



Endo Optiks®

ECP Study Summary

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Over 20 years of clinical research summarized below to illustrate:

- ECP is effective for a wide range of types and severities of glaucoma.
- ECP is a safe procedure. No cases of hypotony or phthisis reported in combined Phaco/ECP cases. Authors uniformly note that the complications for high risk refractory glaucoma patients were equal to or less severe than tubes or trabs.
- ECP is titratable so treating more ciliary processes has a greater impact without effecting safety.

Combined Phaco /ECP

Year	Publica- tion/ Meeting	Title (comments)	Author	# Eyes	Mean F/U mths	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre- Op Meds	Post- Op Meds
2018	J. Clin Exp. Ophth	Clinical Results of ECP with Cataract and Open-Angle Glaucoma at Oftalmosalud Eye Institute, Lima-Peru 360°. Significant decrease in IOP without variation of visual acuity and low rate of complications.	Juan Carlos Izquierdo, Ana Luisa Gonzalez Mendez, et.al.	41	24	22	12.9	2.08	1.60
2017	EJO	Phaco plus ECP vs phaco alone in primary open-angle glaucoma 270-360°. Phaco-ECP resulted in greater reduction in IOP and meds than phaco alone.	Bartolome, F.P., Rodrigues, I.A., Goyal, S. et.al.	69	12	21.5	16.8	2.62	1.89
			<i>Control Group</i>	30		18.5	16.6	1.2	0.96
2017	AGS	Long-term Follow-up of Combined Phacoemulsification and ECP in the Treatment of Mild to Moderate Glaucoma. 180-360°.	Sara Khandan, Les Siegel, et. al.	261	72	17.2	13.9	1.3	.25
2017	AGS	Results of Endocyclophotocoagulation in a Predominantly Haitian and Hispanic Population 120 – 180°. Complications: No Hypotony, post-op inflammation or LLP.	Corey Waldman, M.D.	20	6	18	15.8	2.4	1.25
2016	Int’l Jnl Ophth.	Efficacy of combined cataract extraction and endoscopic cyclophotocoagulation for the reduction of intraocular pressure and medication burden. 200-270°.	Sammie J. Roberts, Matthew Mulvahill, et. al.	91	12	16.65	13.38	1.88	1.48
2014	JCRS	ECP combined with phacoemulsification versus phacoemulsification alone in medically controlled glaucoma 270-360°.	Brian A. Francis, et.al.	80	36	18.1	15.4	1.5	.4
			<i>Control Group</i>				18.1	17.2	2.4
2013	Clinical & Exp. Ophth.	Combining phacoemulsification with endoscopic cyclophotocoagulation to manage cataract and glaucoma 270-360°. 45 eyes POAG, 18 Refractory gl.	Philip Bloom, et. al.	63	12	21.1	16.1	2.7	1.3
2012	BMJ	Phaco-ECP: combined endoscopic cyclophotocoagulation and cataract surgery to augment medical control of glaucoma <small>*Meds were intentionally maintained. Conclusion: This study confirms safety as well as IOP impact of ECP independent of meds change.</small>	Dan Lindfield, et. al.	58	24	21.5	14.4	2	2.1*



Combined Phaco /ECP (cont.)

Year	Publication/ Meeting	Title (Comments)	Author	# Eyes	Mean F/U mths	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2007	Journal of Glaucoma	One-Site Versus Two-Site ECP: 1 site-240° 2 site 360°	Malik Kahook, M.D, et. al.	15	6	23.6	16	2.5	1.9
				25	6	24.5	13	2.6	.5
2006	ASCRS	ECP with Phaco in Medically Controlled Glaucoma: Prospective Randomized Controlled Long-Term Study	Mike McFarland, M.D. et. al.	127	37	22.8	16.1	1.6	.8
2000	AGS J. Glaucoma	ECP and Phaco in the treatment of Medically Controlled POAG 180-300° treatment. Study supports 360° treatment. No significant Complications.	Stanley J. Berke, M.D.	26	3	20.4	19.1	1.7	.7
1999	JCRS	Combined cataract and glaucoma surgery: Trabeculectomy versus endoscopic laser cycloablation	Johnny Gayton, M.D.	29	24	24.8	16	2.5	1.1
1997	AJO	ECP of the Ciliary Body for the treatment of Refractory Glaucomas Subgroup of Phaco/ECP	Jorge Alvarado, M.D.	12	13	27	14	2.8	2.2
1995	Ophthalmic Surgery	Combined Phacoemulsification, ECP and Intraocular Lens Insertion in Glaucoma Management	Martin Uram, M.D.	10	20	31.4	13.5	3.2	.8

ECP with other MIGS

Year	Publication/ Meeting	Title (Comments)	Author	# Eyes	Mean F/U (mths)	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2018	EGS	Phacoemulsification plus abi trabeculectomy - Kahook Dual Blade and Endocyclophotocoagulation in patients with primary open angle glaucoma and cataract. 360°.	Maria Corina Ponte, Juan Carlos Izquierdo, et.al.	27	6	17	11.9	1 (56%) 2-3 (44%)	0 (70%) 1 (19%) 2 (11%)
2018	UKEGS	Short and median-term outcomes of Phacoemulsification combined with two istent inject trabecular microbypass stents and endocyclophotocoagulation 300°	Andre Barata, M.D., Minas Georgopoulos, M.D., Gokulan Ratnarajan FRCOphth MD	55	6	19.7	13.4	2.2	1.3
2017	JCRS	Microbypass stent implantation with cataract extraction and endocyclophotocoagulation versus microbypass stent with cataract extraction for glaucoma Safety: No significant post-op complications noted in either group.	Tanner J. Ferguson, John Berdahl, et. al.	51	12	21.49	14	1.78	1.10
				<i>Control Group</i>	50	12	20.66	16	1.68
2017	AGS	Phacoemulsification Combined With Trabecular Microbypass Stent (iStent) and Endolaser Cyclophotocoagulation (ECP). Objective to reduce meds. Maintained a high safety profile.	Ronald Corona, M.D.	46	12	18	16.5	2.3	1.0

Refractory Glaucoma

Year	Publication/ Meeting	Title (Comments)	Author	# Eyes	Mean F/U (mths)	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2017	AGS	Clinical Results of ECP in Refractory Glaucoma	Maria Corina Ponte-Davila, et. al.	50	24	22.3	13	2	2.2
2015	Journal of Glaucoma	ECP and Pars Plana Ablation (ECP-Plus) to Treat Refractory Glaucoma	Brian Francis, M.D., et.al	53	12	27.9	10.7	3.4	.7
2010	Journal of Glaucoma	ECP in the management of Uncontrolled Glaucoma with prior aqueous tube shunt	Brian Francis, et. al.	25	18	24	15.3	3.2	1.5
2009	AGS	Use of ECP in Patients with Uncontrolled Refractory Glaucoma Low complications for poor prognosis patients.	George L. Spaeth, M.D.	17	2-17	25.12	10.53	3.76	.94
2007	ASCRS	A Long Term Retrospective Study of ECP in Refractory Glaucoma	Francisco Lima, M.D., et. al.	539	60	37.9	15.7	3.4	1.5
2004	Journal of Glaucoma	A prospective, comparative study between ECP and the Ahmed drainage implant in refractory glaucoma Significantly more worsening of VA with Ahmed valve compared with ECP)	Francisco Lima, M.D., et. al.	68	24	41.3	14	3.0	2.0
						<i>Control Group</i>	41.6	14.7	3.5
1997	AJO	Endoscopic Cyclophotocoagulation of the Ciliary Body for Treatment of Refractory Glaucomas 180 - 360° treatment. No hypotony or phthisis.	Janet Chen, M.D., Jorge Alvarado, M.D., et. al.	68	12.9	27.7	17	3	2

Neovascular Glaucoma

Year	Publication/ Meeting	Title (Comments)	Author	# Eyes	Mean F/U (mths)	Pre-Op IOP mmHg	Post-Op IOP mmHg	Pre-Op Meds	Post-Op Meds
2014	Retina	Case-matched comparison of vitrectomy, peripheral retinal endolaser and ECP vs standard care in neovascular glaucoma. 360°. Complications not different to control group.	Jorge Arroyo, M.D.	27	12	40.7 (±12.40)	12.3 (±4.84)	3.1	.5
			<i>Control Group</i>	27	12	34.7 (±12.38)	23 (±12.34)	1.30	1.89
1992	Ophthalmology	Ophthalmic Laser Microendoscope Ciliary Process Ablation in the Management of Neovascular Glaucoma	Martin Uram, M.D., MPH	10	9	43.6	15.3	Meds Reduced	



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