STATE BOARD OF OPTOMETRY
2450 DEL PASO ROAD, SUITE 105, SACRAMENTO, CA 95834
P (916) 575-7170 F (916) 575-7292 www.optometry .ca.gov

Continuing Education Course Approval Checklist

Title: Taste of the Islands: Glaucoma Management: What Should I Do Next?

Provider Name: Coastal Vision Medical Group c/o Ms. Gina Valdemar

☑Completed Application
Open to all Optometrists? ☑Yes ☐No
Maintain Record Agreement? ☑Yes ☐No

☑Correct Application Fee

☑Detailed Course Summary

☐Detailed Course Outline

☐PowerPoint and/or other Presentation Materials

☐Advertising (optional)

☐CV for EACH Course Instructor

☐License Verification for Each Course Instructor
Disciplinary History? ☐Yes ☐No

CALIFORNIA STATE BOARD OF OPTOMETRY

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CONTINUING EDUCATION COURSE APPROVAL APPLICATION

$50 Mandatory

Pursuant to California Code of Regulations (CCR) § 1536, the Board will approve continuing education (CE) courses after receiving the applicable fee, the requested information below and it has been determined that the course meets criteria specified in CCR § 1536(g).

In addition to the information requested below, please attach a copy of the course schedule and topical outline of the subject matter. Applications must be submitted 45 days prior to the course presentation date.

Please type or print clearly.

Course Title "Taste of the Islands CE" Glaucoma Management: What Should I Do Next?	**Course Presentation Date** 9am – 4:30pm 04/30/2017

Course Provider Contact Information

Provider Name Coastal Vision Medical Group

Gina (First) Valdemar (Last) (Middle)

Provider Mailing Address

Street 293 S. Main St. #100 **City** Orange **State** CA **Zip** 92868

Provider Email Address ginavaldemar@coastal-vision.com

Will the proposed course be open to all California licensed optometrists?	☒ YES ☐ NO
Do you agree to maintain and furnish to the Board and/or attending licensee such records of course content and attendance as the Board requires, for a period of at least three years from the date of course presentation?	☒ YES ☐ NO

Course Instructor Information

Please provide the information below and attach the curriculum vitae for each instructor or lecturer involved in the course. If there are more instructors in the course, please provide the requested information on a separate sheet of paper.

Instructor Name

Bao Thu (Betsy) (First) Nguyen (Last) (Middle)

License Number 62609	**License Type** MD
Phone Number (714) 746-9679	**Email Address** ginavaldemar@coastal-vision

I declare under penalty of perjury under the laws of the State of California that all the information submitted on this form and on any accompanying attachments submitted is true and correct.

Signature of Course Provider 3-20-17 *Date*

COASTALVISION
Technique. Technology. Trust.

March 23, 2017

State Board of Optometry
2450 Del Paso Road, Ste. 105
Sacramento, CA 95834

RE: Late submission of CE course approval-Taste of the Islands 8 Hour CE-April 30, 2017: Five Retinal Diagnoses You Don't Want to Miss; Cataract Surgery in Patients with Corneal Pathology; Buried Treasure: Connecting the Dots to Treating Binocular Misalignment; Patient-reported Outcomes with Lasik: Interpreting the PROWL study; What We Know about Topography Guided Refractive Surgery: Case Studies in Clinical Practice; Do You See What I See?; Crosslinking for Corneal Ectasia: The Evolution of Sclera Lenses; Blink and You'll Miss It: Dry Eye in the Cosmetic Patient; Is the Symfony Toric Lens the Answer for Every Eye Condition; Should My Glaucoma Patient with a Cataract have a MIGS Surgery; Vitreous: Friend or Foe; Is it Cancer? The Optometrist Role in the Diagnosis and Management of Periocular Skin Cancer; Oral Presentations of Systemic Disease: Case Presentations; Glaucoma Management: What Should I do Next?

Dear Practice and Education committee,

I am writing this letter in regards to late submission for the multi-course symposium titled "Taste of the Islands CE" scheduled for presentation on 04/30/2017. We are short of the 45 day submission request, and wanted to include a letter for late submission with our CE approval application.

We continue to work diligently to get all required items to the board needed for CE approval in a timely manner. Due to multiple speakers at the upcoming CE, we had difficulty obtaining all the lectures to meet the submission requirement timeline and would appreciation your consideration of our continuing education approval request.

Please feel free to reach out to us with any other questions. We look forward to continued relations with the State Board of Optometry and the practice and education committee.

Sincerely,

Gina Valdemar
Affiliate Relations and Education Director
Coastal Vision Medical Group
ginavaldemar@coastal-vision.com

Schedule of Events:

7:00 am-7:50 am	Registration & Breakfast	
7:50 am-8:00 am	Dan B. Tran, MD	Welcome & Opening Remarks
8:00 am-8:25 am	Timothy You, MD	5 Retinal Diagnoses You Don't Want to Miss
8:25 am-8:50 am	Jennifer Lee Wu, MD	Cataract Surgery in Patients with Corneal Pathology
8:50 am-9:15 am	Gary Lovcik, OD	Buried Treasure: Connecting the Dots to Treating Binocular Misalignment
9:15 am-9:40 am	Elizabeth Hofmeister, MD, MC, USN	Patient-reported Outcomes with LASIK: Interpreting the PROWL Study
9:40 am-10:05 am	Dan B. Tran, MD	What We Know about Topography Guided Refractive Surgery: Case Studies in Clinical Practice
10:05 am-10:30 am	Madhu Agarwal, MD	Do You See What I See?
10:30 am-11:00 am	Break	
11:00 am-11:50 am	Jennifer Lee Wu, MD	Crosslinking for Corneal Ectasia
11:50 am-12:15 pm	Justin Kwan, OD, FAAO	The Evolution of Sclera Lenses
12:15 pm-12:40 pm	Jeffrey Joseph, MD	Blink and You'll Miss It: Dry Eye in the Cosmetic Patient
12:40 pm-1:50 pm	Lunch/Luau	
1:50 pm-2:15 pm	Dan B. Tran, MD	Is the Symfony Toric Lens the Answer for Every Eye Condition?
2:15 pm-2:40 pm	Betsy Nguyen, MD	Should My Glaucoma Patient with a Cataract have a MIGS Surgery?
2:40 pm-3:05 pm	Raj Rathod, MD, MBA	Vitreous: Friend or Foe
3:10 pm-3:35 pm	Jeffrey Joseph, MD	Is it Cancer? The Optometrist's Role in the Diagnosis and Management of Periocular Skin Cancer
3:35pm-3:40 pm	Lisa D. Garbutt, MD	Ocular Presentations of Systemic Disease: Case Presentations
4:00 pm-4:25 pm	Betsy Nguyen, MD	Glaucoma Management: What Should I Do Next?
4:25 pm-4:30 pm	Closing Remarks/Raffle	

*At time of print, pending CA Board of Optometry approval. Topics and speakers are subject to change.

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Taste of the Islands 8 hour CE
(15 of 15 lectures)

Course Title: Glaucoma Management: What Should I Do Next?

Course Presentation date: 4/30/17

Speaker: Baothu (Betsy) Nguyen, MD

Target Audience: This lecture is intended for optometrist seeking continuing education

Course Description: Lecture to include case presentations of Glaucoma management and what are the possible options are in treating the glaucoma patients. Evaluation of OCT and visual fields and discuss medication management, laser and surgical options.

CE Credit: .50 CE Units

1 **GLAUCOMA MANAGEMENT: WHAT SHOULD I DO NEXT?**

Betsy Bao-Thu Nguyen, M.D.

2 **CASE PRESENTATION #1**

- 67 yo active Caucasian male with POAG, and moderate cataracts, treated with Lumigan & Combigan for 4 years, with recent history of optic disc heme OD, with current IOPs ranging 10-12

  WHAT IS YOUR NEXT TREATMENT STEP?

-

3 **CASE PRESENTATION**

- What is your next treatment step?
  - A. Continue Lumigan, add Simbrinza.
  - B. Continue Lumigan, add Cosopt.
  - C. Continue Lumigan. Suggest SLT 360 OD.
  - D. Continue Lumigan. Suggest Cataract surgery OD.
  - E. Continue Lumigan. Suggest Cataract surgery OD with MIGS (i.e. Istent) .
  - F. Continue Lumigan. Suggest trabeculectomy OD .
  - G. Refer him to a glaucoma specialist

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4 **CASE PRESENTATION**

- 67 yo Caucasian male, retired customs agent with POAG OD>>OS, on Lumigan qhs OU & Comigan BID OU. Initially diagnosed 4 years ago.
- Family history: +sister on 2 glau meds (diagnosed age 40s)
- Systemic meds: Cozaar, Lipitor
-

5 **CASE PRESENTATION**

- Va : 20/50 OU , myope (-5 OD, -4.25 OS)
- IOP (applanation): 15 OD, 13 OS (Tmax= 23)
- Pachy: 580 OD and 575 OS
- Gonio: Grade IV, open to CBB
- Slit Lamp: tr-1+conj inj OU, 3+ NS cataracts.
-

6 **FUNDUS**

7 **HVF 24-2 SITA STANDARD**

8 **Cirrhus OCT**

9 **GLAUCOMA TREATMENT GOAL: Lowering intraocular pressure consistently with flat diurnal curve = LESS progression**

- Our paradigm shift in glaucoma treatment
  1) Target intraocular pressure range: 25-30% goal?? (AAO Preferred Practice Pattern: at least 25% from pretreatment IOP)
  2) Shift to switching medications vs. adding medications

3) Shift to less medications (need compliance !)-- perform SLT, or Cataract surgery, or Cataract surgery with MIGS
4) Other strategies, in addition to IOP lowering, may be required to prevent visual field loss (ie: neuroprotection)
4)

10 **GLAUCOMA MEDS LOWERING IOP: MECHANISM OF MEDICATION**

- 1) Reduce aqueous humor production
  - -Beta-blockers
  - -Carbonic anhydrase inhibitors
  - -Alpha adrenergic agonists

11 **GLAUCOMA MEDS LOWERING IOP: MECHANISM OF MEDICATION**

- 2) Increase fluid outflow (uveoscleral outflow vs. trabecular outflow)
  - Prostaglandins
  - Alpha adrenergic receptor agonists
  - Pilocarpine

  _FUTURE: Rho Kinase inhibitors (ROCK), adenosine agonists (trabodenoson)

12

Prostaglandin analogues are the 1st line /GOLD standard for monotherapy

- Xalatan 0.005% (since 1996) (latanaprost) -BAK
- Lumigan 0.01% (bimatoprost) - BAK
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- Zioptan 0.0015% (tafluprost) –preservative free
- (Rescula –prostamide)– ineffective
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- TOLERABILITY TO ONE PROSTAGLANDIN MAY BE DIFFERENT THAN TO OTHERS!
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- Flat diurnal curve
- 28 – 33% IOP lowering (Want monotherapy)
- AND the GENERICS
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13 **HOW OFTEN IS 1 MEDICATION NOT ENOUGH?**

- OHTS TRIAL: 49 % patients required 2 or more medications to reach target IOP
- CIGTS TRIAL: >75 % patients required 2 or more medications to reach target IOP

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14 **SECOND bottle choices: Combination meds can increase compliance and be more effective**

- Alpha adrenergic agonists = Alphagan-P 0.1% vs generic brimonidine 0.15 & 0.2%
- Topical carbonic anhydrase inhibitors = Trusopt, generic dorzolamide, Azopt
- Combinations (Simbrinza, Combigan, Cosopt or its generic)

- Beta Blockers
-

15 **SELECTIVE LASER TRABECULOPLASTY (SLT)**
is an excellent choice in lowering IOP, if target goal not reached with monotherapy!

- COMPLIANCE IS NOT AN ISSUE!
  - 100% COMPLIANCE with SLT !!!!
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- No peak/trough IOP fluctuations. FLATTENS DIURNAL CURVE.
- SLT decrease IOP an additional 3-4 mm Hg, on patients on topical PGs
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16 **SELECTIVE LASER TRABECULOPLASTY**
Primary therapy vs Adjunctive therapy

- Melamed et al: SLT decrease IOP by 7.7 (+-3.5) mm Hg in untreated OHTS/POAG patients
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- Latina et al:
  - SLT decrease IOP an additional 3-4 mm Hg, on patients on topical PGs
  - SLT decrease IOP an additional 4 mm Hg, on patients on topical Aqueous Suppressants
  - Response rate (>3 mm Hg IOP lowering): 47 % on PGs vs 87 % Aqueous Suppressants

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- 34 yo Persian female accountant with NTG, treated with Lumigan & Alphagan-P for 7 years, with early visual field defects, previous history of optic disc hemes OU, with current IOPs ranging 13-16. She now wants to get pregnant.
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  WHAT IS YOUR NEXT TREATMENT STEP?
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- What is your next treatment step?
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  - D. Stop current medications & change to Combigan. Educate immediate eye closure & punctal occlusion for 5 minutes.
  - E. Laser trabeculoplasty
  - F. Glaucoma surgery (MIGS, trabeculectomy or tube)
  - G. Refer her to a glaucoma specialist

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19 **CASE PRESENTATION**

- 34 yo Persian Female accountant with moderate NTG, on Lumigan qhs OU & Alphagan-P BID OU. Initially diagnosed 7 years ago, when presented with optic disc hemorrhage OD.
- Family history: +mom, bro, aunt - surgery
- Systemic meds: Iron, vitamins
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20 **CASE PRESENTATION**

- Va : 20/20 OU , low myope
- IOP (applanation): 14 OD, 15 OS (Tmax= 20)
- Pachy: 512 OD and 509 OS
- Gonio: Grade IV, open to CBB
- Slit Lamp: unremarkable, except mild SPK OU.
-

21 **FUNDUS**

22 **FUNDUS OS**

23 **HVF 24-2 SITA STANDARD**

24 **Cirrhus OCT**

25 **PREGNANCY AND GLAUCOMA**

- Challenging & controversial treatment! The TWO goals:
  - Safety to fetus/baby
  - Maintaining mother's vision/IOP/glaucoma
  -
- In past, few cases, but now may be increasing with advancing maternal age.

26 **PREGNANCY AND GLAUCOMA**

- WHAT HAPPENS TO IOP DURING PREGNANCY?
  - IOP generally decreases during pregnancy (especially from 1st to 3rd trimester), and usually lasts for several months postpartum.
  - Proposed theory:
    - Increased uveoscleral outflow (hormone-mediated)
    - Reduced episcleral venous pressure
- However, there are some women who have increasing IOP and/or progression of VF loss.
  -
  -

27 **PREGNANCY AND GLAUCOMA**

- Brauner et al (Harvard) : retrospective 15 pregnant glaucoma patients (28 eyes)
  - 57 % of eyes: stable IOP/VF (with less meds)
  - 18 % of eyes: increase IOP but stable VF (require more meds)
  - 18 % of eyes: increase IOP AND progressive VF (require more meds)
  -
  -
  -
  -

28 **PREGNANCY AND GLAUCOMA**

- Active discussion with patient and spouse
  - Risks and benefits of treatment
- Active discussion with patient's obstetrician (High risk OB?)
- Refer to glaucoma specialist

–

29 **FDA and Glaucoma Medications**

- FDA CATEGORY A: Safety established in human studies (no risk to fetus/baby) (NO glaucoma med)
- FDA CATEGORY B: Presumed safety based on animal studies. No human studies. (Brimonidine)
- FDA CATEGORY C: Uncertain safety. No human studies. Animal studies- adverse fetal effects
  (Beta blockers, CAI, Prostaglandins, Miotics)
- FDA CATEGORY D: Unsafe. (benefits may outweigh risks, only if no suitable alternative)
- FDA CATEGORY E: Highly Unsafe

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30 **Glaucoma Medications and Pregnancy**

- Brimonidine (Alphagan-P 0.1%): (FDA category B)
  - May be relatively safe during pregnancy
  - Consider DISCONTINUE in breastfeeding women (may be secreted in breastmilk and cause CNS effects on infants –apnea and hypotension)
- EDUCATE on PROPER administration:
  - Just 1 eyedrop (lowest dose/freq/conc)
  - Immediately close eyes for 5 min
  - Punctal occlusion for 5 min
  - ?Punctal plugs
  -
- –
- –

31 **Glaucoma Medications and Pregnancy**

- Topical beta blockers (Timolol .25%) (FDA category C)
  - Potential side effects: fetal bradycardia, arrhythmia, apnea
  - However, OBs prescribe oral beta blockers for systemic HTN during pregnancy
  - Can be considered if benefits outweigh risks
  - In UK survey: 45% ophthalmologists named Timolol as #1 choice in pregnant women
  - Discontinue 2-3 days before delivery (reduce neonate brady)
  - Parvaz et al: timolol in breast milk unlikely to cause systemic side effects in healthy baby.
    -BUT predisposed neonates can have harmful

cardiorespiratory events

- –
- –

32 **Glaucoma Medications and Pregnancy**

- – Topical CAIs (Trusopt, Azopt) (FDA category C)
  - No reported adverse cases with topical CAIs
  - However, oral CAIs: association with sacrococcygeal teratomas and transient renal tubular acidosis in neonates
- –
- –

33 **Glaucoma Medications and Pregnancy**

- – Prostaglandins (Lumigan, Travatan-Z, Xalatan) (FDA category C)
  - Avoid as oral prostaglandins may induce labor
- –
- –

34 **Glaucoma Medications and Pregnancy**

- – Topical Miotics (Pilocarpine, Carbachol) (FDA category C)
  - Not well tolerated by young phakic patients (induced miosis and ciliary spasm)
  - Possibly better tolerated in pseudophakes
  - Avoid close to delivery, as reports of neonatal hyperthermia/seizures/diaphoresis
- –
- –

35 **PREGNANCY AND GLAUCOMA**

- Laser Trabeculoplasty:
  - SLT, ALT : good alternatives. May take 1 month for effect
  - –
- Glaucoma surgery: (if need immediate lowering IOP, in progressing glaucoma)
  - – MIGS?, Trabeculectomy, Tube
- THERE IS NO "cookie-cutter" treatment! All treatments need to be individualized!
  - –
  - –

36 **CASE PRESENTATION**

- What is your next treatment step?
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•
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37 **CASE PRESENTATION**

- My patient who was trying to get pregnant:
  - WE had a lengthy discussion of risks and benefits of all glaucoma treatments.
- We agreed on the following:
  -D/C Lumigan
  -Continue Alphagan-P 0.1% TID OU, with punctal occlusion and eye closure.
  -Proceed with SLT OU (as she was probably high risk of progression , only on Alphagan-P)
  -If IOP increases or disc heme, or worsening VF, then may need to add other glaucoma meds, or glaucoma surgery.
-

38 **DO NO HARM**

- NO more than 2 bottles.
- Individualize patient therapy.
- WE NEED to remember compliance, cost, and effect on patient's life, when we decide our next step in treating our patients.
- Think: Cataract surgery, MIGS, SLT

39 **TREATING GLAUCOMA IS AN INEXACT SCIENCE. IT IS AN ART. WE NEED TO CHANGE WITH THE PATIENT'S NEEDS.**

- WE NEED to remember compliance, cost, and effect on patient's life, when we decide our next step in treating our patients
- The goal of glaucoma treatment is to preserve vision, *without* adversely affecting the patient's quality of life.

40

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GLAUCOMA MANAGEMENT: WHAT SHOULD I DO NEXT?

Betsy Bao-Thu Nguyen, M.D.

CASE PRESENTATION #1

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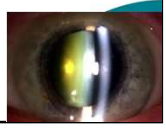

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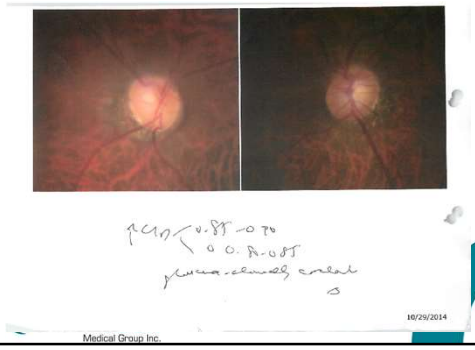
FUNDUS



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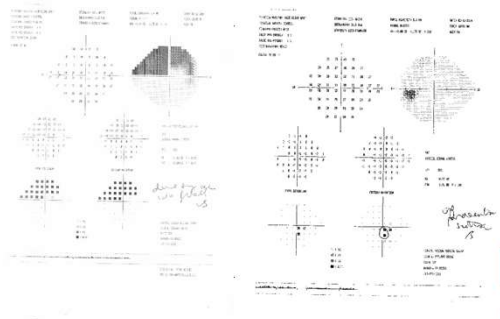
HVF 24-2 SITA STANDARD



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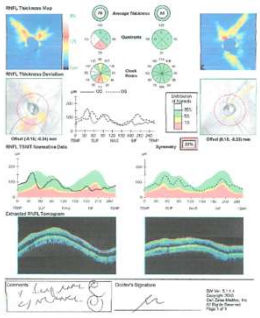
Cirrhus OCT



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GLAUCOMA TREATMENT GOAL: Lowering intraocular pressure consistently with flat diurnal curve = LESS progression

- Our paradigm shift in glaucoma treatment
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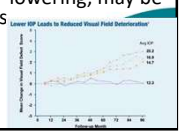

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GLAUCOMA MEDS LOWERING IOP: MECHANISM OF MEDICATION

- 1) Reduce aqueous humor production
  - —-Beta-blockers
  - —-Carbonic anhydrase inhibitors
  - —-Alpha adrenergic agonists

COASTALVISION Medical Group Inc.

GLAUCOMA MEDS LOWERING IOP: MECHANISM OF MEDICATION

- 2) Increase fluid outflow (uveoscleral outflow vs. trabecular outflow)
  - Prostaglandins
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  _FUTURE: Rho Kinase inhibitors (ROCK), adenosine agonists (trabodenoson)

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HOW OFTEN IS 1 MEDICATION NOT ENOUGH?

- OHTS TRIAL: 49 % patients required 2 or more medications to reach target IOP
- CIGTS TRIAL: >75 % patients required 2 or more medications to reach target IOP

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SECOND bottle choices: Combination meds can increase compliance and be more effective

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SELECTIVE LASER TRABECULOPLASTY (SLT) is an excellent choice in lowering IOP, if target goal not reached with monotherapy!

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- SLT decrease IOP an additional 3-4 mm patients on topical PGs

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SELECTIVE LASER TRABECULOPLASTY Primary therapy vs Adjunctive therapy

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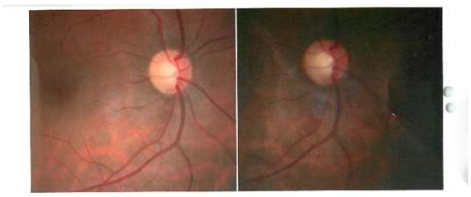
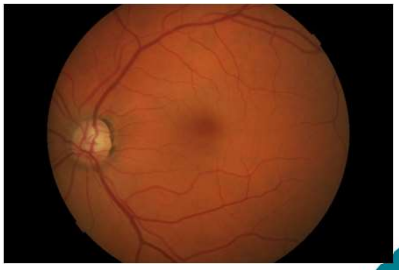
- Pachy: 512 OD and 509 OS
- Gonio: Grade IV, open to CBB
- Slit Lamp: unremarkable, except mild SPK OU.

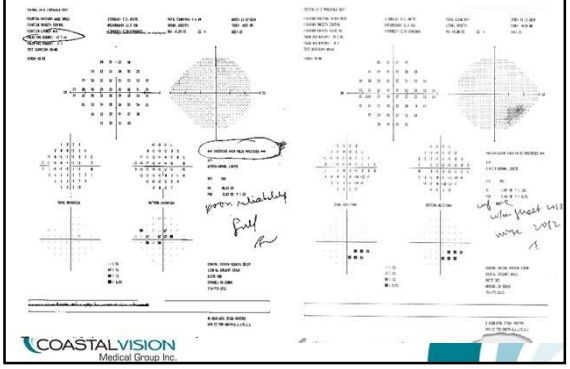
FUNDUS



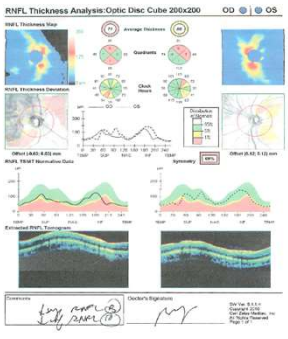
FUNDUS OS



HVF 24-2 SITA STANDARD



Cirrhus OCT



PREGNANCY AND GLAUCOMA

- Challenging & controversial treatment! The TWO goals:
  - Safety to fetus/baby
  - Maintaining mother's vision/IOP/glaucoma
- In past, few cases, but now may be increasing with advancing maternal age.

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PREGNANCY AND GLAUCOMA

- WHAT HAPPENS TO IOP DURING PREGNANCY?
  - IOP generally decreases during pregnancy (especially from 1st to 3rd trimester), and usually lasts for several months postpartum.
  - Proposed theory:
    - Increased uveoscleral outflow (hormone-mediated)
    - Reduced episcleral venous pressure
- However, there are some women who have increasing IOP and/or progression of VF loss.

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PREGNANCY AND GLAUCOMA

- Brauner et al (Harvard) : retrospective 15 pregnant glaucoma patients (28 eyes)
  - 57 % of eyes: stable IOP/VF (with less meds)
  - 18 % of eyes: increase IOP but stable VF (require more meds)
  - 18 % of eyes: increase IOP AND progressive VF (require more meds)

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PREGNANCY AND GLAUCOMA

- Active discussion with patient and spouse
  - Risks and benefits of treatment
- Active discussion with patient's obstetrician (High risk OB?)
- Refer to glaucoma specialist

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FDA and Glaucoma Medications

- FDA CATEGORY A: Safety established in human studies (no risk to fetus/baby) (NO glaucoma med)
- FDA CATEGORY B: Presumed safety based on animal studies. No human studies. (Brimonidine)
- FDA CATEGORY C: Uncertain safety. No human studies. Animal studies- adverse fetal effects (Beta blockers, CAI, Prostaglandins, Miotics)
- FDA CATEGORY D: Unsafe. (benefits may outweigh risks, only if no suitable alternative)
- FDA CATEGORY E: Highly Unsafe

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Glaucoma Medications and Pregnancy

- Brimonidine (Alphagan-P 0.1%): (FDA category B)
  - May be relatively safe during pregnancy
  - Consider DISCONTINUE in breastfeeding women (may be secreted in breastmilk and cause CNS effects on infants – apnea and hypotension)
- EDUCATE on PROPER administration:
  - Just 1 eyedrop (lowest dose/freq/conc)
  - Immediately close eyes for 5 min
  - Punctal occlusion for 5 min
  - ?Punctal plugs

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Glaucoma Medications Pregnancy

- Topical beta blockers (Timolol .25%) (FDA category C)
  - Potential side effects: fetal bradycardia, arrhythmia, apnea
  - However, OBs prescribe oral beta blockers for systemic HTN during pregnancy
  - Can be considered if benefits outweigh risks
  - In UK survey: 45% ophthalmologists named Timolol as #1 choice in pregnant women
  - Discontinue 2-3 days before delivery (reduce neonate brady)
  - Parvaz et al: timolol in breast milk unlikely to cause systemic side effects in healthy baby.
    - -BUT predisposed neonates can have harmful cardiorespiratory events

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Glaucoma Medications and Pregnancy

- Topical CAIs (Trusopt, Azopt) (FDA category C)
  - No reported adverse cases with topical CAIs
  - However, oral CAIs: association with sacrococcygeal teratomas and transient renal tubular acidosis in neonates

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Glaucoma Medications and Pregnancy

- Prostaglandins (Lumigan, Travatan-Z, Xalatan) (FDA category C)
  - Avoid as oral prostaglandins may induce labor

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Glaucoma Medications and Pregnancy

- Topical Miotics (Pilocarpine, Carbachol) (FDA category C)
  - Not well tolerated by young phakic patients (induced miosis and ciliary spasm)
  - Possibly better tolerated in pseudophakes
  - Avoid close to delivery, as reports of neonatal hyperthermia/seizures/diaphoresis

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PREGNANCY AND GLAUCOMA

- Laser Trabeculoplasty:
  - SLT, ALT : good alternatives. May take 1 month for effect

- Glaucoma surgery: (if need immediate lowering IOP, in progressing glaucoma)
  - MIGS?, Trabeculectomy, Tube
- THERE IS NO "cookie-cutter" treatment! treatments need to be individualized!

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CASE PRESENTATION

- What is your next treatment step?
  - A. Continue current medications. NO changes.
  - B. Stop all topical medications.
  - C. Stop Lumigan & continue Alphagan-P. Educate immediate eye closure & punctal occlusion for 5 minutes.
  - D. Stop current medications & change to Combigan. Educate immediate eye closure & punctal occlusion for 5 minutes.
  - E. Laser trabeculoplasty
  - F. Glaucoma surgery (MIGS, trabeculectomy or tube)
  - G. Refer her to a glaucoma specialist

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CASE PRESENTATION

- My patient who was trying to get pregnant:
  - WE had a lengthy discussion of risks and benefits of all glaucoma treatments.
- We agreed on the following:

-D/C Lumigan

-Continue Alphagan-P 0.1% TID OU, with punctal occlusion and eye closure.

-Proceed with SLT OU (as she was probably high risk of progression , only on Alphagan-P)

-If IOP increases or disc heme, or worsening VF, then may need to add other glaucoma meds, or glaucoma surgery.

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DO NO HARM

- NO more than 2 bottles.
- Individualize patient therapy.
- WE NEED to remember compliance, cost, and effect on patient's life, when we decide our next step in treating our patients.
- Think: Cataract surgery, MIGS, SLT

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TREATING GLAUCOMA IS AN INEXACT SCIENCE. IT IS AN ART. WE NEED TO CHANGE WITH THE PATIENT'S NEEDS.

- WE NEED to remember compliance, cost, and effect on patient's life, when we decide our next step in treating our patients
- The goal of glaucoma treatment is to preserve vision, *without* adversely affecting the patient's quality of life.

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THANK YOU!!

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CURRICULUM VITAE

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CURRENT PRACTICE

2000 - Present: Private Practice, Ophthalmology
2000 - Present: Consultant/Research for USC, Dept of Ophthalmology

LICENSES & CERTIFICATIONS

11/19/2000 Board Certified, Diplomate, Ophthalmology (Effective through 12/2020)
06/06/1997 Medical Board of California licensed (Exp date = 10/31/2016)
1997 DEA licensed (Exp date = 10/31/2017)
2004 - 2011 LOCS III certified

EDUCATION & POSTGRADUATE TRAINING

1999 - 2000 : Clinical Fellowship, Glaucoma & Clinical Instructor
Preceptors: Robert L. Stamper, MD and Marc F. Lieberman, MD
University of California, San Francisco (UCSF) & California Pacific Medical Center

1996 - 1999 : Residency, Ophthalmology (worked with Joseph Caprioli, MD, Anne Coleman , MD & Roy Wilson, MD)
Jules Stein Eye Institute at UCLA

1995 - 1996 : Internship, Preliminary Medicine
UCLA – San Fernando Valley

1991 - 1995 : M.D. degree, ***Alpha Omega Alpha*** Honor Society (top 10% of class)
UCLA David Geffen School of Medicine

1989 - 1991 : B.S. Biological Sciences, ***Magna cum laude***
University of California , Irvine

1987 - 1989 : Dean's Honors List & UC Regents Scholar
University of California , San Diego

HONORS & AWARDS

1999 : ARVO Travel Fellowship, National Eye Institute
1995 : Alpha Omega Alpha Honor Society, UCLA School of Medicine
1991 : Edward Mittleman Scholarship, for academic excellence in Biological Sciences
1991: Magna Cum Laude, University of California, Irvine
1989 : Phi Beta Kappa Honor Society, University of California, Irvine
1989 : UC Regents Scholarship
1987 – 1991 : Dean’s Honors List
1987 : High School Class Valedictorian, Irvine High School

PROFESSIONAL MEMBERSHIPS

American Academy of Ophthalmology, American Society of Cataract and Refractive Surgery,

California Medical Association, California Academy of Eye Physicians & Surgeons, Orange County Ophthalmology Society

OTHER ACTIVITIES

2000-2006 Team Eye Doctor for the National Champions Anaheim Angels
2000-2006 Team Eye Doctor for the Division Champions Anaheim Mighty Ducks
2002-2012 Consultant for Allergan

RESEARCH EXPERIENCE, PRESENTATIONS & PUBLICATIONS

2013-2015 Researcher for USC – Collaboration with Chinese American Eye Study (CHES). Collaborate with Rohit Varma, MD.

2012 Baseline risk factors that predict the development of open-angle glaucoma in a population: the Los Angeles Latino Eye Study. Ophthalmology. 2012 Nov;119(11):2245-53.

2012 Four-year incidence of open-angle glaucoma and ocular hypertension: the Los Angeles Latino Eye Study. Am J Ophthalmol. 2012 Aug;154(2):315-325.

2011 "Population and High Risk Group Screening for Glaucoma: The Los Angeles Latino Eye Study", Invest Ophthalmol Vis Sci. 2011 August; 52(9): 6257–6264.

2000 - 2012 Researcher for USC – Collaboration with Los Angeles Latino Eye Study (LALES). Collaboarate with Rohit Varma, MD and Brian Francis, MD.

2005 Screening for Glaucomatous Optic Nerve Damage: The Los Angeles Latino Eye Study. ARVO Abstract. *Invest Ophthalmol Vis Sci* 2005;46: E-Abstract 2499.

2004 "Prevalence of open-angle glaucoma and ocular hypertension in Latinos: the Los Angeles Latino Eye Study", *Ophthalmology*, 2004 Aug; 111(8):1439-48.

2003 Prevalence of Open-Angle Glaucoma and Ocular Hypertension in Latinos. The Los Angeles Latino Eye Study (LALES) . ARVO Abstract. *Invest Ophthalmol Vis Sci* 2003;44: E-Abstract 317

2000 - 2012 Researcher for USC – Collaboration with **Los Angeles Latino Eye Study (LALES)** . Collaborate with Rohit Varma, MD.

2007 - 2009 : Schering study (LOCS III Certified)

2004 - 2006 : TAKEDA study (LOCS III Certified)

2003 Advanced Glaucoma Training DVD, for Allergan

1999 - 2000 : Evaluation of computerized optic discs to determine stability vs. progression of glaucoma, under Robert L. Stamper, MD, Chief of Glaucoma, UCSF.

1998 - 1999 : Retrospective longitudinal study of progression of glaucoma, using multivariate analysis of serial visual fields, stereoscopic disc photographs, and confocal laser imaging, under Joseph Caprioli, MD, Chief of Glaucoma, UCLA Jules Stein Eye Institute.
ARVO paper presentation, "Identification of Glaucoma Progression Through Combined Use of Quantitative Structural and Functional Measures", May 1999.

1995 - 1997 : Development of quantitative methods for evaluation of socket motility of orbital implants, under Robert A. Goldberg, MD, Chief of Oculoplastics,

UCLA Jules Stein Eye Institute.
Poster presentation, Jules Stein Eye Institute Research and Alumni Day,1998.

1992 - 1993 : Investigation of traumatic optic neuropathy in a rat model, under Robert A. Goldberg, MD & Kenneth Steinsapir, MD, UCLA School of Medicine. Poster presentation, "Dynamic Changes in Cerebral Glucose Metabolism Following Optic Nerve Trauma" , at Neuroscience, 1992.

1989 - 1991 : Investigation of the effects of glycation on the function of the sodium-potassium pump, under Margaret H. Garner, PhD ,UCI School of Medicine.
Publication, "Na,K-ATPase of Cultured Bovine Lens Epithelial Cells: H2O2 Effects", *Experimental Eye Research*, 1992 Mar, 54 (3): 321-7.
Poster presentation, "Glucose Control, by Nonenzymatic Glycation of Na, K-ATPase Function in the Nondiabetic", FASEB 1991.

References available upon request.