranibizumab (9.29 \pm 0.43 SEM) for type 1 ROP ($p=7E-07$ and $p=9E-03$, respectively).

Conclusions:

Laser was associated with a lower rate of retreatment than ranibizumab in type 1 ROP, while bevacizumab was associated with lower rate of retreatment than laser in Zone I ROP. The differences in timing of ROP recurrence between anti-VEGF agents could help to optimise monitoring regimes.