

COULD BEVACIZUMAB INTRAVITREAL REPLACE LASER TREATMENT IN RETINOPATHY OF PREMATURITY?

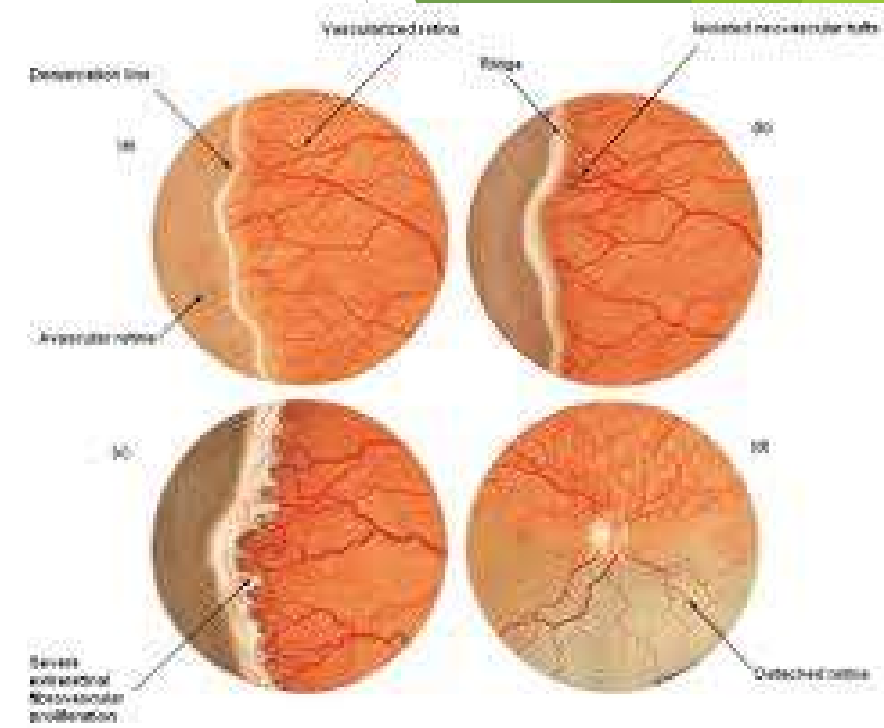
Dr. POPA ELENA DORINA, Dr. PASCA BIANCA, Dr. OPREAN
ADRIANA, Dr. LAURA CONSTANTIN, Dr. IONICA CIPRIAN,
As. Med. CAMELIA BICHER

What is Retinopathy of Prematurity (ROP)

- ▶ Proliferating disorder of the immature retina
- ▶ Biphasic disease:
 - phase 1 - oxygen induced vascular obliteration
 - phase 2 -hypoxia -induced vessel proliferation

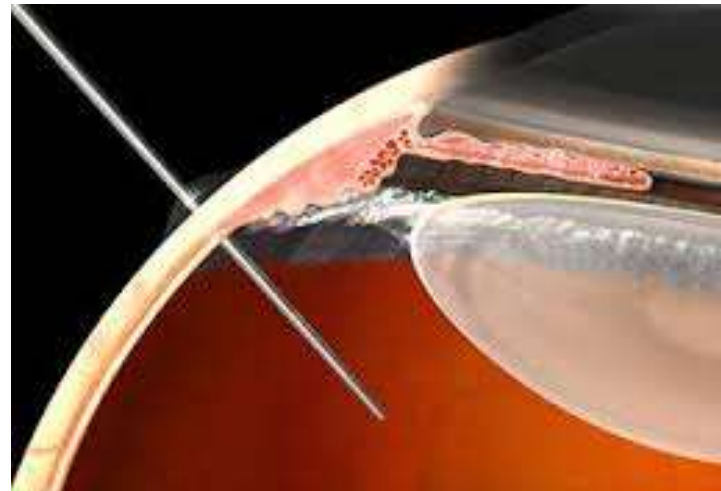
NOT TO FORGET that:

Neovascularization is mainly driven by vascular endothelial growth factor(VEGF)



What is BEVACIZUMAB and how is it use?

- ▶ Is a humanized anti-VEGF monoclonal antibody
- ▶ Dosage: 0.625mg(0,025ml) it is half of the adult dose
- ▶ Place: superotemporaly; 1,2-2mm from limbus with 30 G needle

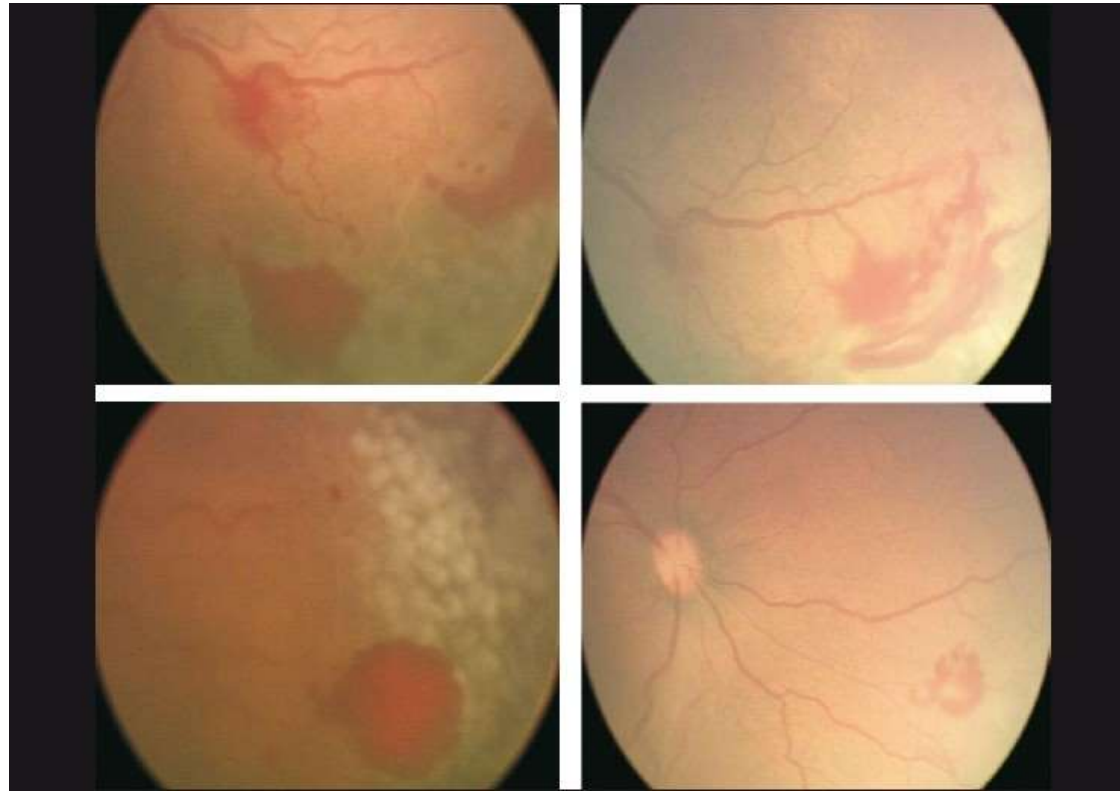


What are the evidence for using antiVEGF agents for ROP?

- ▶ 2007- Retrospective reports of experience with infants with aggressive posterior ROP(AP-ROP). First news that bevacizumab intravitreal could induce the regression of AP ROP without retinal detachment.
- ▶ 2008- first prospective case series involving 18 eyes of 13 children with different stages of ROP. Results: after Bevacizumab intravitreal- regression of neovascularization in 17 eyes
- ▶ Randomized trial: BEAT-ROP study of 150 infants (300 eyes)

What are the evidence about ROP treatment

- ▶ Peripheral retinal laser ablation-GOLD STANDARD TREATMENT in ROP..... until now

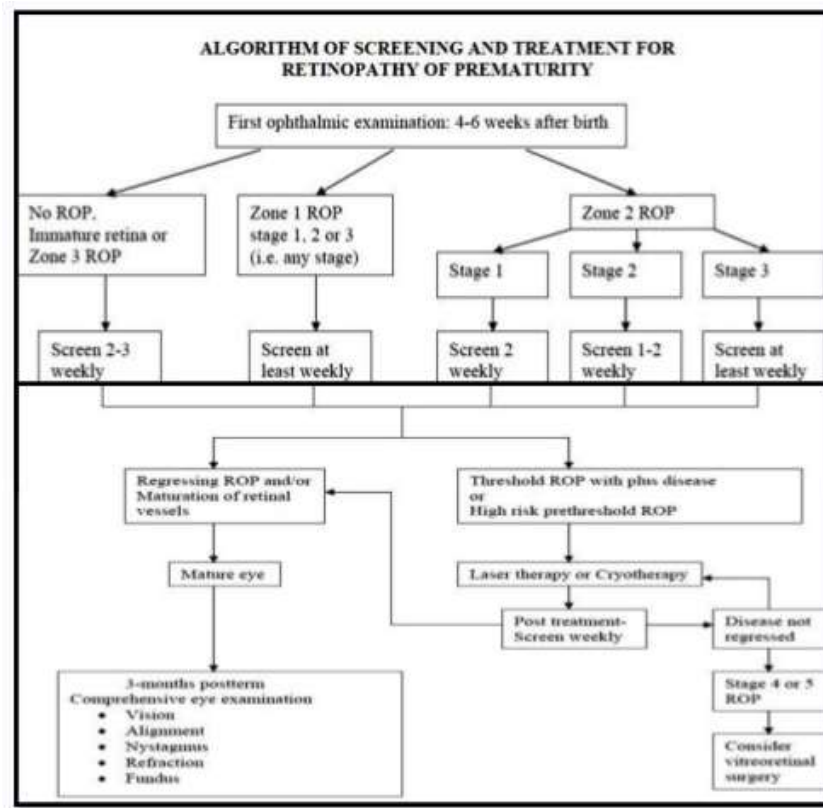


OUR EXPERIENCE WITH ROP SCREENING AND ROP TREATMENT

| YEAR | TOTAL prematures babies | ROP 1-2 | ROP 3-4 | TREATMENT |
|------|-------------------------|-----------|---------|--|
| 2010 | 209 | 40 cazuri | 2 | 1 case laser treatment |
| 2011 | 263 | 48 cases | 3 | No treatment |
| 2012 | 214 | 37 cases | - | - |
| 2013 | 223 | 27 cases | - | - |
| 2014 | 215 | 28 cases | 2 | 1 case laser therapy; 1 case bevacizumab IVT |
| 2015 | 220 | 45 cases | 3 | 1 case laser therapy, 1 case bevacizumab IVT, 1 case retinal detachment in one eye the other bevacizumab IVT |

LASER Vs. BEVACIZUMAB INTRAVITREAL

| | ADVANTAGES | DISADVANTAGES |
|--------------------------|---|---|
| LASER | Safe and efficient - long term results showing regression and reduce progression of ROP(Early Treatment ROP study) | Corneal edema, anterior chamber reaction, intraocular hemorrhage, cataract formation, intraocular pressure changes, significant decrease in peripheral vision, strabismus, glaucoma, sever myopia, retinal detachment |
| BEVACIZUMAB INTRAVITREAL | Easy to perform on undilated pupil, on small babies, no needs for general anesthesia | Possible thromboembolic and hemorrhagic side effects |



FUTURE OF BEVACIZUMAB INTRAVITREAL for ROP

- ▶ The future of ROP treatment in antiVEGF era looks promising
- ▶ Bevacizumab provides an alternate therapy
KEY ASPECT of bevacizumab intravitreal: **ISSUE OF RECURRENCE**

FUTURE OF BEVACIZUMAB INTRAVITREAL for ROP

- ▶ Recurrence between BEVACIZUMAB group and laser group(BEAT-ROP)
was
SIGNIFICANTLY DIFFERENT

9 weeks for laser group

7 month for Bevacizumab group

THE FOLLOW UP PERIOD MUST BE EXTENDED