SCRIPT: ROP TREATMENT

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In this webinar we will learn about treatment of Retinopathy of prematurity

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So what are the indications for laser treatment of ROP. The Early Treatment of ROP (or ETROP) guidelines suggest we should treat all cases of Type I ROP within 48 hours.

Type I ROP includes

Zone I, any stage with plus OR Zone I, stage 3 without plus OR Zone II, stage 2-3 with plus.

This also includes all cases of Aggressive posterior ROP.

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So how does laser act to cause ROP regression?

Laser photocoagulation destroys avascular retina, removes the ischemic stimulus, and thereby decreases neovascularization and fibrovascular proliferation

Thereby leading to regression of ROP

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Before starting laser treatment, informed parental consent is necessary. The procedure is done under monitoring by a neonatologist.

Laser photocoagulation of avascular retina must be done within 48 Hours when indicated. Both eyes are lasered in 1 sitting under topical anaesthesia by trained experts using Indirect laser ophthalmoscope.

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After laser treatment, antibiotic/steroid combination eye drops and tears eye drops are prescribed three times a day for 5 days.

The follow up is done 1 weekly to observe ROP progression or regression. Review is done for laser augmentation in skip areas. A long term follow up is done 4 monthly for retinal status and to detect refractive errors.

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What is the current usage of Anti VEGF drugs in ROP?

Studies have observed significant benefit of AntiVEGF drugs like Bevacizumab to cause regression in Zone 1 ROP (and APROP) and therefore they are a useful adjunct to laser treatment.

These drugs also reduce iris neovessels and help in pupillary dilation in rigid pupils with severe plus disease, thereby allowing laser treatment to be done in the next sitting.

A major benefit is that these drugs promote vascularization towards the retinal periphery, thereby improving visual field (unlike laser which destroys the retinal periphery). Therefore, they are also useful to increase vascularized retinal area especially in very small zone 1 ROP where even the macula is avascular.

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But Anti VEGF usage has several limitations in the current scenario. There is no clarity on dose or the number of injections. There is no clarity on which antiVEGF drug is better.

There is a risk of systemic absorption of the drug and subsequent side effects, but there are no studies on long term safety outcomes. There is only one randomized study (BEAT ROP) which was too small to assess safety.

Moreover, delayed recurrences are common and long term close follow up is needed.

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ROP surgery is required is cases of advanced ROP. For stage 4 ROP with subtotal retinal detachment, a 25G or 27G small gauge lens sparing vitreoretinal surgery has good outcomes.

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In Stage 5 ROP with total retinal detachment, the prognosis is poor. Yet, in bilateral cases, surgical trial is done in hope of restoring navigable vision.

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So we have learnt that -

- Laser treatment for ROP is effective modality and has good outcomes
- AntiVEGF drugs are a useful adjunct to laser in selected cases, but long term safety data is not available
- Surgery is useful in selected advanced ROP cases, but prognosis is poor in stage 5 ROP

Therefore, timely ROP screening and treatment is key to prevent ROP blindness in these premature babies.

Thank you.