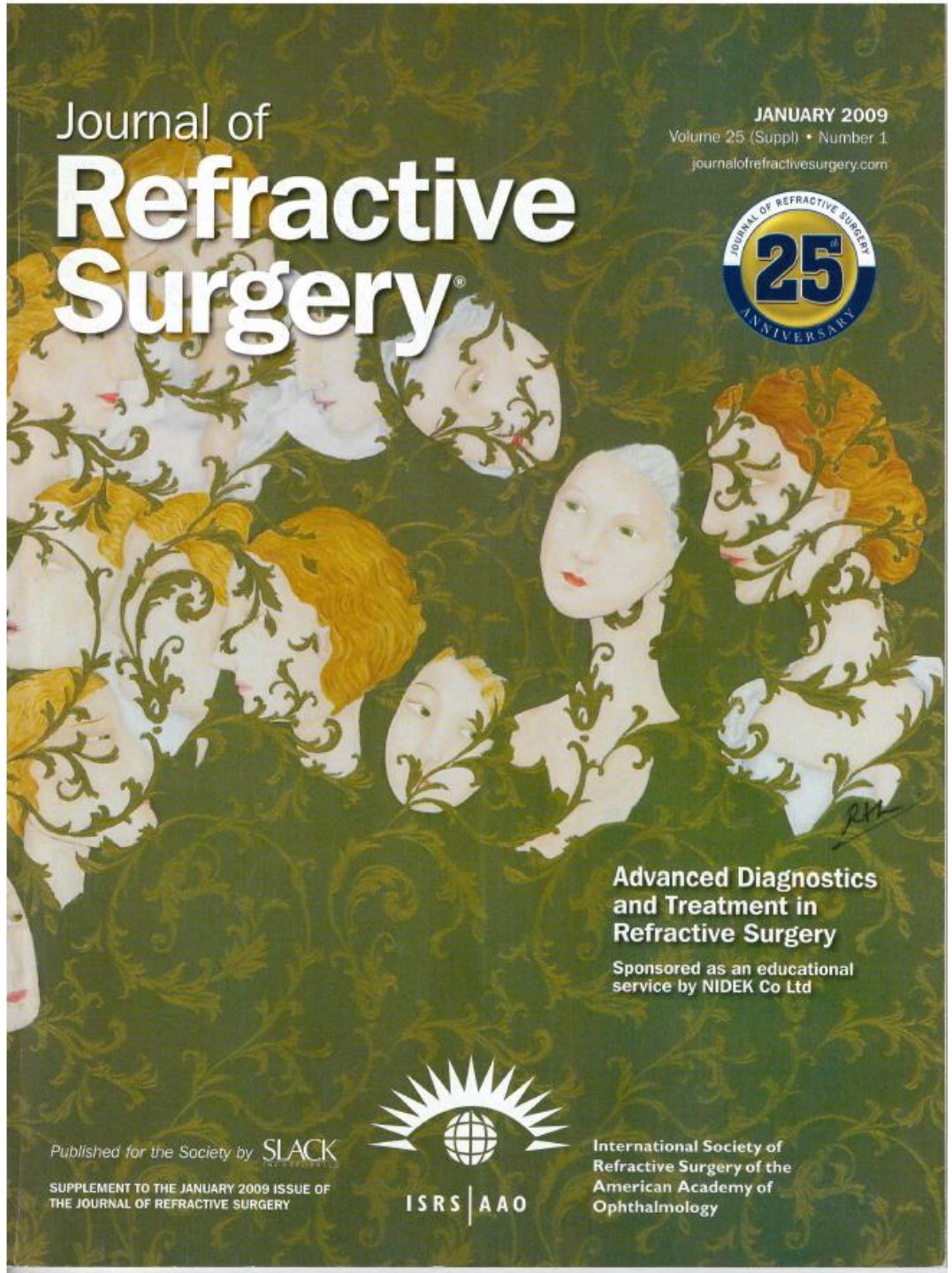
Hi, I’m Luca Gualdi and I am an italian opthalmologist practicing in Rome as anterior segment surgeon specialized in cataract and refractive surgery
My first pubblication for Journal of Refractive surgery was in 2007, but I joined as a regular member the ISRS 10 years ago.
Since then I partecipated every year and I was invited for my research about the ciliary muscle electrostimulation.
Then I wrote another paper on JRS in 2017 which lead me to won the prestigious waring medal in 2018.
Since then I partecipated always in meeting, talks and as a panelist to discuss expecially abou the surgcal corection of presbyopia which is nowadays still the holy grail of every refractive surgeon.
Im my mind the ISRS is the best society for what are my interests about Refractive Surgery and I hope the tradition will continue over the years expecially now being stand alone.



The Use of NIDEK OPD Scan II Wavefront Aberrometry in Toric Intraocular Lens Implantation

Luca Gualdi, MD; Veronica Cappello, MD; Cristina Giordano, OD

ABSTRACT

PURPOSE: To present case examples outlining the use of wavefront aberrometry for toric intraocular lens (IOL) implantation pre- and postoperatively.

METHODS: Twelve eyes that underwent AcrySof Toric IOL (Alcon Inc Laboratories) implantation were assessed pre- and postoperatively using the NIDEK OPD Scan II (NIDEK Co Ltd). Wavefront aberrometry, corneal topography, and objective visual quality were measured using the OPD Scan II with OPD-Station software. The internal and corneal aberrations were evaluated separately to determine whether the source of astigmatism was corneal, internal, or a combination of both.

RESULTS: All IOLs were implanted using a 2.75-mm incision. Wavefront aberrometry was used to determine the position of the incision to minimize postoperative astigmatism. The postoperative objective visual quality and wavefront maps were used to determine the effect of residual irregular or regular astigmatism.

CONCLUSIONS: The OPD Scan II determines whether irregular or regular astigmatism is due to the corneal surface or to the internal aberrations of the eye. The magnitude, type, and location of astigmatism can guide the proper placement of toric IOLs. [*J Refract Surg.* 2009;25:S110-S115.]

The cornea is the major refracting element of the eye, accounting for approximately 43.00 diopters (D) at the apex. With an average radius of curvature of 7.80 mm, the major refractive element is the front corneal surface (or tear film) compared with the posterior surface.[1] Corneal shape and refractive power both provide a measure of corneal astigmatism. Accurate measurement and orientation of astigmatism may improve visual quality and patient satisfaction from surgical or optical treatments.[2] Corneal topography measures both corneal shape and astigmatism using Placido-disk reflection from the tear film.

Using corneal topography, keratometry is measured and the curvature of different corneal meridians is determined. The image size of the reflex is converted to corneal radius using the mathematical relationship:

$$r = 2\,a\,Y/y$$

where r = anterior corneal radius, a = distance from keratometer's mire to cornea, Y = image size, and y = mire size.

The corneal radius is converted to refractive power using the relationship:

$$RP = 337.5/r$$

Corneal topography allows the quantitative and qualitative assessment of the cornea using a set of color-coded maps. Corneal topography can determine the magnitude, location, and extent of irregular astigmatism.[1]

In an astigmatic cornea, there is an increase in the curvature along one meridian forming a toroidal surface. This toroidal surface usually has orthogonal maximum and minimum curvatures. The orientations that contain the maximum curvatures are the principal meridians and have different powers forming foci at different points.[1] Astigmatism is regular when the principal meridians are perpendicular to each

From Diagnostica Oculistica e Microchirurgia Ambulatoriale, Rome, Italy.

The authors have no financial interest in the materials presented herein.

Correspondence: Cristina Giordano, D.O.M.A. srl, Via Filippo Civinini, 111, 00197 Rome, Italy. Tel: 39 33 51235072; E-mail: applysrl@virgilio.it

ISRS®
International Society of Refractive Surgery
A Partner of the American Academy of Ophthalmology

REFRACTIVE SURGERY SUBSPECIALITY DAY

Las Vegas (Nevada), *13th November 2015*

Micro-electrostimulation of the ciliary body as a new non-invasive method for presbyopia treatment: early results

D.O.M.A srl

LUCA GUALDI (Rome - Italy)

ISRS®
International Society of Refractive Surgery
A Partner of the American Academy of Ophthalmology

REFRACTIVE SURGERY SUBSPECIALITY DAY

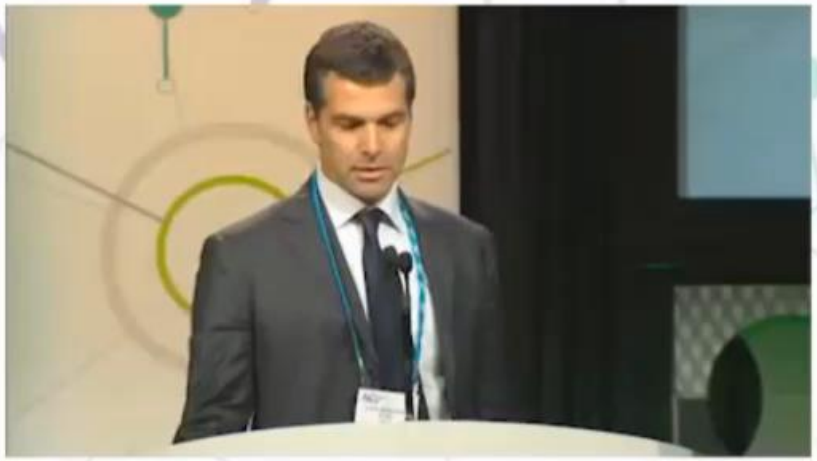
Las Vegas (Nevada), *13th November 2015*

Micro-electrostimulation of the ciliary body as a new non-invasive method for presbyopia treatment: early results

DOMA

LUCA GUALDI (Rome - Italy)

AAO® 2015



ISRS
International Society of Refractive Surgery
A Partner of the American Academy of Ophthalmology

REFRACTIVE SURGERY SUBSPECIALITY DAY

Las Vegas (Nevada), *13th November 2015*

Micro-electrostimulation of the ciliary body as a new non-invasive method for presbyopia treatment: early results

DOMA

LUCA GUALDI (Rome - Italy)

AAO 2015

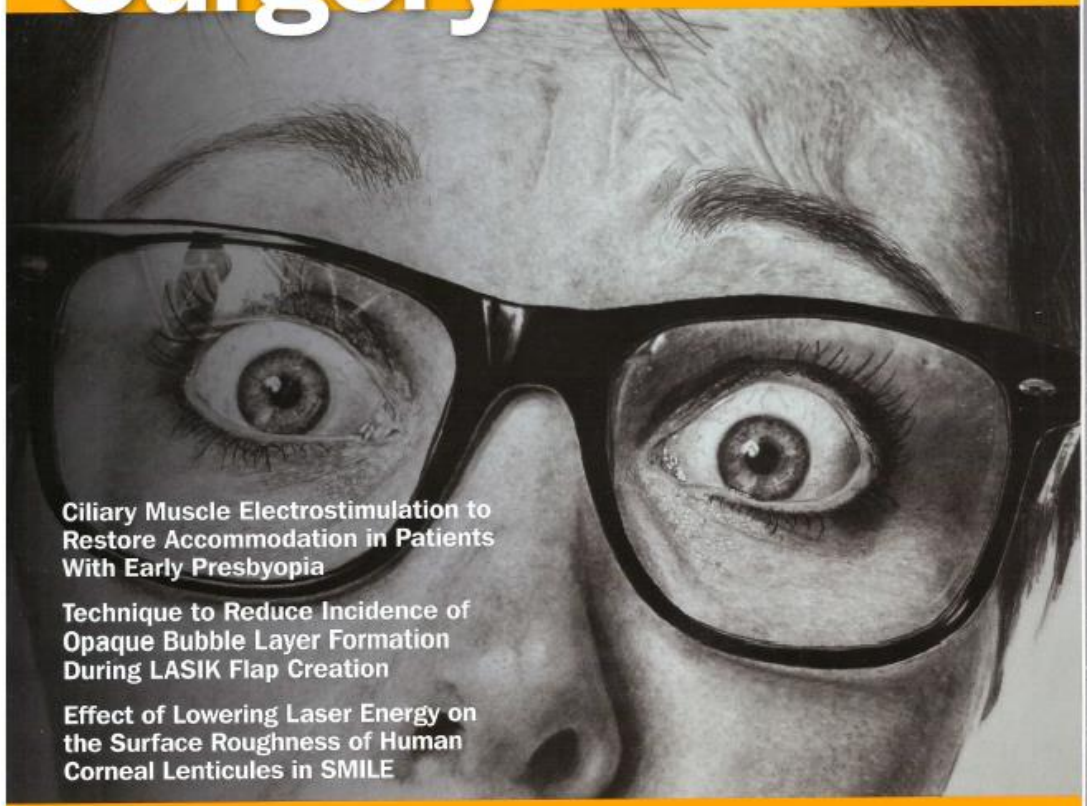

AMERICAN ACADEMY™
OF OPHTHALMOLOGY
Protecting Sight. Empowering Lives.
Subspecialty Day 2016
Refractive Surgery
Pursuit of Perfection
Chicago | Oct. 14
AAO 2016
Electrostimulation of
the Ciliary Muscle as a new
non-invasive technique
to restore Accommodation
in Early Presbyopia
DOMA
LUCA GUALDI (Rome - Italy)

Cited in MEDLINE/PubMed

Journal of Refractive Surgery®

SEPTEMBER 2017
Volume 33 • Number 9

Healio
ACCESS FULL TEXT
at Healio.com/JRS



Ciliary Muscle Electrostimulation to Restore Accommodation in Patients With Early Presbyopia

Technique to Reduce Incidence of Opaque Bubble Layer Formation During LASIK Flap Creation

Effect of Lowering Laser Energy on the Surface Roughness of Human Corneal Lenticules in SMILE

Published for the Society by SLACK Incorporated

ISRS International Society of Refractive Surgery
A Partner of the American Academy of Ophthalmology

ORIGINAL ARTICLE

Ciliary Muscle Electrostimulation to Restore Accommodation in Patients With Early Presbyopia: Preliminary Results

Luca Gualdi, MD; Federica Gualdi, MD; Dario Rusciano, PhD; Renato Ambrósio, Jr., MD, PhD; Marcella Q. Salomão, MD; Bernardo Lopes, MD; Veronica Cappello, MD; Tatiana Fintina, MD; Massimo Gualdi, MD

ABSTRACT

PURPOSE: To report short-term results of pulsed ciliary muscle electrostimulation to improve near vision, likely through restoring accommodation in patients with emmetropic presbyopia.

METHODS: In a prospective non-randomized trial, 27 patients from 40 to 51 years old were treated and 13 age- and refraction-matched individuals served as untreated controls. All patients had emmetropia and needed near sphere add between +0.75 and +1.50 diopters. The protocol included four sessions (one every 2 weeks within a 2-month period) of bilateral pulsed (2 sec on; 6 sec off) micro-electrostimulation with 26 mA for 8 minutes, using a commercially available medical device. The uncorrected distance visual acuity (UDVA) (logMAR) for each eye, uncorrected near (40 cm) visual acuity in each eye (UNVA) and with both eyes (UNVA OU) (logMAR), and reading speed (number of words read per minute at 40 cm) were measured preoperatively and 2 weeks after each session. Overall satisfaction (0 to 4 scale) was assessed 2 weeks after the last session.

RESULTS: UDVA did not change and no adverse events were noted in either group. Bilateral and monocular UNVA and reading speed were stable in the control group, whereas they continuously improved in the treated group (Friedman, $P < .00001$). Post-hoc significant differences were found for monocular and binocular UNVA after the second treatment and after the first treatment considering words read per minute ($P < .001$). One patient (3.7%) was not satisfied and 18 patients (66.7%) were very satisfied (score of 4). Average satisfaction score was 3 (satisfied).

CONCLUSIONS: Ciliary muscle contraction to restore accommodation was safe and improved the short-term accommodative ability of patients with early emmetropic presbyopia.

[*J Refract Surg.* 2017;33(9):578-583.] VIDEO

Presbyopia, from the Greek words *presbys* meaning "old man" and *ops* meaning to "see like," is the inability to comfortably focus on close objects due to aging. This is the most common physiologic alteration of eyesight, affecting more than 1.2 billion individuals worldwide, and leads to a major impact on productivity among healthy adults.[1] Presbyopia also significantly affects quality of life in both developed and developing countries.[2] Unlike ametropic defects or refractive errors (myopia, hyperopia, and astigmatism), caused by genetic and environmental conditions that affect the shape of the eye, presbyopia does affect virtually every individual older than 50 or 60 years due to the progressive loss of the accommodation ability of the eye.

Current treatments for presbyopia are based on optical corrections, but surgical refractive modifications are also possible. Although near vision can be easily recovered by the use of reading glasses, there is nonetheless a great demand for more permanent solutions to avoid the use of corrective lenses. However, available invasive surgical procedures have several limitations and are not devoid of side effects.[3] Pharmaceutical treatments stimulating the contraction of ciliary muscles in the presence of different miotics[4-6] and nonsteroidal anti-inflammatory drugs[7] have been recently described, suggesting the relevance of the stimulation of the ciliary muscle to recover some of its function.

From Diagnostica Oftalmologica e Microchirurgia Oculare, Rome, Italy (LG, FG, VC, TF, MG); Sooft Italia SpA, Rome, Italy (DR); Rio de Janeiro Corneal Tomography and Biomechanics Study Group, Instituto Olhos Renato Ambrósio, Rio de Janeiro, Brazil (RA, MQS, BL); and Federal University of São Paulo, São Paulo, Brazil (RA, MQS, BL).

Submitted: January 22, 2017; Accepted: May 26, 2017

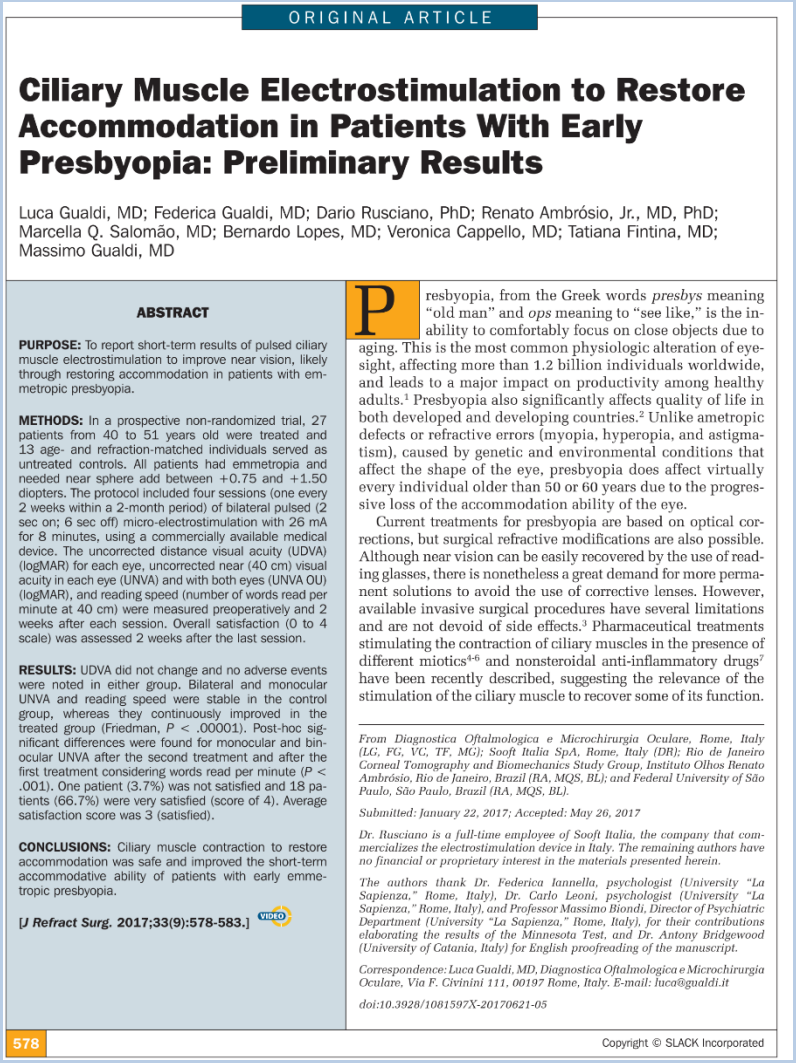
Dr. Rusciano is a full-time employee of Sooft Italia, the company that commercializes the electrostimulation device in Italy. The remaining authors have no financial or proprietary interest in the materials presented herein.

The authors thank Dr. Federica Iannella, psychologist (University "La Sapienza," Rome, Italy), Dr. Carlo Leoni, psychologist (University "La Sapienza," Rome, Italy), and Professor Massimo Biondi, Director of Psychiatric Department (University "La Sapienza," Rome, Italy), for their contributions elaborating the results of the Minnesota Test, and Dr. Antony Bridgewood (University of Catania, Italy) for English proofreading of the manuscript.

Correspondence: Luca Gualdi, MD, Diagnostica Oftalmologica e Microchirurgia Oculare, Via F. Civinini 111, 00197 Rome, Italy. E-mail: luca@gualdi.it

doi:10.3928/1081597X-20170621-05

Luca Gualdi, MD
2018 Waring Medal Recipient



ORIGINAL ARTICLE

Ciliary Muscle Electrostimulation to Restore Accommodation in Patients With Early Presbyopia: Preliminary Results

Luca Gualdi, MD; Federica Gualdi, MD; Dario Rusciano, PhD; Renato Ambrósio, Jr., MD, PhD; Marcella Q. Salomão, MD; Bernardo Lopes, MD; Veronica Cappello, MD; Tatiana Fintina, MD; Massimo Gualdi, MD

ABSTRACT

PURPOSE: To report short-term results of pulsed ciliary muscle electrostimulation to improve near vision, likely through restoring accommodation in patients with emmetropic presbyopia.

METHODS: In a prospective non-randomized trial, 27 patients from 40 to 51 years old were treated and 13 age- and refraction-matched individuals served as untreated controls. All patients had emmetropia and needed near sphere add between +0.75 and +1.50 diopters. The protocol included four sessions (one every 2 weeks within a 2-month period) of bilateral pulsed (2 sec on; 6 sec off) micro-electrostimulation with 26 mA for 8 minutes, using a commercially available medical device. The uncorrected distance visual acuity (UDVA) (logMAR) for each eye, uncorrected near (40 cm) visual acuity in each eye (UNVA) and with both eyes (UNVA OU) (logMAR), and reading speed (number of words read per minute at 40 cm) were measured preoperatively and 2 weeks after each session. Overall satisfaction (0 to 4 scale) was assessed 2 weeks after the last session.

RESULTS: UDVA did not change and no adverse events were noted in either group. Bilateral and monocular UNVA and reading speed were stable in the control group, whereas they continuously improved in the treated group (Friedman, $P < .00001$). Post-hoc significant differences were found for monocular and binocular UNVA after the second treatment and after the first treatment considering words read per minute ($P < .001$). One patient (3.7%) was not satisfied and 18 patients (66.7%) were very satisfied (score of 4). Average satisfaction score was 3 (satisfied).

CONCLUSIONS: Ciliary muscle contraction to restore accommodation was safe and improved the short-term accommodative ability of patients with early emmetropic presbyopia.

[*J Refract Surg.* 2017;33(9):578-583.]

Presbyopia, from the Greek words *presbys* meaning "old man" and *ops* meaning to "see like," is the inability to comfortably focus on close objects due to aging. This is the most common physiologic alteration of eyesight, affecting more than 1.2 billion individuals worldwide, and leads to a major impact on productivity among healthy adults.[1] Presbyopia also significantly affects quality of life in both developed and developing countries.[2] Unlike ametropic defects or refractive errors (myopia, hyperopia, and astigmatism), caused by genetic and environmental conditions that affect the shape of the eye, presbyopia does affect virtually every individual older than 50 or 60 years due to the progressive loss of the accommodation ability of the eye.

Current treatments for presbyopia are based on optical corrections, but surgical refractive modifications are also possible. Although near vision can be easily recovered by the use of reading glasses, there is nonetheless a great demand for more permanent solutions to avoid the use of corrective lenses. However, available invasive surgical procedures have several limitations and are not devoid of side effects.[3] Pharmaceutical treatments stimulating the contraction of ciliary muscles in the presence of different miotics[4-6] and nonsteroidal anti-inflammatory drugs[7] have been recently described, suggesting the relevance of the stimulation of the ciliary muscle to recover some of its function.

From Diagnostica Oftalmologica e Microchirurgia Oculare, Rome, Italy (LG, FG, VC, TF, MG); Sooft Italia SpA, Rome, Italy (DR); Rio de Janeiro Corneal Tomography and Biomechanics Study Group, Instituto Olhos Renato Ambrósio, Rio de Janeiro, Brazil (RA, MQS, BL); and Federal University of São Paulo, São Paulo, Brazil (RA, MQS, BL).

Submitted: January 22, 2017; Accepted: May 26, 2017

Dr. Rusciano is a full-time employee of Sooft Italia, the company that commercializes the electrostimulation device in Italy. The remaining authors have no financial or proprietary interest in the materials presented herein.

The authors thank Dr. Federica Iannella, psychologist (University "La Sapienza," Rome, Italy), Dr. Carlo Leoni, psychologist (University "La Sapienza," Rome, Italy), and Professor Massimo Biondi, Director of Psychiatric Department (University "La Sapienza," Rome, Italy), for their contributions elaborating the results of the Minnesota Test, and Dr. Antony Bridgewood (University of Catania, Italy) for English proofreading of the manuscript.

Correspondence: Luca Gualdi, MD, Diagnostica Oftalmologica e Microchirurgia Oculare, Via F. Civinini 111, 00197 Rome, Italy. E-mail: luca@gualdi.it

doi:10.3928/1081597X-20170621-05

Ciliary Muscle Electrostimulation to Restore Accommodation in Patients With Early Presbyobia: Preliminary Results

- Luca Gualdi, MD
- Federica Gualdi, MD
- Dario Rusicano, PhD
- Renato Ambrósio, Jr., MD, PhD
- Marcella Q. Salomão, MD
- Bernardo Lopes, MD
- Veronica Cappello, MD
- Tatiana Fintina, MD
- Massimo Gualdi, MD

CONCLUSIONS: Ciliary muscle contraction to restore accommodation was safe and improved the short-term accommodative ability of patients with early emmetropic presbyopia. **[*J Refract Surg.* 2017;33(9):578-583.]**

ANNOUNCING THE 2018

Waring Medal

SPONSORED BY SLACK INCORPORATED

George O. Waring III, MD, FACS, FRCOphth

The Waring Medal for editorial excellence is awarded to an author who has made a significant contribution to the JOURNAL OF REFRACTIVE SURGERY. The award is open to all authors regardless of age, professional degree, or academic/institutional affiliation. The medal recognizes the tenure and contributions of George O. Waring, III, MD, FACS, FRCOphth, Editor-in-Chief of the JOURNAL OF REFRACTIVE SURGERY from 1989 to 2010. The award, sponsored by SLACK Incorporated, consists of a medal and a $5,000 prize.

CONGRATULATIONS TO THIS YEAR'S WINNER

LUCA GUALDI, MD

Diagnostica Oftalmologica e Chirugia Ambulatoriale, Rome, Italy

Ciliary Muscle Electrostimulation to Restore Accommodation in Patients With Early Presbyopia: Preliminary Results*

Luca Gualdi, MD; Federica Gualdi, MD; Dario Rusciano, PhD; Renato Ambrósio, Jr., MD, PhD; Marcella Q. Salomão, MD; Bernardo Lopes, MD; Veronica Cappello, MD; Tatiana Fintina, MD; Massimo Gualdi, MD

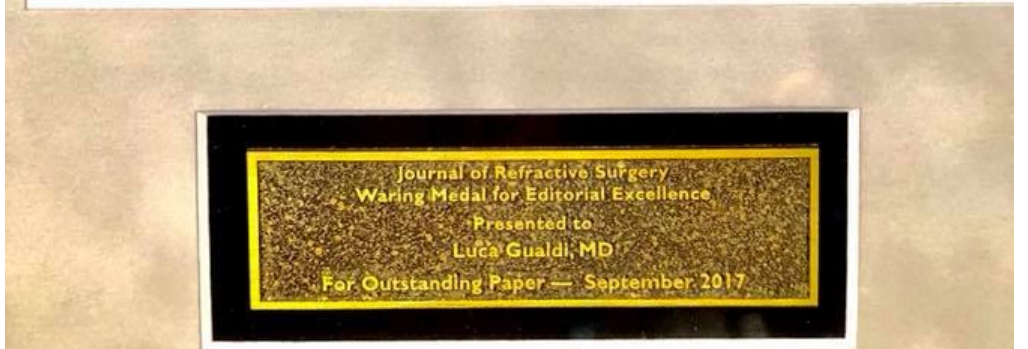
Gualdi and colleagues reported a novel method for the improvement of near vision through electrostimulation to improve accommodative ability that was safe and may prove efficacious for the most pervasive and challenging refractive error to treat: presbyopia.

***Ciliary Muscle Electrostimulation to Restore Accommodation in Patients With Early Presbyopia: Preliminary Results.** Gualdi L, Gualdi F, Rusciano D, Ambrósio R Jr, Salomão MQ, Lopes B, Cappello V, Fintina T, Gualdi M. *J Refract Surg.* 2017;33(9):578-583.

18-1613


OSN
NewYork


GEORGE O. WARING III, MD


Journal of Refractive Surgery
Waring Medal for Editorial Excellence
Presented to
Luca Gualdi, MD
For Outstanding Paper — September 2017

Faculty

Amar Agarwal MD
Chennai, India

Renato Ambrósio Jr MD
Rio de Janeiro, RJ, Brazil

Wallace Chamon MD
São Paulo, SP, Brazil

Ashvin Agarwal MD
Chennai, Tamilnadu, India

Gerd U Auffarth MD
Heidelberg, Germany

David F Chang MD
Los Altos, CA

Iqbal K Ahmed MD
Mississauga, ON, Canada

Enrique Barragan MD
Garza Garcia, NL, Mexico

John So-Min Chang MD
Hong Kong, Hong Kong

Jorge L Alió MD PhD
Alicante, Spain

Vineet N Batra MD
San Leandro, CA

Wayne Crewe-Brown MD
St. Briavels, Gloucestershire, United Kingdom

Deepinder K Dhaliwal MD
Pittsburgh, PA

No photo available

Ashraf H El Habbak MD
Cairo, Egypt

Damien Gatinel MD
Paris, France

Kendall E Donaldson MD
Plantation, FL

Alaa M Eldanasoury MD
Jeddah, Saudi Arabia

Andrzej Grzybows
Poznan, Poland

Eric D Donnenfeld MD
Garden City, NY

William J Fishkind MD FAC
Tucson, AZ

Luca Gualdi MD
Rome, Italy

Daniel S Durrie MD
Overland Park, KS

Sri Ganesh MBBS MS DNB
Bangalore, Karnataka, India

Farhad Hafezi MD PhD
Dietikon, Zurich, Switzerland

- Refractive Surgery Subspeciality Day -

Chicago 26th October 2018

"CILIARY MUSCLE ELECTROSTIMULATION TO RESTORE ACCOMMODATION IN EARLY PRESBYOPIA"

LUCA GUALDI (Rome – Italy)

Refractive Surgery Subspecialty Day
Chicago, 30 th September 2022

Can we restore the accommodation today ?

Luca Gualdi MD – Rome (Italy)


ISRS


ISRS


ISRS


ISRS


AMERICAN ACADEMY
OF OPHTHALMOLOGY
Protecting Sight. Empowering Lives.
ISRS

Pilocarpine and other miotics have long
o be associated with an increased risk
ment. Prior to prescribing pilocarpine
hysicians should inform patients of this
event and consider that these patients
ing dilated examination, particularly if
to determine if they are at higher risk
chment. Before the initiation of ther-
uld be appropriately informed regarding
inal tears or detachment, which include
and visual field loss. (Am J Ophthal-
52–55. © 2022 Elsevier Inc. All rights

tion.[3] Furthermore, patients underwent dilated fundoscopic examinations at the screening visit and were excluded in the "presence of any ocular condition that, in the opinion of the investigator, could affect the safety of the participant."[3] Furthermore, patients with a history of cataract surgery were excluded. Lastly, patients with myopia greater than −4 diopters (D) were also excluded. Thus, the GEM-INI trials effectively excluded patients with a presumed higher risk of retinal detachment (patients with underlying retinal pathology on dilated examination, high myopes, and pseudophakic patients).

In the present series, we describe 3 retinal detachments in 2 patients who used topical pilocarpine 1.25% ophthalmic drops for presbyopia.

Retinal Detachments Associated With Topical Pilocarpine Use for Presbyopia.
Al-khersan, Hasenin et al. American Journal of Ophthalmology, Volume 242, 52 – 55, May 20, 2022


WHAT'S
NEW
ISRS