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Sir,  
**Laser barrage anterior to ridge in threshold ROP-caveat**

We read with interest the study by Ells *et al.*<sup>1</sup> The authors have succinctly highlighted the role of laser posterior to the neovascular ridge in severe retinopathy of prematurity (ROP) in a select group of patients.

Ells *et al.*<sup>1</sup> have themselves highlighted some of the limitations in their study. In addition, we feel, they could have nuanced the study findings.

Confluent laser treatment to larger avascular retina in Zone II ROP is likely to be more beneficial than secondary treatment to a small strip of vascular posterior retina while allowing skip areas in the avascular retina.<sup>2</sup> We reckon that posterior laser to vascular retina should be considered as a last resort after treatment to avascular retina has been completed. This, especially, should be the case with the temporal retina in Zone II, where the macula shows temporal traction and accurate laser posterior to ridge is fraught with the risk of macular laser/foveal laser in an awake infant. In this regard, the 'safer zones' for such laser would be nasal, superior, and inferior. This could be a practical point of consideration for clinicians treating ROP.

Also it would be an overstatement to infer that laser treatment posterior to ridge results in rapid regression of ROP as the authors conclude. We have not seen this in the present study findings, and the progression of two eyes to retinal detachment belies the claim.

We agree with the authors that posterior retinal laser is a safe option of ROP treatment and it may have a role in reducing the chances of retinal detachment, but that remains to be proven with controlled trials.

#### Conflict of interest

The authors declare no conflict of interest.

#### References

- 1 Ells AL, Gole GA, Lloyd Hildebrand P, Ingram A, Wilson CM, Geoff Williams R. Posterior to the ridge laser treatment for severe stage 3 retinopathy of prematurity. *Eye (Lond)* 2013; **27**(4): 525–530.
- 2 Banach MJ, Ferrone PJ, Trese MT. A comparison of dense versus less dense diode laser photocoagulation patterns for threshold retinopathy of prematurity. *Ophthalmology* 2000; **107**(2): 324–327.

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Sir,  
**Response to Dr Uparkar and Dr Kaul**

We thank Drs Uparkar and Kaul for their correspondence<sup>1</sup> with regard to our paper on laser photocoagulation, posterior to the neovascular ridge in infants with severe subgroup of Type I retinopathy of prematurity.<sup>2</sup>

In addressing the suggestion that confluent secondary laser treatment be applied anterior to the ridge, we wish to confirm that all of these infants did receive laser to the avascular anterior retina and to all skip areas in addition to laser posterior to the ridge.

We agree with Drs Uparkar and Kaul that posterior laser should be considered with great caution; however, all of our infant eyes represented a very severe form of Type I ROP and were treated under general anesthesia where there was maximum control of laser application within the temporal arcades. Minimal temporal arcade traction was permitted in our treated eyes, as we commonly observe this feature in eyes with severe Type I ROP prior to treatment; however, a minimum distance of 3000  $\mu$ m (two disc diameters) between the fovea and temporal ridge was required in order to minimize potential complications of posterior laser.

Two eyes in this 3-year series progressed to 4A retinal detachment and required further intervention, however 89% of eyes did not go on to stage 4 retinal detachment and experienced regression within 1 week, which we consider to be a rapid regression of very severe disease after laser treatment. Lepore and colleagues<sup>3</sup> report fluorescein angiography cases with avascular loops, which exist posterior to the ridge, and hypothesize that these ischemic posterior retina areas may contribute significantly to the production of VEGF. We also hypothesize that additional laser to these posterior ischemic retina areas may facilitate regression of neovascularization in this subgroup of infants with very severe zone II, stage 3 ROP.

We describe clear morphological criteria for consideration of posterior laser in a group of premature infant eyes with very severe Type I ROP, which may halt progression of the disease and minimize visual loss from cicatricial macular changes or avoid advancement to stage 4 or 5 ROP warranting vitreoretinal surgery.

#### Conflict of interest

The authors declare no conflict of interest.