



EXUDATIVE AMD: NEW TREATMENTS

DR ALICIA VALVERDE-MEGÍAS

FIELDS

- INJECTIONS
- RADIOTHERAPY
- SURGERY
- LASER

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INJECTIONS

-NEW DRUGS

- **RTH**
- **CROSSMAB; RG7716**

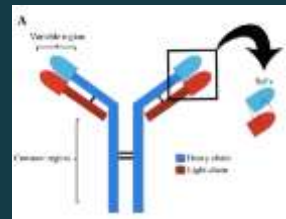
-NEW ROUTES OF ADMINISTRATION

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RTH258: BROLUCIZUMAB

-Single chain antibody:

small size,
tissue penetration
rapid systemic clearance



-HARRIER and HAWK studies (1800 p)

-When given every 3 months was non-inferior to Eylea every 2 months

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CROSSMAB; RG7716

-Bispecific domain-exchanged
(crossed) monoclonal antibody

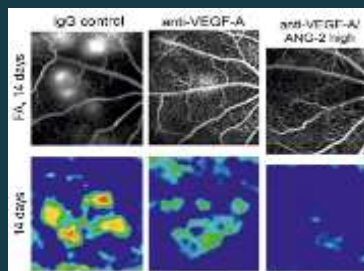


-VEGF-A and angiopoietin-2 (ANG-2)

-ANG-1 promotes mature vessels

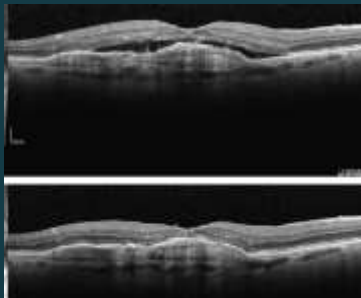
-ANG-2 enhances NV development

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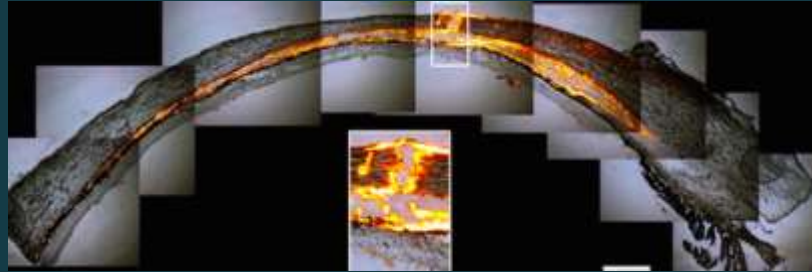
Phase 1 Trial of Anti-Vascular Endothelial Growth Factor/Antiangiopoietin 2 Bispecific Antibody RG7716 for Neovascular Age-Related Macular Degeneration

Dr Usha Chakravarthy



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NEW ROUTES OF ADMINISTRATION



SUPRACHOROIAL



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RADIOTHERAPY



From the inside

Epimacular
Brachytherapy

MERLOT study
(CABERNET, MERITAGE)






From the outside

Stereotactic
Radiosurgery



INTREPID study
STAR study

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Epimacular Brachytherapy for Previously Treated Neovascular Age-Related Macular Degeneration (MERLOT)

A Phase 3 Randomized Controlled Trial

- 363 patients (224 SRT)
- Less visual acuity at follow-up (5 letters)
- More complications
- More growth of lesions
- Injections after: not different



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RADIOTHERAPY: SRT SYSTEM

- Oraya (CE mark)
- Fast: 15 – 30 minutes
- Only performed once
- 16 Gray (\approx dental X-ray)
- Added to Injections






Figure 1: The iRay SRS robot and I-Guide

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INTREPID STUDY (2013)

- 230 patients already under treatment with Ranibizumab
- Then, SRT (16 or 24 Gy) or sham
- Maintain PRN strategy
- FEWER injections needed 12 months after SRT
- Change in vision: almost stable



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CONTROLLED CLINICAL TRIAL (STAR STUDY)

- 411 patients receiving PRN Ranibizumab
- Then, SRT or sham (2016)
- Maintain PRN strategy
- 24 months

*Excluded: diabetic, too long/short eyes, media opacity

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SURGERY IN AMD



-FIRST STEPS: TO REMOVE

-FUTURE: TO ADD

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SURGERY IN AMD



Barbara Parolini

Director of Vitreo-Retinal Surgery Service,
Istituto Clinico Sant'Anna,
Brescia, Italy

2015:
first autologous
retina
transplantation

Dr. Tamer Mahmoud MD

Ophthalmology | Royal Oak, MI



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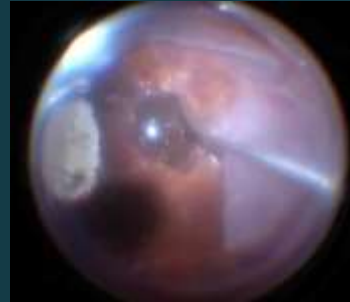
SURGERY: WHAT CAN WE REPLACE?

- RPE GRAFT (IF RETINA PRESERVED)
- RETINAL TRANSPLANT (HOLES)
- BOTH →



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SURGERY



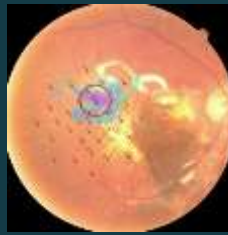
SURGERY

-IMPORTANT:

CAUTION IN INDICATIONS

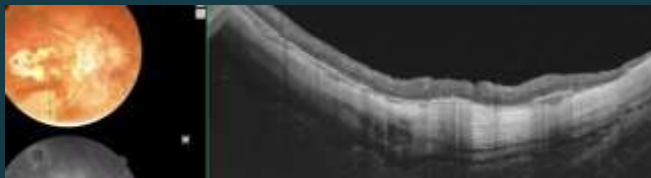
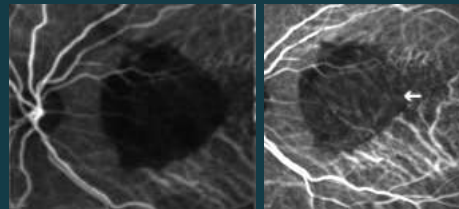
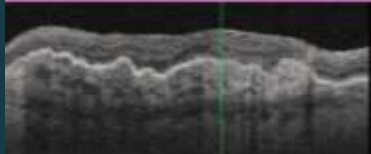
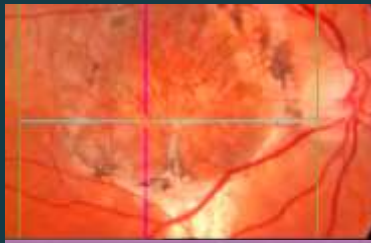
MICROPERIMETRY NEEDED

DIFFICULT TECHNIQUE

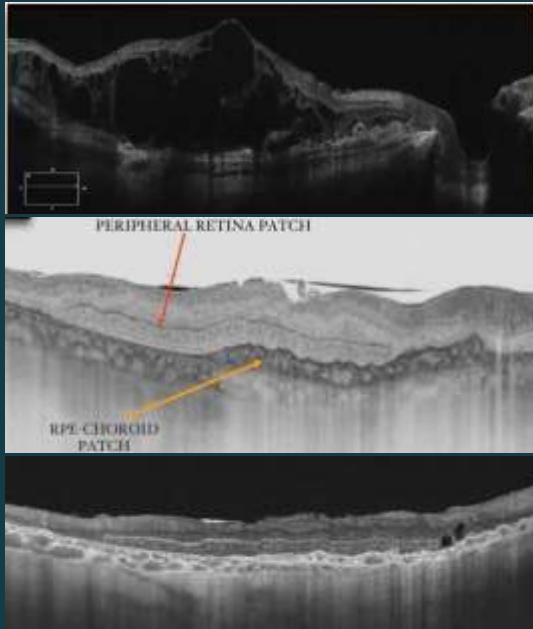


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RESULTS (CASES BY DR PAROLINI)



RESULTS (CASES BY DR PAROLINI)

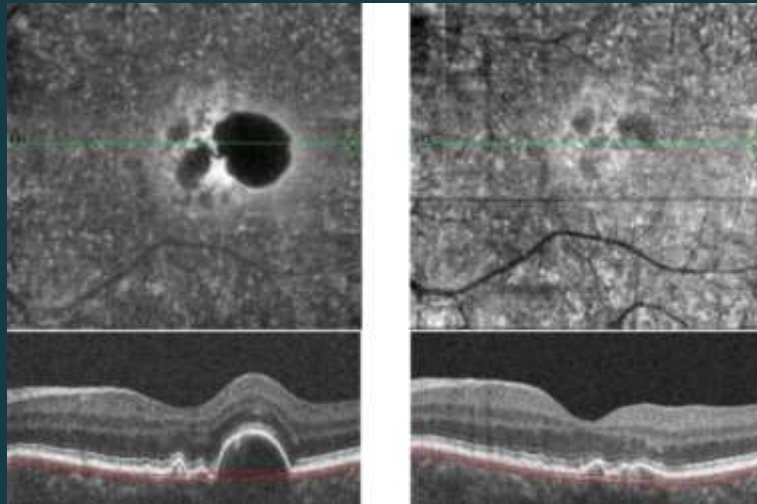


PREOP

1 WEEK

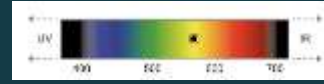
8 MONTHS

LASER IN AMD





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LASER IN AMD



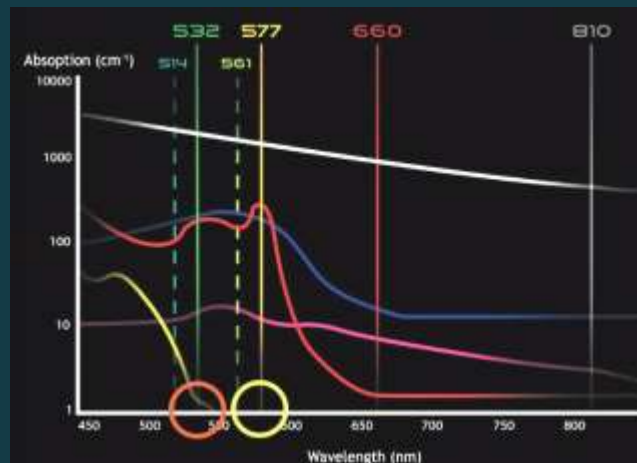
DO NOT FORGET WHAT WE OUGHT TO KNOW ALREADY

-LASER has been used before:

- 1999 Ophthalmology journal (229 eyes) 
810-nm (infrared) visible or subthreshold
Visual acuity improvement (2 years)
CNV not higher than control group
- Prophylactic treatment of AMD trial (2006) 810 nm
Vision loss, higher CNV rates. Three years 

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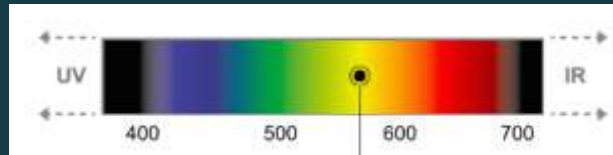
DIFFERENT TYPES OF LASER



— Xanthophyll — Hemoglobin
— Melanin — Oxyhemoglobin
— Retinal Pigment Epithelium

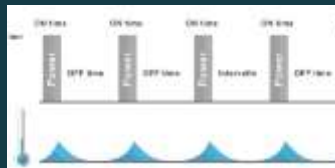
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577 NM LASER



- Yellow LASER
- Different from 810 nm
- Xanthophylls absorption decreased
- SubLiminal mode

ξανθός



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NAVILAS LASER SYSTEM

- 577 nm
- 2016: FDA clearance
- Indicated for:
 - CSDME (DIABETIC)
 - Panretinal Photoc (DIABETIC)
 - Focal laser of CNV
 - Lattice and retinal tears
- Age related Macular Degeneration NOT INCLUDED



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LASER: THE FUTURE?

-Biologic effects: blood flow improvement, ATP formation, reduces oxidative stress and inflammation (Mitochondrial CCO).



-Photobiomodulation (PBM)

-2017 June: off-label. Study in Canada in AMD combining different wavelengths (590+670+790 nm)

-LumiThera: LIGHTSITE I trial; multiwave length, VA improvement. Encouraging results. Two months ago.

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PROMISING FUTURE

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