Efficacy of Intravitreal Bevacizumab for Stage 3+ Retinopathy of Prematurity

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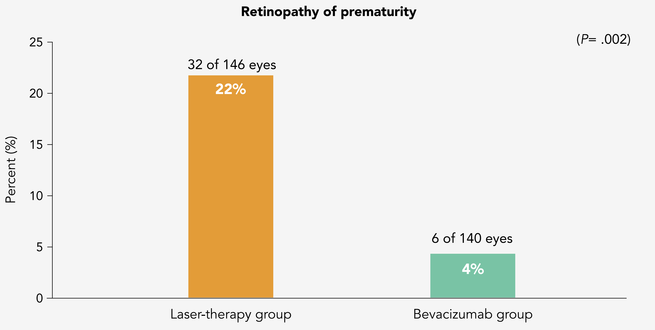
Peripheral retinal ablation with conventional (confluent) laser therapy is destructive, causes complications, and does not prevent all vision loss, especially in cases of retinopathy of prematurity (ROP) affecting zone I of the eye. This prospective, multi-center study assessed intravitreal bevacizumab monotherapy vs conventional laser therapy for zone I or zone II posterior stage 3 with plus disease ROP, with primary outcome of ROP recurrence requiring retreatment.

This was a prospective, controlled, randomized, stratified, multi-center trial, randomizing infants to intravitreal bevacizumab or conventional laser therapy bilaterally.

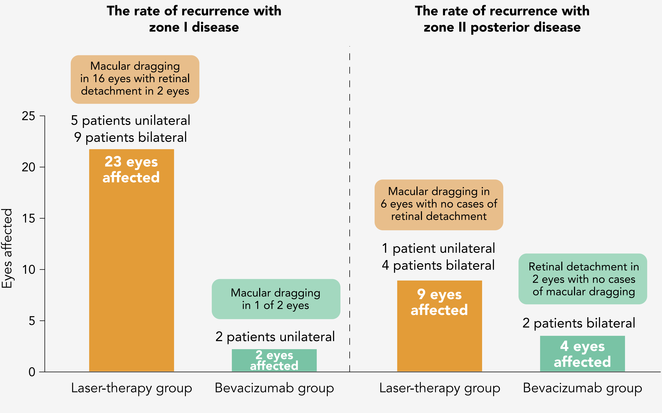
The researchers enrolled 150 infants (total sample of 300 eyes); 143 infants survived to 54 weeks PMA, and the 7 infants who died were not included in the primary outcome analyses.

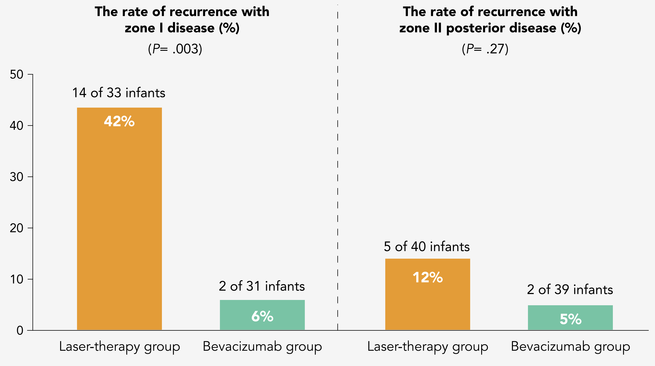
Monotherapy with intravitreal bevacizumab resulted in less ROP recurrence than with laser therapy.



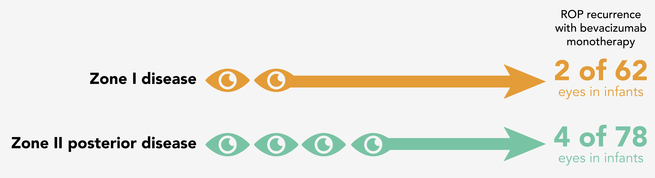
Conventional laser therapy resulted in permanent destruction of the vessels in the peripheral retina, whereas intravitreal bevacizumab allowed for continued vessel growth into the peripheral retina.

Rates of recurrence with zone I disease alone was significantly higher with conventional laser therapy than with intravitreal bevacizumab, although rates with zone II posterior disease did not differ significantly between groups.





Both zones considered together, the mean time to recurrence was 16.0±4.6 weeks for 6 eyes after intravitreal bevacizumab therapy, as compared with 6.2±5.7 weeks for 32 eyes after conventional laser therapy.



This serves as a warning to clinicians that careful follow-up is needed in infants treated with intravitreal bevacizumab, who cannot be considered to be successfully treated until there is completion of vascularization with no active disease or clinically significant tractional elements.

Conclusions

Intravitreal bevacizumab monotherapy, as compared with conventional laser therapy, in infants with stage 3 ROP with plus disease showed a significant benefit for zone I but not zone II disease. Development of peripheral retinal vessels continued after treatment with intravitreal bevacizumab, but conventional laser therapy led to permanent destruction of the peripheral retina. This trial was too small to assess safety.