On behalf of Vision Expo, we sincerely thank you for being with us this year.

Vision Expo Has Gone Green!

We have eliminated all paper session evaluation forms. Please be sure to complete your electronic session evaluations online when you login to request your CE Letter for each course you attended! Your feedback is important to us as our Conference Advisory Board considers content and speakers for future meetings to provide you with the best education possible.

VISION EXPO

VISION EXPO

1

Justin Schweitzer, OD, FAAO has received honorarium from:

- Aerie – C/L
- Alcon – C/L
- Allergan – C/L
- Bausch + Lomb – C/L
- Ocular Therapeutix - C
- EyePoint - C
- Sight Sciences – C
- Dompe - C
- Sun - C
- Equinox - I
- Reichert - C
- J&J – C/L
- Glaukos - L
- Horizon – C
- Quidel – C
- Zeiss – C
- MediPrint

- Chief Medical Editor: Modern Optometry

2

Surgical Advances in Glaucoma Therapy

Justin Schweitzer, OD, FAAO
Vance Thompson Vision, Sioux Falls, South Dakota
Optometric Externship Director

3

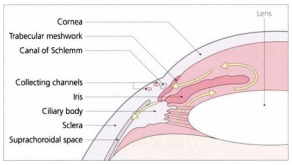
Minimally or Micro Invasive Glaucoma Surgery (MIGS)

Procedures that have an ab-interno approach, are minimally traumatic, with at least modest efficacy, extremely high safety and rapid recovery .

Saheb H, Ahmed, IIK. Micro-invasive glaucoma surgery: current perspectives and future directions. Curr Opin Ophthalmol. 2012;23(2): 96-104.

4

Schlemm's Canal	Type	Suprachoroidal	Type	Cilioablative	Type
Stents		Stents		External	
	iStent		***Cypass**		**Micropulse**
	iStent Inject		***iStent Supra**	Internal	
	Hydrus	**Subconjunctival**	**Type**		**ECP**
Dilation		Stents			
	OMNI		**Xen**		
	ABiC		***InnFocus Micro**		
Cutting					
	Kahook Dual Blade				
	OMNI/GATT				
Ablation					
	Trabectome				



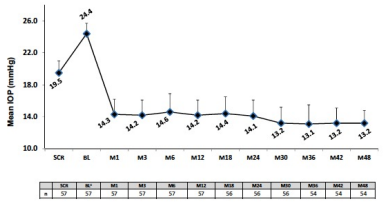
6

Trabecular Microbypass Stent (iStent Inject W)

8

Four-Year Outcomes of Two Second-Generation Trabecular Micro-Bypass Stents in Patients with Open-Angle Glaucoma on One Medication

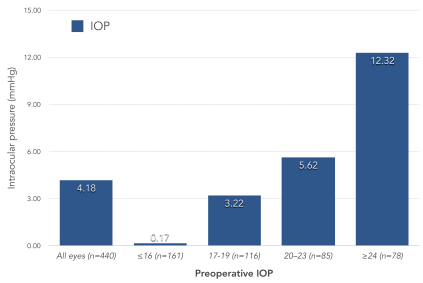
Lindstrom, Richard; Sarkisian, Steven R; Lewis, Richard; Hovanesian, John; Voskanyan, Lilit.
Clinical Ophthalmology; **Auckland** Vol. 14, (2020): 71-80. DOI:10.2147/OPTH.S235293



Visual field[b]			
Mean deviation (dB)	Mean (SD)	−4.9 (5.3)	−5.0 (6.2)
Pattern standard deviation (dB)	Mean (SD)	3.3 (2.4)	3.1 (2.6)

9

Postoperative IOP reduction comparison



Ferguson, TJ, Berdahl, JP, Schweitzer JA. Clinical evaluation of a trabecular microbypass stent with phacoemulsification in patients with open-angle glaucoma and cataract. Clin Ophthalmol. 2016; 10: 1767-1773

10

Schlemm Canal Microstent (Hydrus)

11

HORIZON Trial – 4 Year Update

	Stent + Cataract (n=369)	Cataract Only (n=187)
Baseline IOP (mm Hg) after washout	25.5 (+/- 3.0)	25.4 (+/-2.9)
48 months medication free	65%	41%
48 months mean IOP (mm Hg) unmedicated	16.7 (+/-3.1)	17.2 (+/-3.2)
48 months mean IOP (mm Hg)	16.9 (+/-3.3)	17.3 (+/-3.4)
1 preoperative med 2 to 4 preoperative med	52.6% 47.4%	54% 46%

5 Year Update – 66% patient's remain medication-free and 61% reduction in risk to need further surgery

12

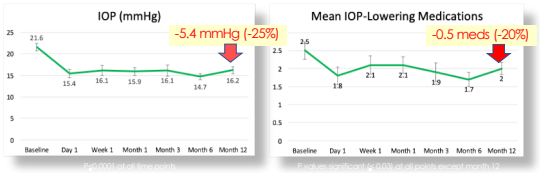
AQUEOUS ANGIOGRAPHY VIDEO

13

Excisional Goniotomy (Kahook Dual Blade)

14

12-Month Outcomes of Stand-Alone Excisional Goniotomy in Mild to Severe Open-Angle Glaucoma



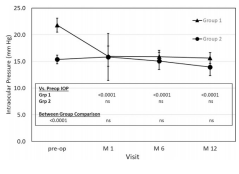
86% of eyes (majority moderate to severe) avoided the need for more invasive glaucoma surgery during the post-operative period.

15

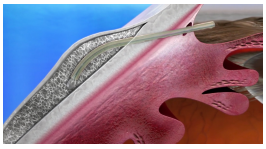
Ab-interno Trabeculotomy +Viscocanalostomy (OMNI)

16

Canaloplasty and Trabeculotomy with the OMNI System in Pseudophakic Patients with Open-Angle Glaucoma: The ROMEO Study



17



Subconjunctival Stent
(Xen)

	Baseline	12 month
Medicated IOP	25.1 (3.7)	15.9 (5.2)
Glaucoma Meds	3.5 (1.0)	1.7 (1.5)

Hypotony 16 (24.6%)
Bleb Needling 21 (32.3%)

18

A Case for Tubes and Trabs?

Powerful and effective at lowering IOP

Covered by the vast majority of insurance companies

20

Treatment Outcomes in the PTVT Study (3 Years)

Tube Group

IOP 13.9 mm Hg

2.1 medications

32.1% failure rate

Trab Group

IOP 12.1 mm Hg

1.2 medications

29.1% failure rate

No significant difference in the rate of surgical success was observed between the two surgical procedures at 3 years

21

ExPress Shunt

"Enhance" the trab

22

Post-operative Considerations with MIGS

1. Stopping GLC Meds
2. IOP Spikes
3. Hyphema
4. Hypotony
5. Establish New Baselines

23

Selective Laser Trabeculoplasty

Selectively targets and laser burns pigmented TM cells

28

SLT Studies

Selective Laser Trabeculoplasty Versus Medical Therapy as Initial Treatment of Glaucoma: A Prospective, Randomized Trial

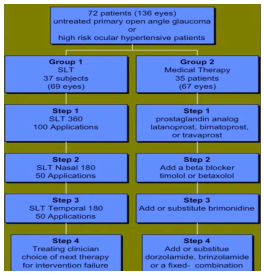
L. Jay Katz, MD, William C. Steinmann, MD,† Azad Kabir, MD,‡ Jeanne Molineaux, COA,* Sheryl S. Wizov, COA,* and George Marcellino, PhD§ the SLT/Med Study Group*

J Glaucoma • Volume 21, Number 7, September 2012

- SLT Med Study (2012)
  - Dr. Katz @ Wills Eye in Philadelphia
    - J Glaucoma 2012;21:460-468
  - SLT (100 applications over 360 degrees of TM) vs. prostaglandin analog
  - Primary outcome -> IOP
  - Secondary outcome -> # of treatment steps

29

SLT Med Study Treatment Arms



30

SLT vs. Prostaglandins

- SLT Med Study (2012)

  Results:

  1. IOP reduction:
     - SLT – 25.7% IOP reduction
       - IOP reduced from 24.5 to 18.2 (6.3 mmHg reduction)
     - Prostaglandin – 28.3% IOP reduction
       - IOP reduced from 24.7 to 17.7 (7.0 mmHg reduction)
  2. # of treatment steps:
     - SLT group - 11% of eyes required additional SLT
     - Prostaglandin group -> 27% of eyes required additional medication

31

Lancet. 2019 Apr 13;393(10180):1505-1516. doi: 10.1016/S0140-6736(18)32213-X. Epub 2019 Mar 9.

Selective laser trabeculoplasty versus eye drops for first-line treatment of ocular hypertension and glaucoma (LiGHT): a multicentre randomised controlled trial.

Gazzard G[1], Konstantakopoulou E[2], Garway-Heath D[2], Garg A[2], Vickerstaff V[3], Hunter R[4], Ambler G[5], Bunce C[6], Wormald R[7], Nathwani N[8], Barton K[2], Rubin G[9], Buszewicz M[4]; LiGHT Trial Study Group.

Primary Outcome - Quality of Life at 3 years
Secondary Outome – Cost, cost-effectiveness, clinical effectiveness, and safety

Conclusions:

No significant difference in QOL
97% probability of SLT as 1st treatment being more cost-effective
SLT at target IOP 93% of visits vs 91.3% at target for meds
78.2% Drop Free @ 3 years

32

Lancet. 2019 Apr 13;393(10180):1505-1516. doi: 10.1016/S0140-6736(18)32213-X. Epub 2019 Mar 9.

Selective laser trabeculoplasty versus eye drops for first-line treatment of ocular hypertension and glaucoma (LiGHT): a multicentre randomised controlled trial.

Gazzard G[1], Konstantakopoulou E[2], Garway-Heath D[2], Garg A[2], Vickerstaff V[3], Hunter R[4], Ambler G[5], Bunce C[6], Wormald R[7], Nathwani N[8], Barton K[2], Rubin G[9], Buszewicz M[4]; LiGHT Trial Study Group.

- Rates of disease deterioration
  - SLT - 3.8% (23 eyes)
  - Meds - 5.8% (36 eyes)
- Glaucoma surgeries
  - SLT – 0
  - Meds – 11

33

Steroid After Laser Trabeculoplasty (SALT)

Steroid	NSAID
• IOP Pre-Op: 23.3 mm Hg	• IOP Pre-Op: 23.3 mm Hg
• 12 week IOP check	• 12 week IOP check
• IOP lowering of **5.2±2.7** mmHg	• IOP lowering of **6.2±3.1** mmHg

Saline Tears IOP lowering of **3±4.3** mmHg

Groth et al. Steroids After Laser Trabeculoplasty (SALT) Trial: Impact of Short-term Anti-Inflammatory Treatment on SLT Efficacy. Ophthalmology June 5 2019

34

Bimatoprost SR (Allergan)
(10-microgram bimatoprost sustained-release implant)

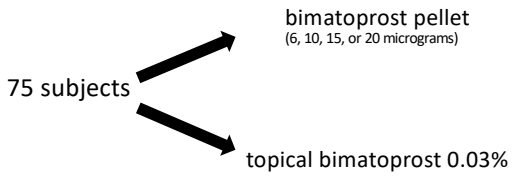
- Biodegradable bimatoprost sustained-release implant
- FDA-approved and indicated to reduce IOP in patients with open angle glaucoma or OHT
- Single intracameral administration
- Phase I/II/III Studies

35

Bimatoprost SR (Allergan)
(10-microgram bimatoprost sustained-release implant)

36

24 Month Phase I/II Clinical Trial



Craven ER, Walters T, Christie WC, Day DG, et al. 24-Month Phase I/II Clinical Trial of Bimatoprost Sustained-Release Implant (Bimatoprost SR) in Glaucoma Patients. Drugs. 2020 Feb;80(2): 167-179.

38

24 Month Phase I/II Clinical Trial

bimatoprost pellet
(6, 10, 15, or 20 micrograms)

24 months – IOP reduction
7.5, 7.3, 7.3, 8.9 mm Hg

topical bimatoprost 0.03%

24 months – IOP reduction
of 8.2 mm Hg

No Rescue or Retreatment
68% - 6 mos.
40% - 12 mos.
28% - 24 mos.

Craven ER, Walters T, Christie WC, Day DG, et al. 24-Month Phase I/II Clinical Trial of Bimatoprost Sustained-Release Implant (Bimatoprost SR) in Glaucoma Patients. Drugs. 2020 Feb;80(2): 167-179.

39

2 x 20 Month Phase III (ARTEMIS)

- The device as implanted intracamerally at 4-month intervals for 1 year (Office-based procedure)
- 1,112 subjects
- Durysta vs 2 x topical timolol
- 30% IOP reduction from baseline over 12-week primary efficacy period

Conclusion: Noninferior to timolol administered as an eye drop twice a day.

40

Phase III (ARTEMIS 3)

- The device as implanted intracamerally at 4-month intervals for 1 year (Office-based procedure)
- 742 subjects
- Durysta vs 2 x topical timolol
- Baseline IOP 24 mm Hg
- At 1 Year IOP maintained at 16-17 mm Hg

41

Phase III (ARTEMIS)

27% -conjunctival hyperemia
10% - post administration 2 days

5.4% - endothelial cell loss over 20 months

5% - iritis

42

In Conclusion...

- Glaucoma is both a **medical** and **surgical** disease
  - Key to success is collaboration
- Trends in treatment aim to **balance** effectiveness and safety

43

Thank You!

justin.schweitzer@vancethompsonvision.com

44