Latest Developments in Lasers and Light Therapies for Acne

South Beach Symposium
Miami Beach, Florida
February 6 – 9, 2020

Presented by Michael H. Gold, MD
Gold Skin Care Center
Tennessee Clinical Research Center
Nashville, TN USA

Academic Appointments

- Assistant Clinical Professor
  - Department of Medicine, Division of Dermatology, Nashville, TN USA
    - Vanderbilt University School of Medicine: 2006 - 2014
    - Vanderbilt University School of Nursing: 2006 - Present

- Adjunct Assistant Professor
  - Meharry Medical College: 2013 - Present
    - School of Medicine, Nashville, TN USA

- Visiting Professor of Dermatology
  - Huashan Hospital, Fudan University (Shanghai Medical University), Shanghai, China: 2006 - Present
  - The First Hospital of China Medical University, Shenyang, China: 2008 - Present
  - Guangdong Provincial People's Hospital, Guangzhou, China: 2013 - Present

- Visiting Professor of Plastic Surgery
  - First People's Hospital of Foshan University, Guangdong, China: 2012 - Present
  - The First Affiliated Hospital of Zhejiang University, Hangzhou, Zhejiang: 2013 - Present

ACNE:WHY DO WE CARE

- Affects
  - >80% of adolescents
  - >40% of adults over than 25
- Genetics plays a role
- Associated with
  - Disfigurement
  - Pain
  - Loss of confidence
  - Depression
- Effects on quality of life are comparable to those suffering from chronic diseases like asthma, seizures and diabetes

Conventional Acne Treatment Model

Diagnose → Prescribe → Wait & See

Problem #1 with the Conventional Model: Unpredictable and Provides Limited Efficacy. Patients increasingly do not want drugs

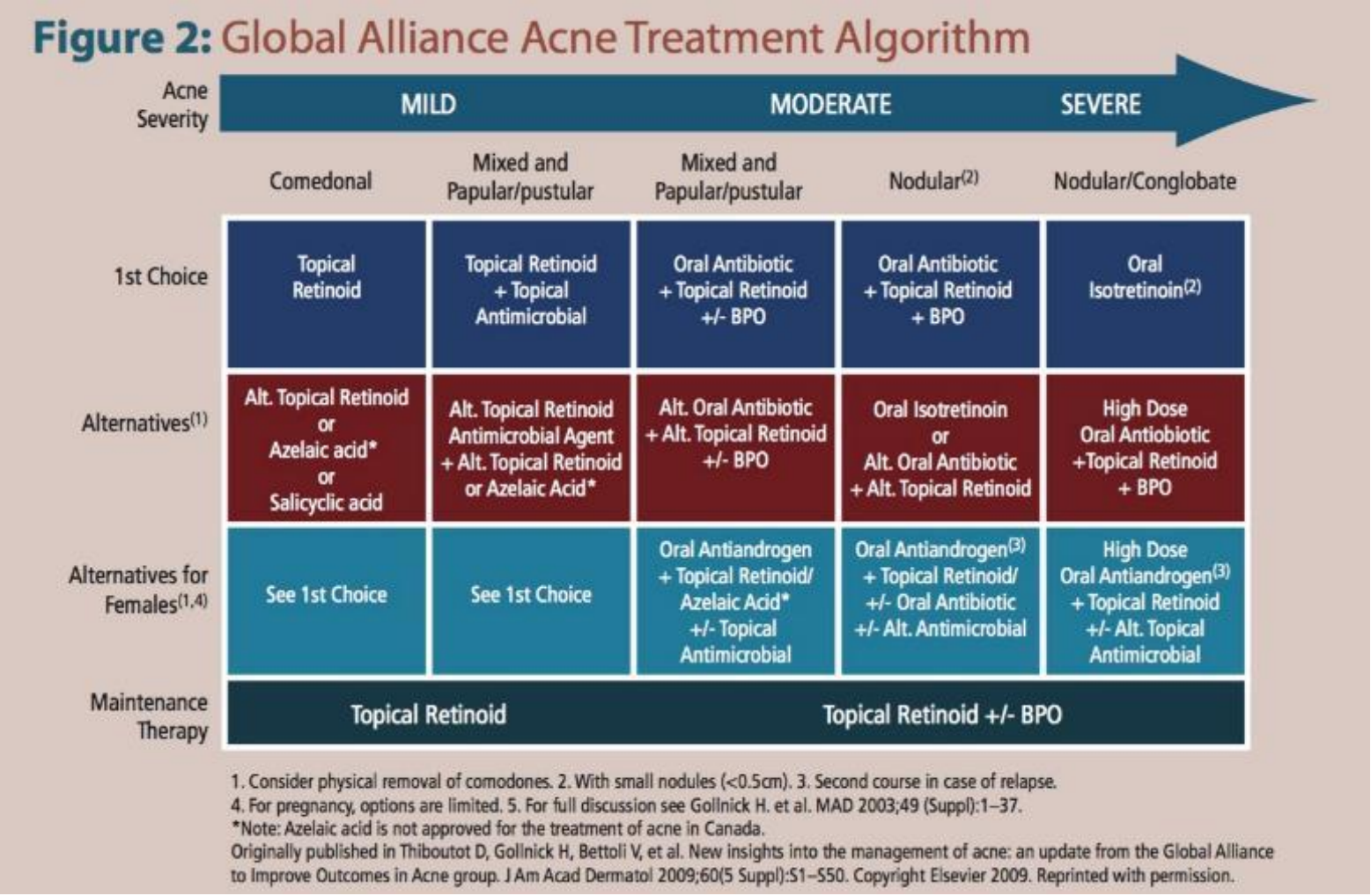
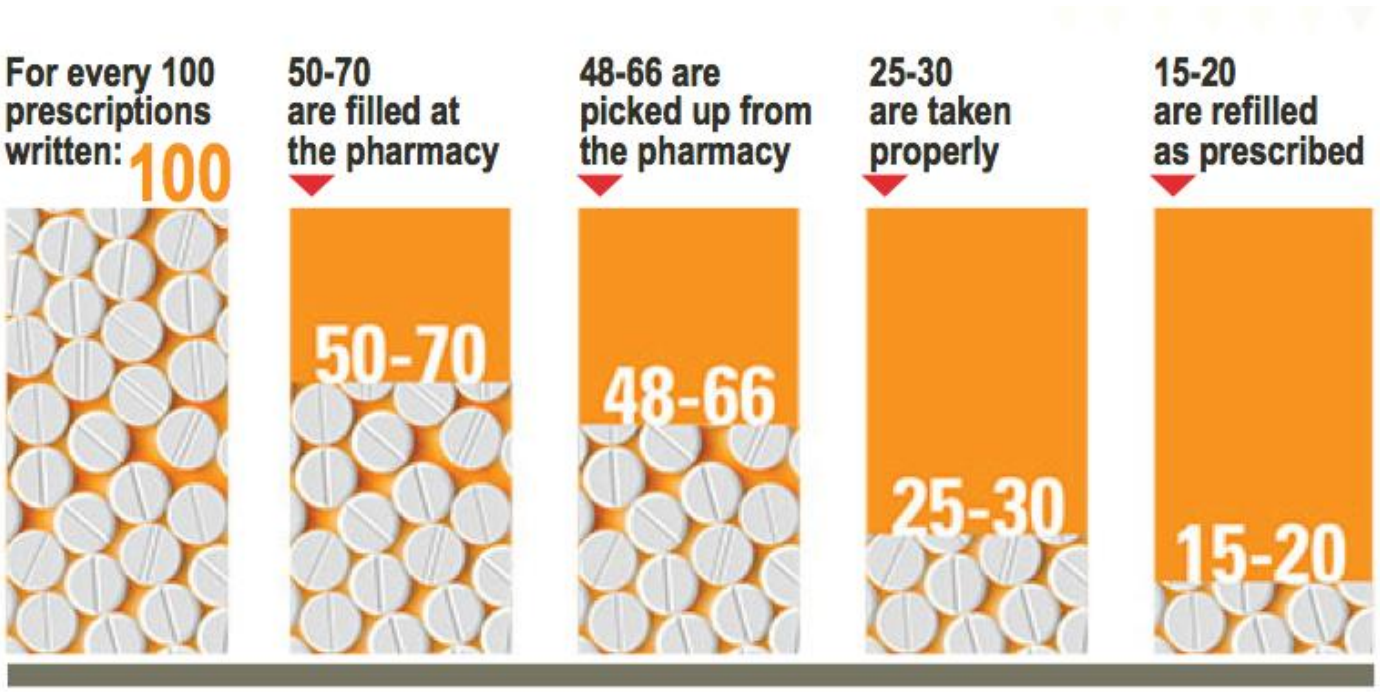


Figure 2: Global Alliance Acne Treatment Algorithm

Acne Severity	MILD		MODERATE		SEVERE
	Comedonal	Mixed and Papular/pustular	Mixed and Papular/pustular	Nodular[2]	Nodular/Conglobate
1st Choice	Topical Retinoid	Topical Retinoid + Topical Antimicrobial	Oral Antibiotic + Topical Retinoid +/- BPO	Oral Antibiotic + Topical Retinoid + BPO	Oral Isotretinoin[2]
Alternatives[1]	Alt. Topical Retinoid or Azelaic acid* or Salicyclic acid	Alt. Topical Retinoid Antimicrobial Agent + Alt. Topical Retinoid or Azelaic Acid*	Alt. Oral Antibiotic + Alt. Topical Retinoid +/- BPO	Oral Isotretinoin or Alt. Oral Antibiotic + Alt. Topical Retinoid	High Dose Oral Antiobiotic +Topical Retinoid + BPO
Alternatives for Females[1,4]	See 1st Choice	See 1st Choice	Oral Antiandrogen + Topical Retinoid/ Azelaic Acid* +/- Topical Antimicrobial	Oral Antiandrogen[3] + Topical Retinoid/ +/- Oral Antibiotic +/- Alt. Antimicrobial	High Dose Oral Antiandrogen[3] + Topical Retinoid +/- Alt. Topical Antimicrobial
Maintenance Therapy	Topical Retinoid		Topical Retinoid +/- BPO		

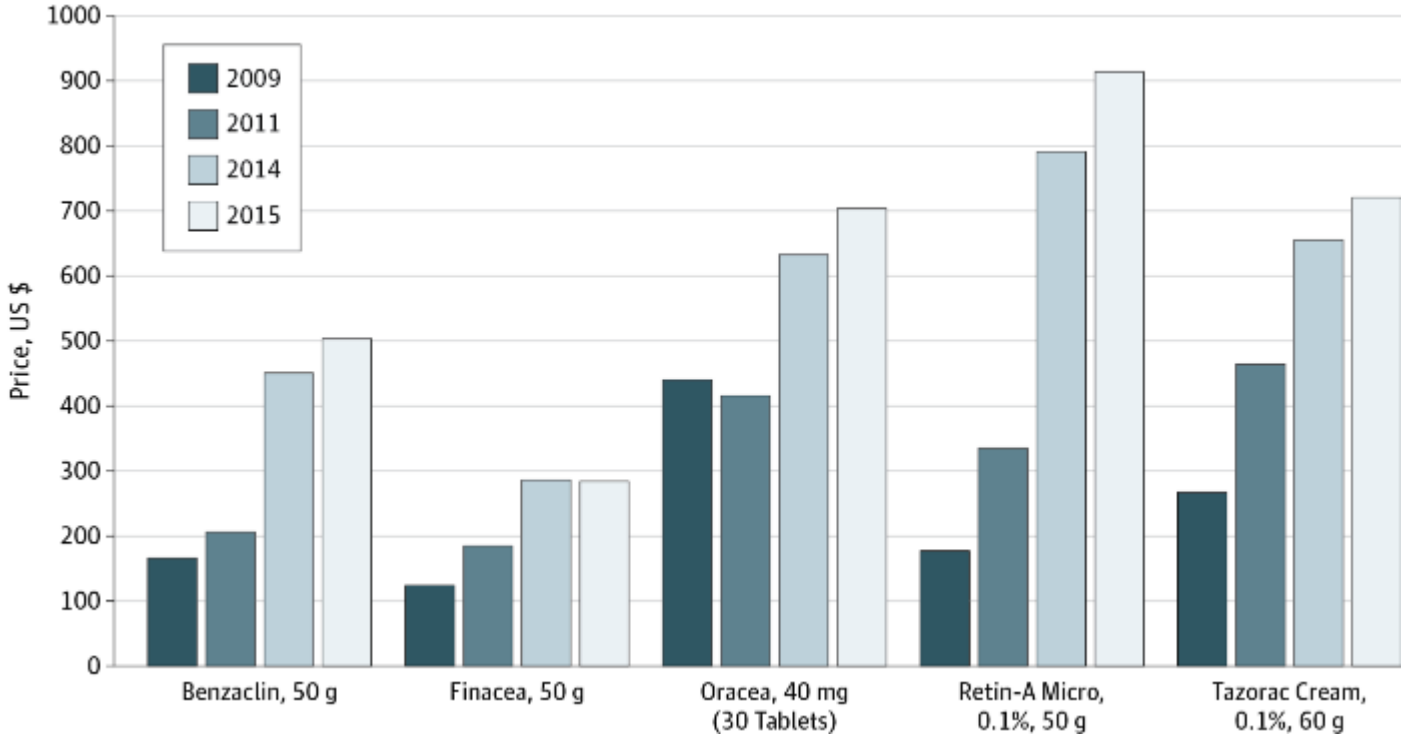
1. Consider physical removal of comodones. 2. With small nodules (<0.5cm). 3. Second course in case of relapse.
4. For pregnancy, options are limited. 5. For full discussion see Gollnick H. et al. MAD 2003;49 (Suppl):1–37.
*Note: Azelaic acid is not approved for the treatment of acne in Canada.
Originally published in Thiboutot D, Gollnick H, Bettoli V, et al. New insights into the management of acne: an update from the Global Alliance to Improve Outcomes in Acne group. J Am Acad Dermatol 2009;60(5 Suppl):S1–S50. Copyright Elsevier 2009. Reprinted with permission.

Problem #2 with the Conventional Model: Patient Adherence



Controlling patient outcome is lost as soon as a prescription is written, plus requires administrative time and fees

Problem #3 with the Conventional Model: Prescription prices are costly and rising, even for generics



Monthly patient costs can be more than $1,000

Your office receives none of this profit

From: **Changes in Retail Prices of Prescription Dermatologic Drugs From 2009 to 2015**

JAMA Dermatol. 2016;152(2):158-163. doi:10.1001/jamadermatol.2015.3897

Problem #4 with the Traditional Model: Significant results may take up to 12 weeks to appear and hinders

Most dermatology patients see 3-5 doctors before finding one that solves their primary concern

Patients and physicians need a more effective, predictable, and cost-effective, cost-efficient approach to addressing acne for the modern patient

Devices for Acne

Expert Review of Dermatology 2006

Novel treatment options for severe inflammatory acne vulgaris

Michael H Gold

Acne vulgaris is one of the most common dermatological disorders encountered in everyday practice. Treatment options for this often psychologically scarring disease are numerous and, for many individuals, provide relief from the disorder. However, factors such as antibiotic resistance and, slow onset of action from many topical therapies has led researchers to seek out alternative therapies, especially for those suffering from moderate to severe inflammatory acne vulgaris.

Expert Rev. Dermatol. 1(1), 13–23 (2006)

Acne Vulgaris

- Laser/Light technology
  - Lasers/light sources to reduce the *P. acnes* population
    - Blue Light Sources - Blu-U (Dusa)
    - Intense Pulsed Light Devices– Quantum/Vasculight/Lumenis One/M22 (Lumenis), Ellipse (DDD), elos Plus(Syneron), BBL/Joule (Sciton), Harmony XL (Alma), Lumecca (Invasix), Isolaz (Solta)
    - Vascular Lasers –Cynergy (Cynosure), V-Beam Perfecta (Candela), N-Lyte (ICN), AdvaTX (Advantix)
    - Short-Pulsed 650 usec 1064 nm – Aerolase Neo

Acne Vulgaris

- Blu-U device FDA cleared for inflammatory acne
  - Used originally for ALA-PDT therapy
  - Works for mild to moderate inflammatory acne vulgaris as well
  - 2004 AAD Poster Presentation; J Drugs Dermatol 2004– Gold, Goldman, Rao
    - Blu-U more effective in inflammatory acne lesions than 1% clindamycin solution
    - Safety and efficacy proved

Blue Light/Acne
Gold/Goldman

A MULTICENTER CLINICAL EVALUATION OF THE TREATMENT OF MILD TO MODERATE INFLAMMATORY ACNE VULGARIS OF THE FACE WITH VISIBLE BLUE LIGHT IN COMPARISON TO TOPICAL 1% CLINDAMYCIN ANTIBIOTIC SOLUTION

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Abstract

Background: Blue light sources have been shown to be effective in the treatment of mild to moderate inflammatory acne vulgaris lesions.

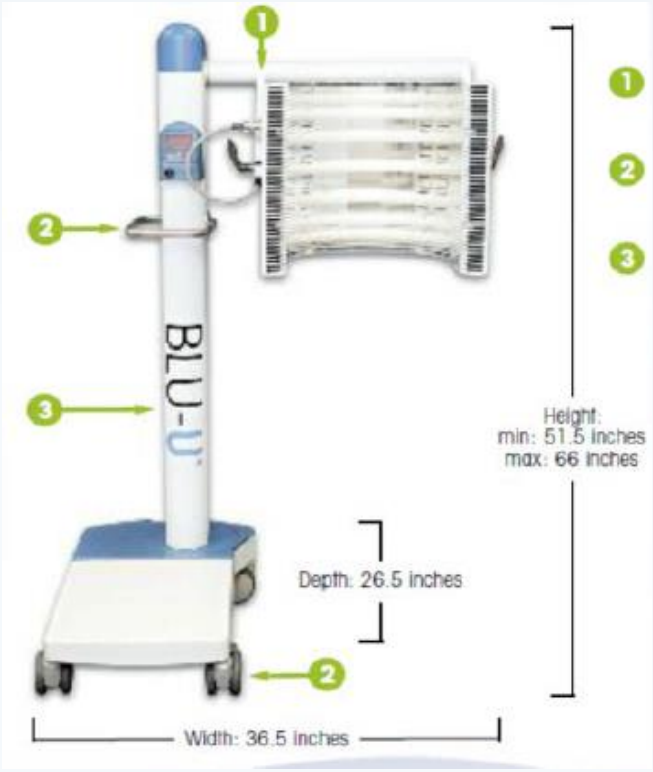
Objective: We evaluated the safety and efficacy of a new blue light source in the treatment of mild to moderate inflammatory acne vulgaris in comparison to topical 1% clindamycin solution.

Results: Blue light therapy reduced inflammatory acne vulgaris lesions by an average of 34%, as compared to 14% for topical 1% clindamycin solution.

Conclusions: The blue light source presented in this report is a safe and effective treatment option available to our patients with mild to moderate inflammatory acne lesions.

BLU-U Blue Light Photodynamic Therapy

Open BLU-U



Adjustable height positioning of the unit for treatment flexibility

Large casters and post handle for easy mobility

A pivoting post for compact storage and easy movement within the treatment facility

Closed BLU-U

Storage space needed is 2 x 3 feet

BLU-U specifications

Weight	155 lbs.
Light source	Narrow band blue fluorescence
Wavelength range	402-432 nm (FWHM)
Surface treatment area (active emitting area)	30 x 46 cm²
Peak wavelength	417±5 nm
Power requirements	120/220-240 VAC; 60/50 Hz; 2.5/1.5 A

MKT-1490 Rev E

Acne Vulgaris

- Laser/Light technology
  - Intense Pulsed Light (IPL) technology for acne-many systems exist
    - Quantum, VascuLight, Lumenis One, M22 by Lumenis
    - Other systems – Harmony by Alma, BBL by Sciton, Isolaz by Solta, Elos Plus by Syneron, Lumecca (Invasix)
    - ClearTouch, SkinStation by Radiancy
      - Ross V (2002 ASLMS) – 50% inflammatory acne lesion improvement
      - Elman M, Lebzelter J. Light therapy in the treatment of acne vulgaris. Dermatol Surg 2004; 30: 130-146.
        - 85% > 50% improvement; 15-20% non-responders

Lumenis One – Dr. Li, China
Pre

Lumenis One – Dr. Li, China

IPL
China Examples

病变类型：

痤　疮

Acne

治疗参数：

波　　长：560nm

能量密度：14–20J/cm²

脉冲方式：2个同步脉冲

脉冲延迟：30ms

脉　　宽：3.5ms

IPL
China Examples

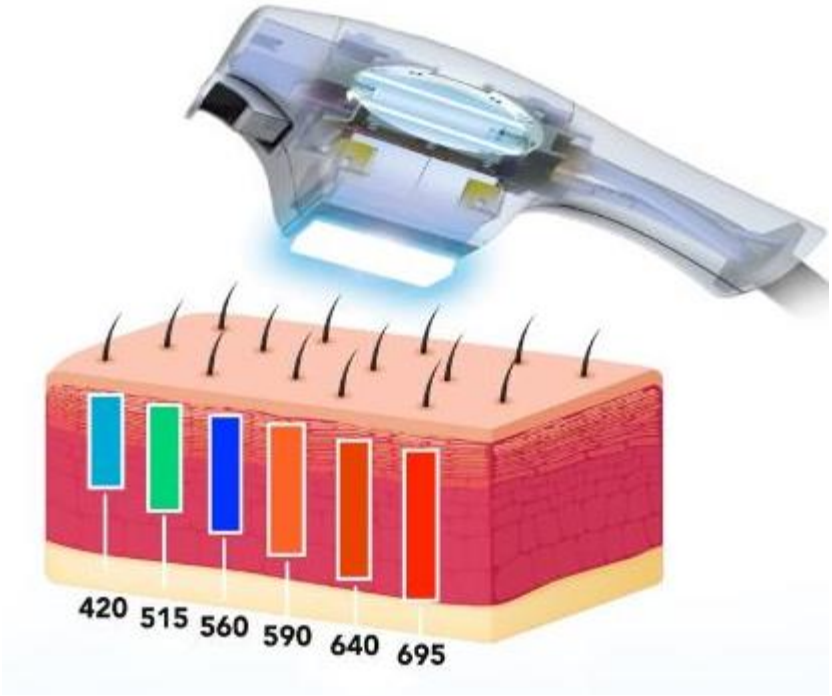
Sciton BBL is available in 2 options

BBL module incorporated into JOULE™

BBLs Standalone System

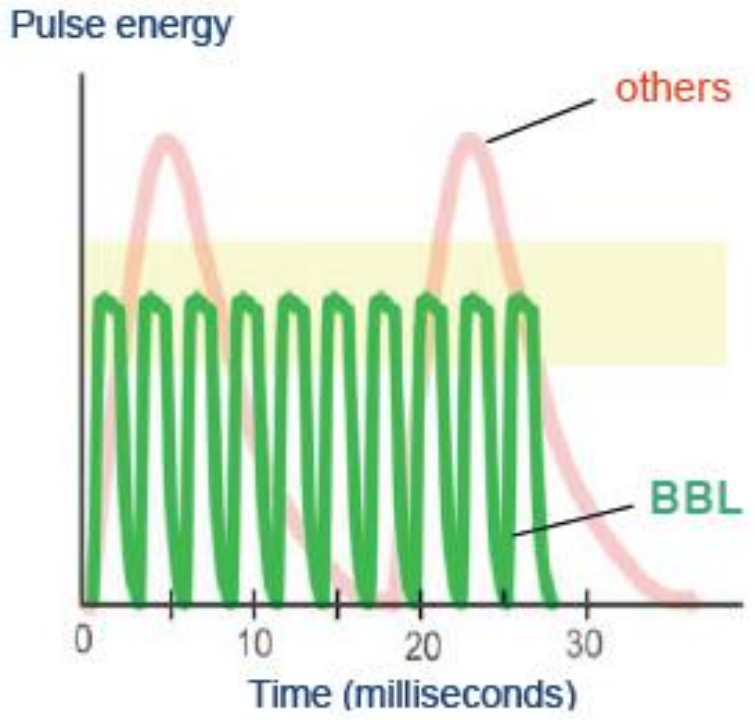
BBL™ easy to change Smart Filters™

- BBL uses Smart Filters™ allowing for quick and easy adjustment of wavelengths on a single hand piece.
- This allows you to address multiple skin concerns without having to use or change multiple hand pieces.



BBL™ Pulse Delivery

- ## Square-wave Energy Delivery
  - BBL delivers a pulse to tissue with precise on and off times and controlled irradiance.
  - Many systems deliver only single, double or triple pulses with extended low power tails.
  - BBL square wave pulsing does not create low energy tail and waste of energy.



- ## True Pulse Width Control
  - BBL utilizes active feedback modulation up to 10 times per pulse width with a wide range of delivery times.
  - OLDER technologies simply fire two short pulses with a delay between them to inefficiently simulate longer pulses.

The BroadBand Light Family

BBL

Correcting Treatment

FOREVER YOUNG- BBL

Anti-Aging Treatment

FOREVER CLEAR- BBL

Acne Treatment

FOREVER BARE- BBL

Hair Removal

SkinTyte

Skin Tightening Treatment

BBL Indications per Brand

BBL	FOREVER YOUNG- BBL	FOREVER CLEAR- BBL	FOREVER BARE- BBL	SkinTyte
Correcting Treatment	Anti-Aging Treatment	Acne Treatment	Hair Removal	Skin Tightening Treatment
Pigmented lesions: hyperpigmentation, melasma Cutaneous lesions: warts, scars and striae Vascular lesions: rosacea, portwine stains, hemangiomas, telangiectasias, angiomas, leg veins and venous malformations	Mostly sun-induced indications. Pigmented lesions: dyschromia, ephelides (freckles)	Mild to moderate inflammatory and pustular inflammatory acne vulgaris	Removal of unwanted hair from all skin types, and to effect stable long-term or permanent hair reduction.	Topical heating for the purpose of elevating tissue temperature to initiate the body's natural healing process.

Let our pictures do the talking…

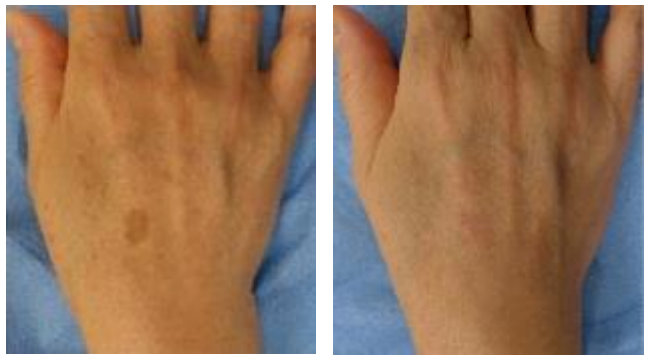
Courtesy of Phillip Chang, MD

Courtesy of Melody Dyer, DO

Courtesy of Jason Pozner, MD

Courtesy Paula Hicks, MD

Courtesy of Antonio Campo, MD, PhD



Courtesy of Kei Negishi, MD

Forever Clear BBL Results

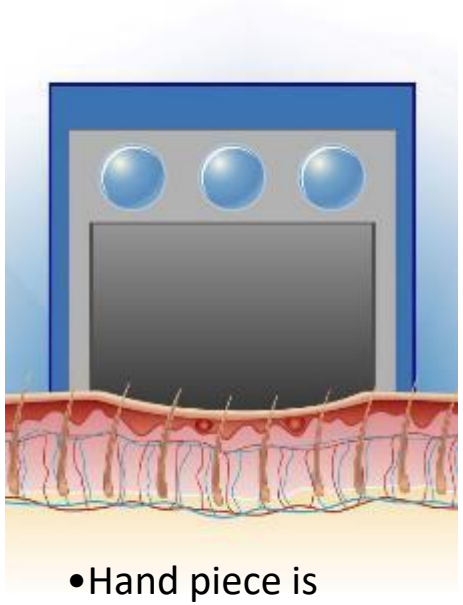
FCBBL | 8 weeks post 5 tx | courtesy of Patrick Bitter, Jr., MD

FCBBL | 3.5 months post 9 tx | courtesy of Patrick Bitter, Jr., MD

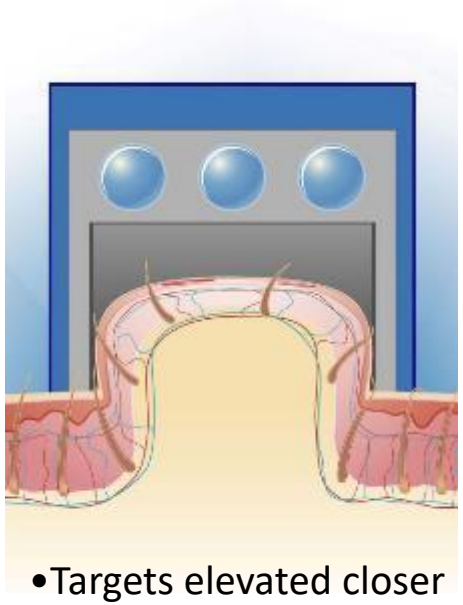
FCBBL | 1 month post 9 tx | courtesy of Brooke Bangart, National Laser Institute

FCBBL | 4 months post 4 tx | courtesy of Michelle Turley, Savannah Plastic Surgery

Photopneumatic Technology: The Mechanism



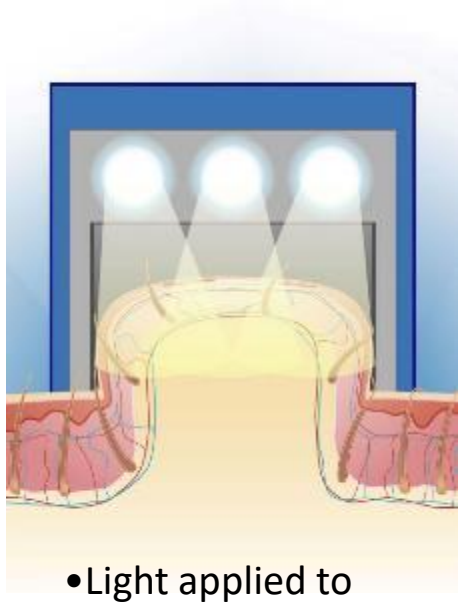
•Hand piece is placed on treatment area



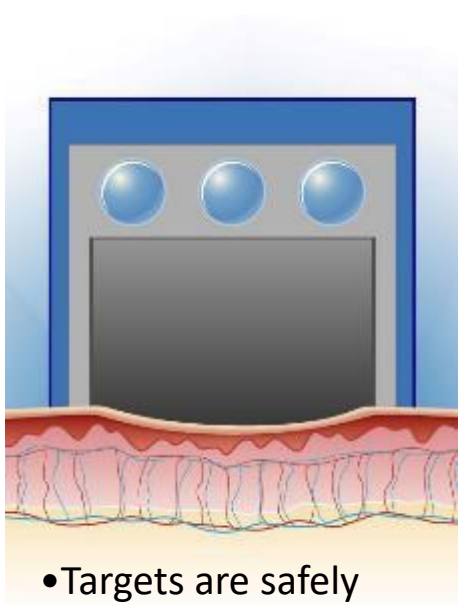
•Targets elevated closer to skin’s surface

•Blood concentration reduced

•Melanin concentration reduced



•Light applied to treatment area



•Targets are safely and painlessly destroyed

Patient Outcomes

Isolaz acne therapy harnesses the clinically proven, unique combination of vacuum extraction, broadband ligh and enhanced topical application

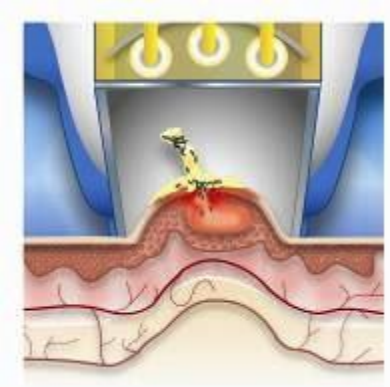
Treatment Outcomes

- Significant and lasting clearance of mild, moderate and severe acne
- Effective acne solution for non-responders to other acne therapies
- Replenished, clearer skin and a more even complexion

How It Works

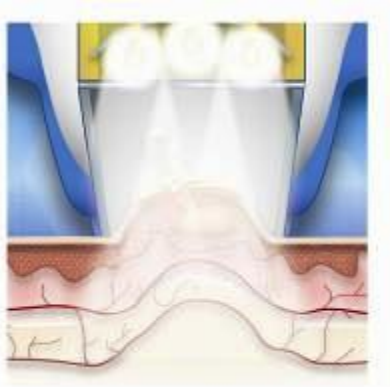
Isolaz treatments cleanse, purify, and shrink pores while destroying acne causing bacteria for a clearer, more even complexion.

CLEANSE
Isolaz Tip



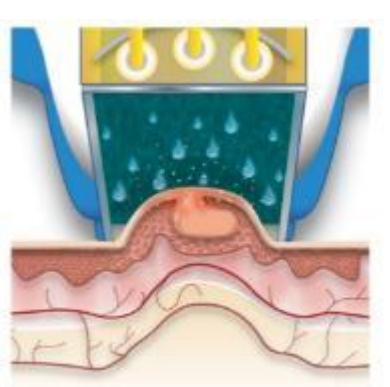
Vacuum tip gently lifts acne impurities and extracts dirt, blackheads, and excess oil from your pores.

PURIFY
Isolaz Tip



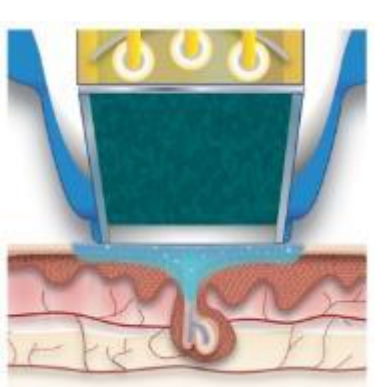
Broadband light is applied to help destroy acne causing bacteria and reduce sebum production.

REPLENISH
Profusion Tip



Skin care regimens get a kick-start by accessing the deeper layers of your skin.

RELEASE
Profusion Tip



Skin is released to normal position, and pores are left clean and purified for clearer, replenished skin.

Clinical Studies
Weiss & Munavalli

- Reduction of acne lesions began as soon as 2 days with median of 5 days.
- Overall reduction of acne activity evaluated by blinded assessment
- Average reduction:
  - papules 50-60%,
  - pustules 70-80%,
  - comedones 40-50%.
- Inflammatory papules showed reduction in erythema and size but not number at one week.
- At one month, however, a 50% reduction in number inflammatory lesions was noted.
- Pain was judged as minimal by immediate post-treatment survey. No blistering or pigmentation changes were observed.

Gold MH, Biron J. J Drugs Dermatol 2008; 7(2):139-145

EFFICACY OF A NOVEL COMBINATION OF PNEUMATIC ENERGY AND BROADBAND LIGHT FOR THE TREATMENT OF ACNE

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b. Director, Tennessee Clinical Research Center, Nashville, TN

Abstract

Introduction: A novel photopneumatic platform (Isolaz, Pleasanton, CA), combining vacuum pressure with a broadband light source device has been designed to attack multiple targets for the effective treatment of acne.

Objective: The objective of this study was to evaluate the safety and efficacy of photopneumatic technology for the treatment of mild to moderate acne vulgaris.

Methods: Eleven subjects (7 women) aged 15 to 54 years with skin types 1 to 4 presented with mild to moderate facial acne (defined as 15 or more facial inflammatory or noninflammatory lesions) were recruited to the study. All subjects underwent 4 photopneumatic treatments at 3-week intervals with follow-up visits at 1 and 3 months.

Results: Inflammatory lesion counts continued to decrease for at least 3 months after the final treatment. At 3 months, reductions in lesion counts were significant for both inflammatory (P=.0137) and noninflammatory (P=.0383) lesions. Mean scores between visits consistently dropped sharply from their immediate posttreatment values for pain, erythema, and edema. Nine subjects (82%) were moderately satisfied to very satisfied with treatment.

Conclusion: Results suggest that the photopneumatic device is a safe and effective modality for the treatment of mild to moderate inflammatory and comedonal acne vulgaris.

Clinical Study –
Gold and Biron – ASLMS 2008, AAD 2008

- Eleven Subjects, aged 15-54 years of age with mild to moderate acne vulgaris
- Four PPx treatments at 3 week intervals; follow-up at one and three months post last treatment
- Inflammatory acne lesion counts continued to decrease for at least the three months after the last treatment
- At 3 months:
  - Inflammatory lesion counts: 78% reduction (p=0.0137)
  - Non-inflammatory lesion counts: 57.8% reduction (p=0.0383)
  - Pain minimal with treatment
  - 82% moderate to very satisfied

PPx
Acne Study

After 4 treatments

PPx
Acne Study

After 4 treatments

PPx

Before

Post 1 treatment

PPx

Before

Post 1 treatment

J Drugs Dermatol 2009; 8(3):239-241.

Journal of Drugs in Dermatology

Photopneumatic Therapy for the Treatment of Acne

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a. Department of Dermatology, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand
b. Washington Institute of Dermatologic Laser Surgery, Washington DC

ABSTRACT

Background: A wide variety of laser and light-based therapies have been utilized for acne vulgaris; however, current techniques have been limited by photosensitivity issues or inconsistent results.

Objective: To determine the clinical efficacy and side-effect profile of photopneumatic therapy for the treatment of facial acne vulgaris.

Methods: Twenty adults with mild to severe facial acne vulgaris received 4 successive treatments at 2-week intervals with a combined photopneumatic device (intense pulsed light [IPL]: fluences=3.6-4.2 J/cm^2; negative pressure=3 psi). Clinical improvement was evaluated on a quartile grading scale using comparative digital photographs at baseline, and 1 month and 3 months after the final treatment. Acne lesion counts were obtained at baseline, prior to each treatment session, and at the end of the study.

Results: Modest reduction in acne lesion counts and global clinical improvement was seen in the majority of patients. Patients with severe acne experienced the most clinical improvement. Side effects were mild and limited to transient erythema and rare purpura. Most patients experienced acne worsening early in the treatment course.

Conclusion: Photopneumatic therapy is a safe and effective treatment for acne vulgaris. Patients with more severe acne respond best to treatment.

ADVA

- Solid-state 589/1319nm
  - ND Yag Diode Crystals
    - No Consumables

- Scanner Hand piece
  - Single spot or fractional
  - 1mm spot size
  - Multi-pattern up to 10x10mm
  - Both wavelengths delivered with the same hand piece

Treatments – 589nm

- Telangiectasia
- Spider veins, both facial and leg
- Rosacea
- Hemangiomas
- Port wine stains
- Venous lakes
- Red or hypertrophic scars
- Melasma
- Hyper pigmentation
- Skin rejuvenation

Treatments 1319nm

- Skin rejuvenation
- Reduction of acne scars
- Reduction in the appearance of pores
- Mild and moderate inflammatory acne vulgaris

Objective

Examine the safety and efficacy of a 589nm solid-state laser used for treatment of facial erythema.

Study performed by Dr. David Goldberg, 2018

Study Design

-- Single-center, prospective cohort of 30 patients

18 years or older

Fitzpatrick type I to IV

Varying degrees of facial erythema

-- 4 full face monthly treatments

Follow-up one month after 4th treatment

-- Erythema evaluation by investigator and participant using scale 0 to 4 (0 = no erythema; 4 = severe erythema)

-- Safety assessed by investigator-reported side effects

Treatment Parameters
10-15 J/cm^2 46 msec pulse duration Scanning hand piece

Baseline

1 month s/p 4 treatments

Baseline

After 3rd Treatment

Baseline

1 month s/p 4 treatments

Investigator assessment:

Baseline erythema grade	Final erythema grade:
Left side:	Left side:
Right side:	Right side:

Patient assessment:

Baseline erythema grade	Final erythema grade:
Left side:	Left side:
Right side:	Right side:

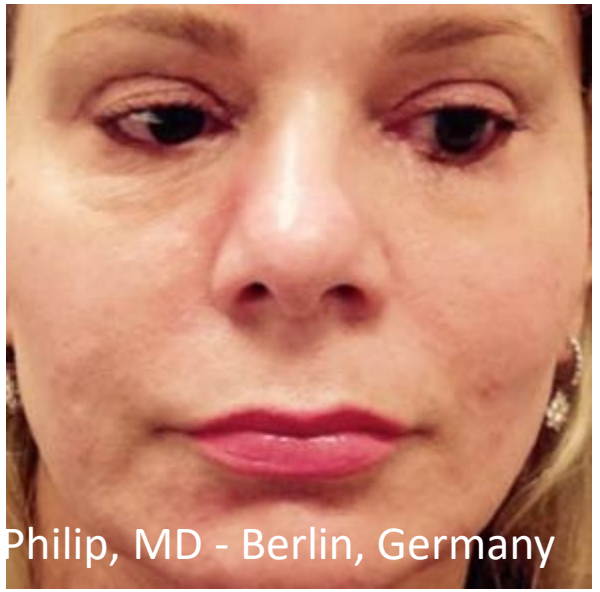
Safety

No complications were reported.

Conclusion

A new 589nm solid-state, non-rhodamine dye laser represents a novel approach for the treatment of facial erythema.

ADVATx Laser for Acne



Pre Treatment

Post 2 Treatments

Tx 1: 1st pass: 1319nm, 20 J/cm2, square pattern 10x10mm filling factor, pulse duration 38ms, scan time 2.6s
2nd pass: 589nm, 10 J/cm2, square pattern 10x10mm filling factor, pulse duration 34ms, scan time 3.2s

Tx 2: 1st pass: 1319nm, 22 J/cm2, square pattern 10x10mm filling factor, pulse duration 38ms, scan time 2.7s
2nd pass: 589nm, 12 J/cm2, square pattern 10x10mm filling factor, pulse duration 37ms, scan time 4s

ADVATx Laser for Acne

ADVATx Laser for Acne

AdvaTX – Each Tx 2 weeks apart

Before Tx

Post 1 Tx

Post 2 Txs

Post 3 Txs

Post 4 Txs

AdvaTX Laser Treatment

Before Tx

Post 1 Tx

Post 2 Txs

Post 3 Txs

Post 4 Txs

Background and Objectives for TCRC Study

- Facial acne scarring is a prevalent disease
  - Physical and psychosocial sequelae
- Innovative solid state, dual-wavelength laser investigated
  - 589/1319 nm
  - No consumables
  - No dye kits

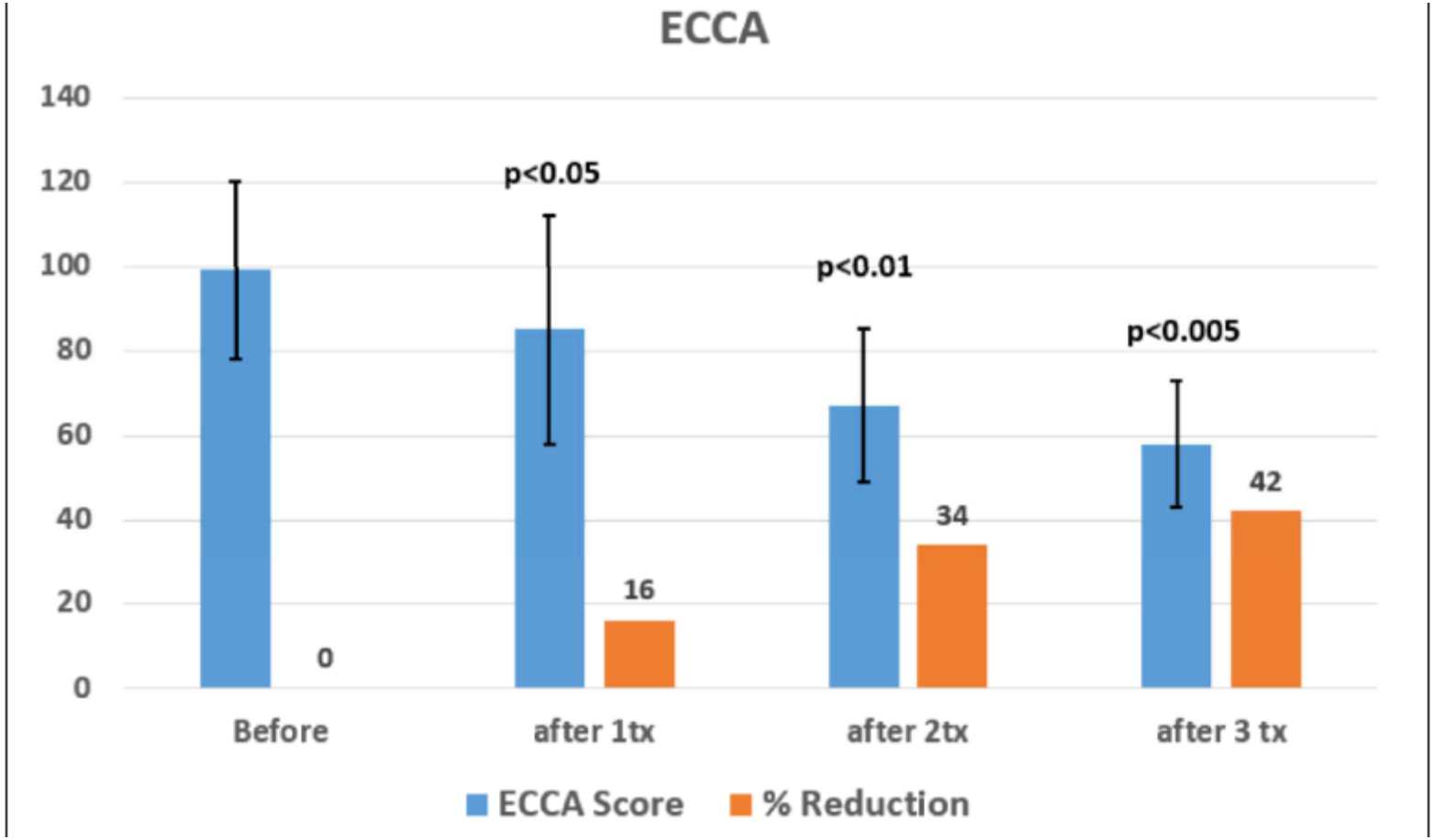
Study Designs/Materials/Methods

- 12 patients treated
  - 11 Female – 1 Male
  - Fitzpatrick skin types of II and III
  - Acne scars for more than 1 year
- 2 passes, both covering the entire face
  - 1319 nm and subsequently 589 nm
  - 3 sessions, 1 every other week
  - Full face covered in approximately 30 minutes
- Acne scars scored by one physician evaluator
  - ECCA grading scale
  - Before and 2 weeks after the final treatment
  - 3 and 6 month follow-ups after last treatment
- Safety
  - Recording subject discomfort scores
  - Adverse effects

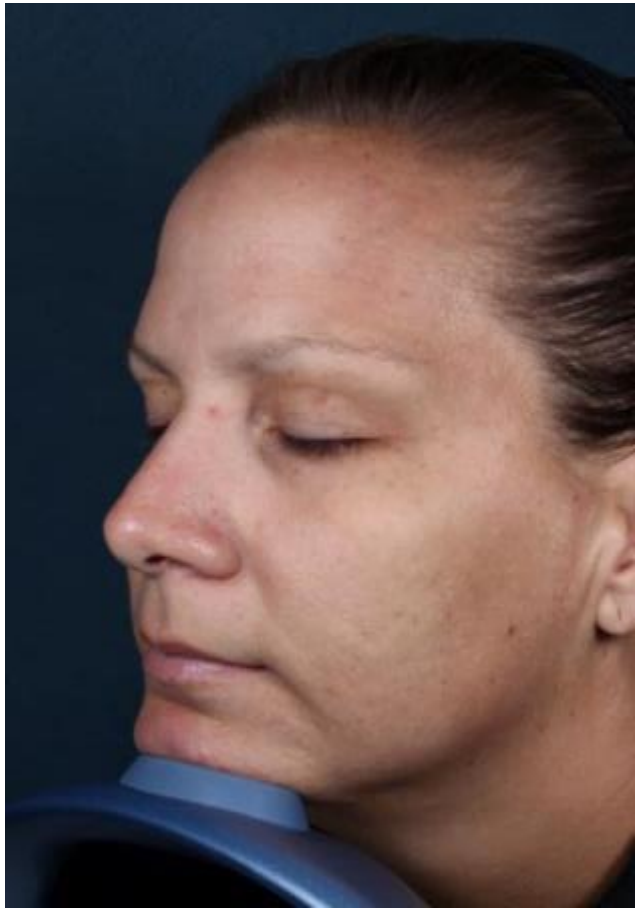
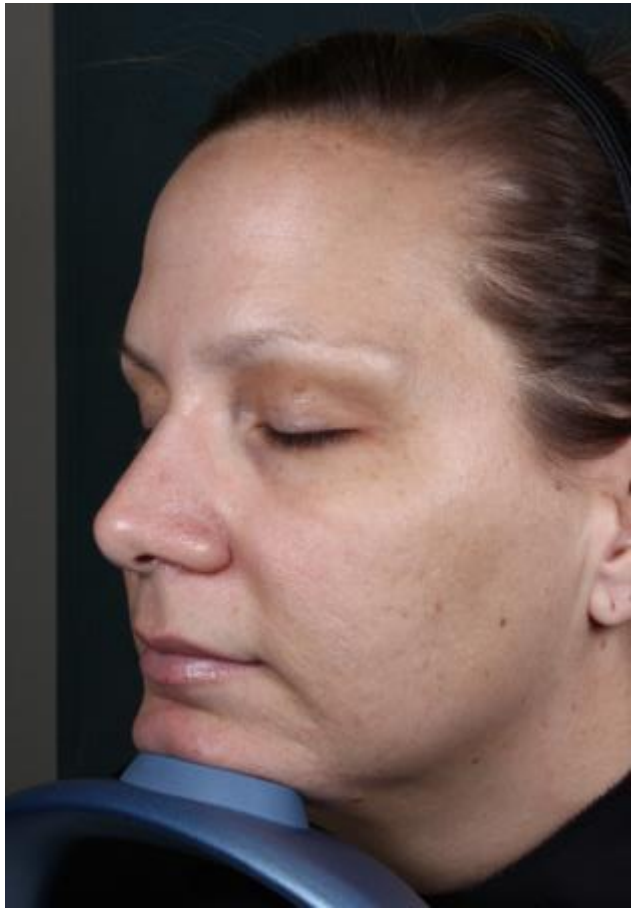
Results

- Fluence
  - 28 J/cm2 +/- 2.4 J/cm2 1319nm
  - 16 J/cm2 +/- 2.9 J/cm2 589 nm
- Baseline mean ECCA was 99 +/- 21
- 42% reduction in ECCA score after 3rd treatment
- One patient did not improve after 3 sessions
- Slight to moderate erythema sometimes observed
- No or minimal burning or stinging was reported
- No crust was observed

ECCA Scale


ECCA
140
120
100
80
60
40
20
0
p<0.05
p<0.01
p<0.005
0
16
34
42
Before
after 1tx
after 2tx
after 3 tx
ECCA Score
% Reduction

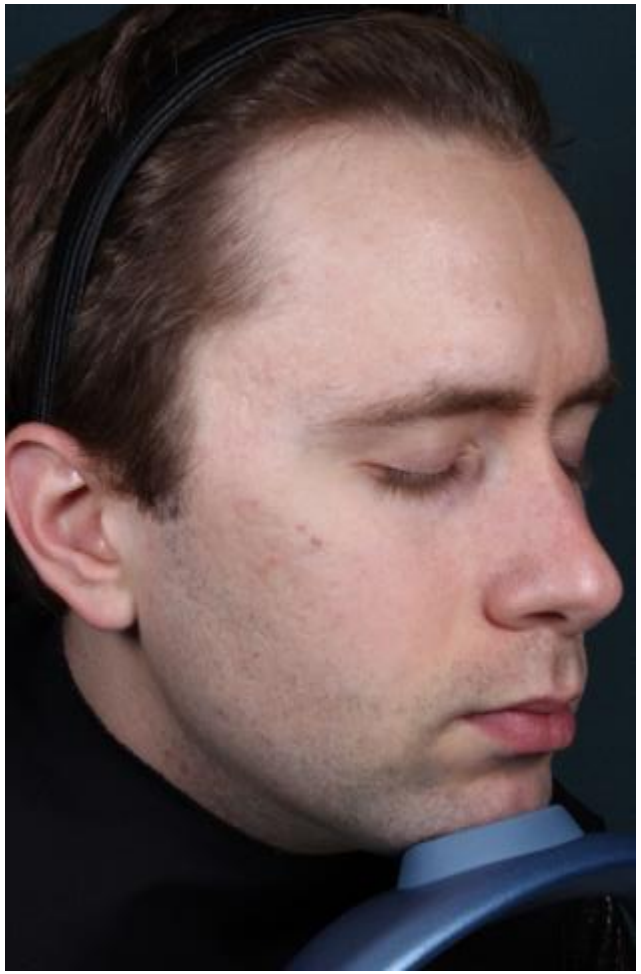
Before and After

Before and After

Baseline

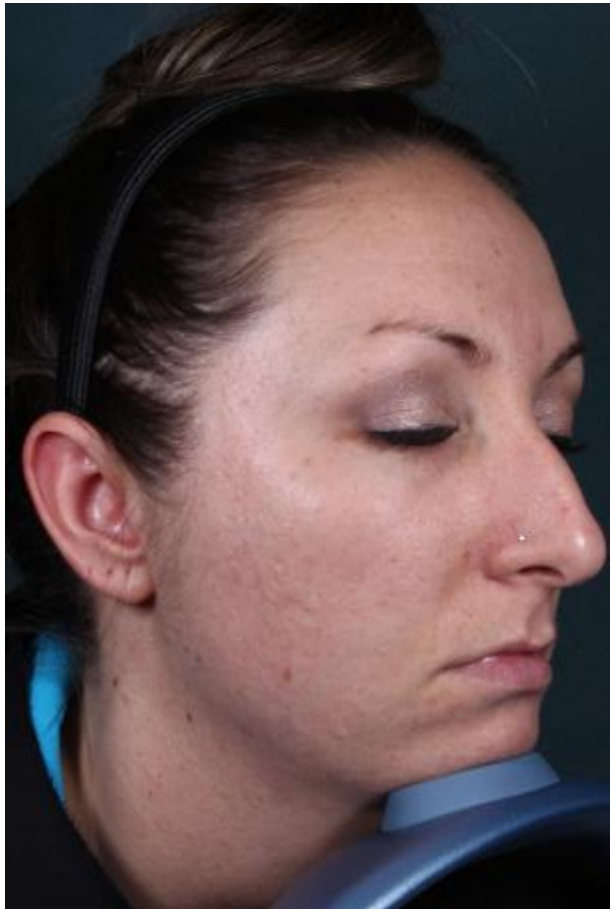
Post 3 Months



Post 6 Month

Advalight for acne scars

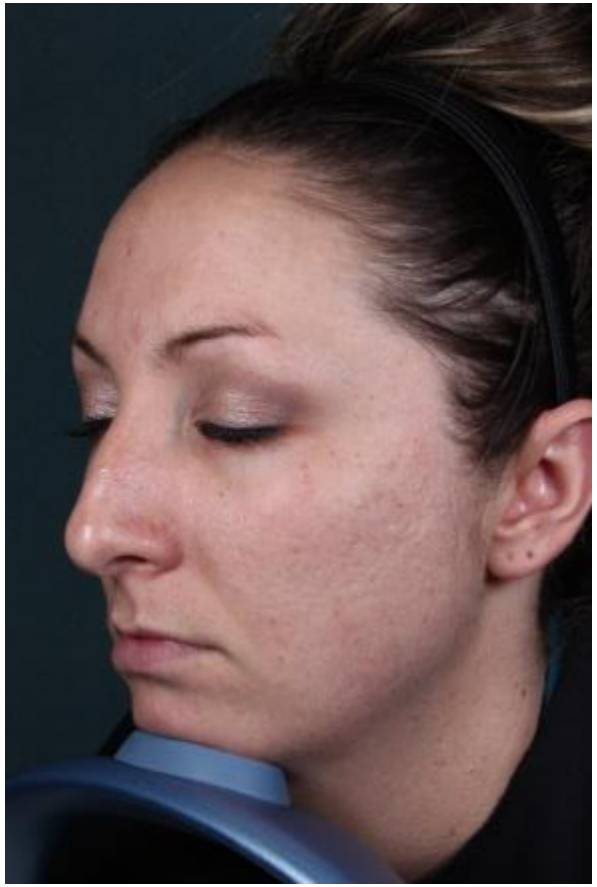
Baseline



Post 6 Month

Advalight for acne scars

Baseline



Post 6 Month

Treatment of Acne Scaring with a Novel Dual-Wavelength Laser
J Cosmetic Dermatol. 2019;18:1290-1293

ORIGINAL CONTRIBUTION

JCD Journal of Cosmetic Dermatology | WILEY

Treatment of acne scarring with a novel dual-wavelength laser

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Funding information
Advalight, San Diego, CA, USA

Abstract

Background: Facial acne scarring is a prevalent disease with both physical and psychosocial sequelae.

Aims: This study aims to evaluate an innovative solid state dual wavelength 1,319 and 589 nm laser, which does not require consumable dye, for the treatment of acne scars.

Patients/methods: A total of 12 patients (11 female, 1 man - Fitzpatrick skin phototypes II & III) with acne scar for more than one year, were treated with 1,319 nm and subsequently by 589 nm, all having four-sessions, one every other week. A full face was covered in approximately 30 minutes. Acne scars were scored by one physician evaluator using the ECCA grading scale before, 2 weeks after each treatment and 1 month and 6 months after the 4th treatment. Safety was measured by recording subject discomfort scores and adverse effects.

Results: 12 subjects were enrolled into the study, 10 completed all 4 treatments and 2 were lost to follow up. Fluence used was 28 J/cm² ± 2.4 J/cm² at 1,319 nm and 16 ± 2.9 J/cm² at 589 nm. At baseline, mean ECCA score was 98 ± 23. This score was reduced to 88 ± 30 ($p<0.02$), after one session, to 68 ± 21 ($p<0.01$) after 2 sessions, to 58 ± 17 ($p<0.01$) after 3 sessions to reach 58 ± 15 ($p<0.01$) 1 month after the 4th and finally 66 ± 11 ($p<0.01$) at 6 month follow up. This observation corresponds respectively to 14%, 33 %, 42 %, 40% and 30% reduction of the ECCA score. Only one patient (ECCA score: 120) did not improve after 3 sessions. Slight to moderate erythema was sometimes observed without dryness or bruising. No or minimal burning or stinging was reported. No crust was observed.

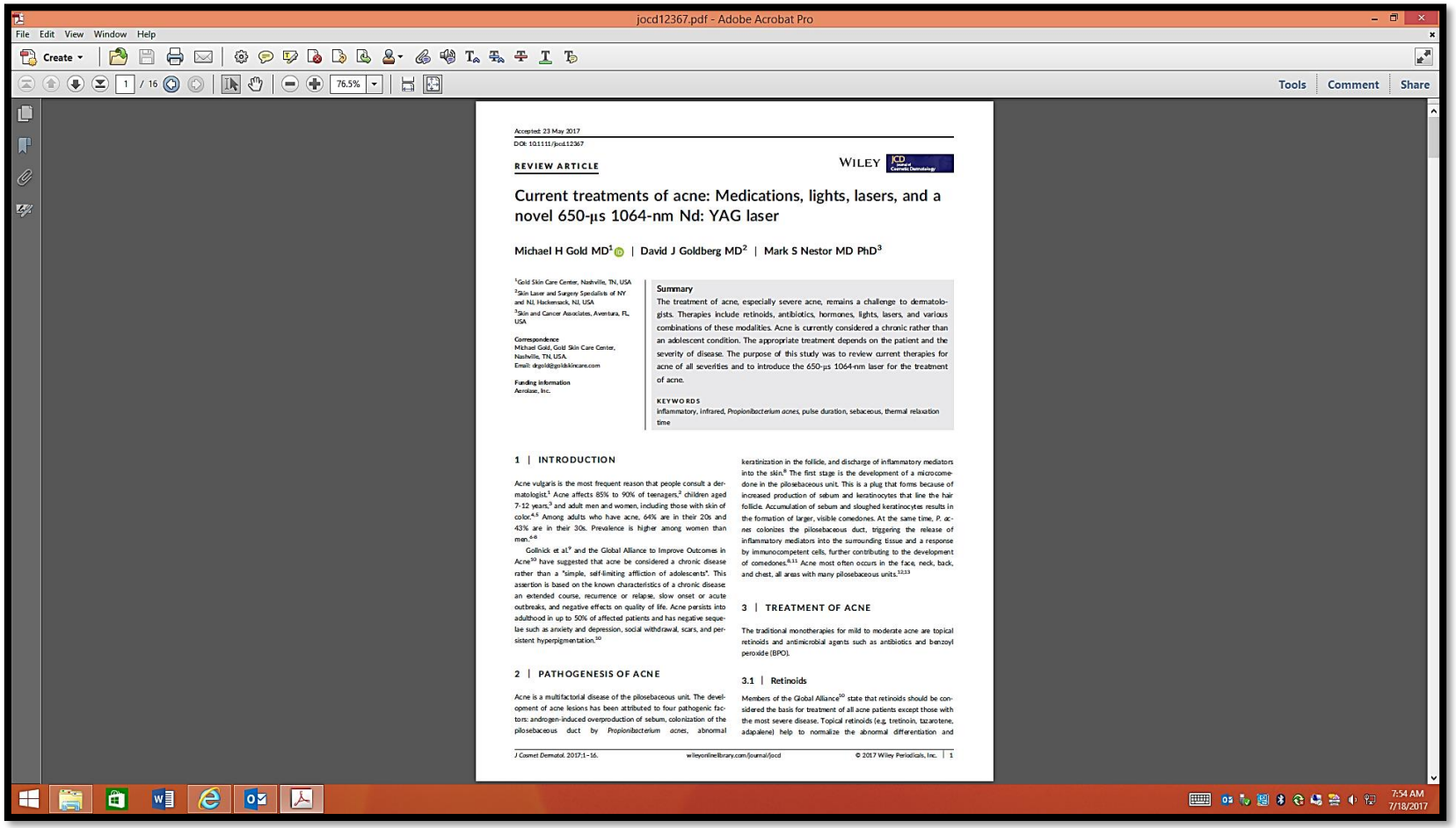
Conclusion: Improvement in scarring was noted in almost all patients with minimal discomfort and minimal downtime. Combining both minimal side effects with effective acne scar reduction, this laser appears to be highly effective. Long-term evaluation remains necessary to confirm the efficacy of this new laser.

KEYWORDS
acne, ECCA, near-infrared laser, scarring, yellow laser

LightPod Neo

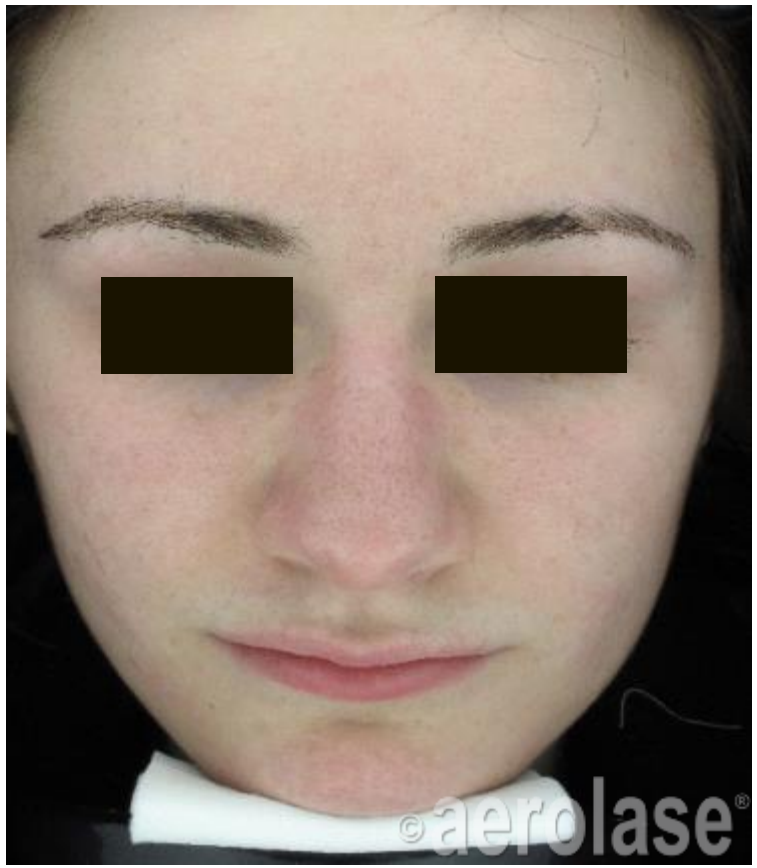
- 650-microsecond technology for up to 255 J/cm2 in a single pulse duration
- More than 50 FDA cleared medical aesthetic indications
- Ability to perform anesthetic, gel & skin contact free treatment on all skin types
- Eliminates pain, burns or adverse effects of the previous generation of lasers
- No costly service contracts

Current treatments of acne: Medications, lights, lasers, and a novel 650-µs 1064-nm Nd: YAG laser
J Cosmet Dermatol 2017:1-16



Neo Treatments Before and After

- Before



- 3 Mos. After 5th Treatment

Neo Treatments Before and After Photos

- Before

- After 4th Treatment

Neo Treatments Before and After Photos

- Before

- 1 Month After 4th Treatment

Neo Treatments Before and After Photos

- Before

- After 3rd Treatment

Neo Treatments Before and After Photos

- Before
- After 2nd Treatment

Neo Treatments Before and After Photos

- Before

- After 3RD Tx

Neo Treatments Before and After Photos

Before Treatment Post 2 Treatments – 4 weeks apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Neo Treatments Before and After Photos

Before Treatment

Post 4 Treatments, 4 Weeks Apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Neo Treatments Before and After Photos

Before Treatment

Post 1 Treatment – 2 weeks apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Neo Treatments Before and After Photos

Before Treatment

Post 1 Treatment

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Neo Treatments Before and After Photos

Before Treatment

Post 2 Treatments – 4 weeks apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Neo Treatments Before and After Photos

Before Treatment

Post 11 Treatments – 1 week apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Neo Treatments Before and After Photos

Before Treatment

Post 11 Treatments – 1 week apart

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Patient Satisfaction in a Minimally Invasive Laser Practice with Aerolase

Treatment: Acne Clearance
Presenter: Michael Gold, MD

BEFORE

AFTER 2nd Tx

Fluence: 28 j/cm^2 **Pulse Width:** 0.6msec **Spot Size:** 6mm **Passes:** 3 **Skin Type:** II

Treatment Notes: Mode 8. Patient received two treatments over a 4 week period.

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Aerolase Before and After Tx

Before Treatment

6 treatments post 13 months

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

Aerolase Before and After Tx

Before Treatment

6 treatments post 13 months

Photos Courtesy of Michael H. Gold, MD
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Aerolase Before and After Tx

Before Treatment

6 treatment post 13 months

Photos Courtesy of Michael H. Gold, MD
Gold Skin Care Center, The Laser and Rejuvenation Center, Nashville, TN

TREATMENT OF MODERATE TO SEVERE ACNE AND POST ACNE SCARS WITH 650 MICROSECOND 1064nm LASER COMBINED WITH LOW DOSE ISOTRETINOIN

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Background and Purpose

It is well documented that using isotretinoin for acne therapy can delay the repair of skin scar tissue and, therefore, the use of laser and phototherapy in patients receiving retinoid therapy is relatively contraindicated.

Traditionally, it is believed that these procedures should be postponed for at least 6-8 months after the end of systemic therapy with isotretinoin.

Modern revision of treatment protocols, safer, more effective lasers, and the transition to lower dosages have made it possible to reduce the likelihood of side effects in combination therapy, which is important for the timeliness of treating post-acne scars and the prevention of their occurrence.

This study was completed to determine the safety, efficacy, and tolerability of a combining a 650 Microsecond 1064nm laser with low dosages of isotretinoin for the treatment of moderate to severe acne and post-acne scars.

Materials and Methods

Patient Selection

- 28 Females and 18 Males aged 18-29, Fitzpatrick Skin Phototypes I-III with moderate to severe acne (up to 20 papulopustular elements) complicated by atrophic scars.
- All patients included underwent genetic analysis revealing the polymorphism of genes Col1A2, MMP3, ESR1, MMP1, MMP7, which can lead to the appearance of scars
- IGA parameters before therapy averaged 1.8 ± 0.2 points
- Dermatology Life Quality Index (DLQI) before treatments averaged 10.1± 1.3 points

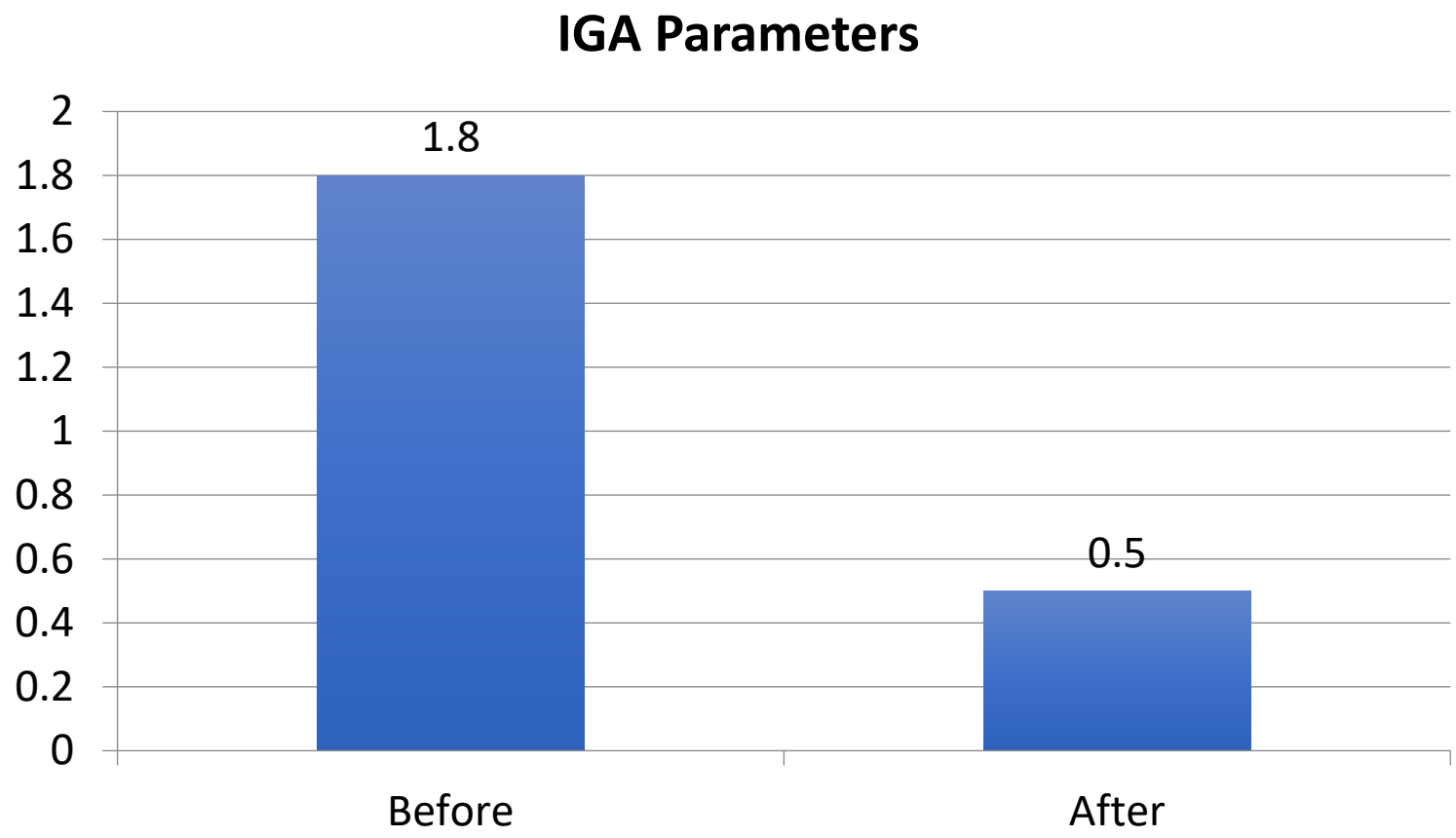
Treatment Protocol

Treatment Protocol

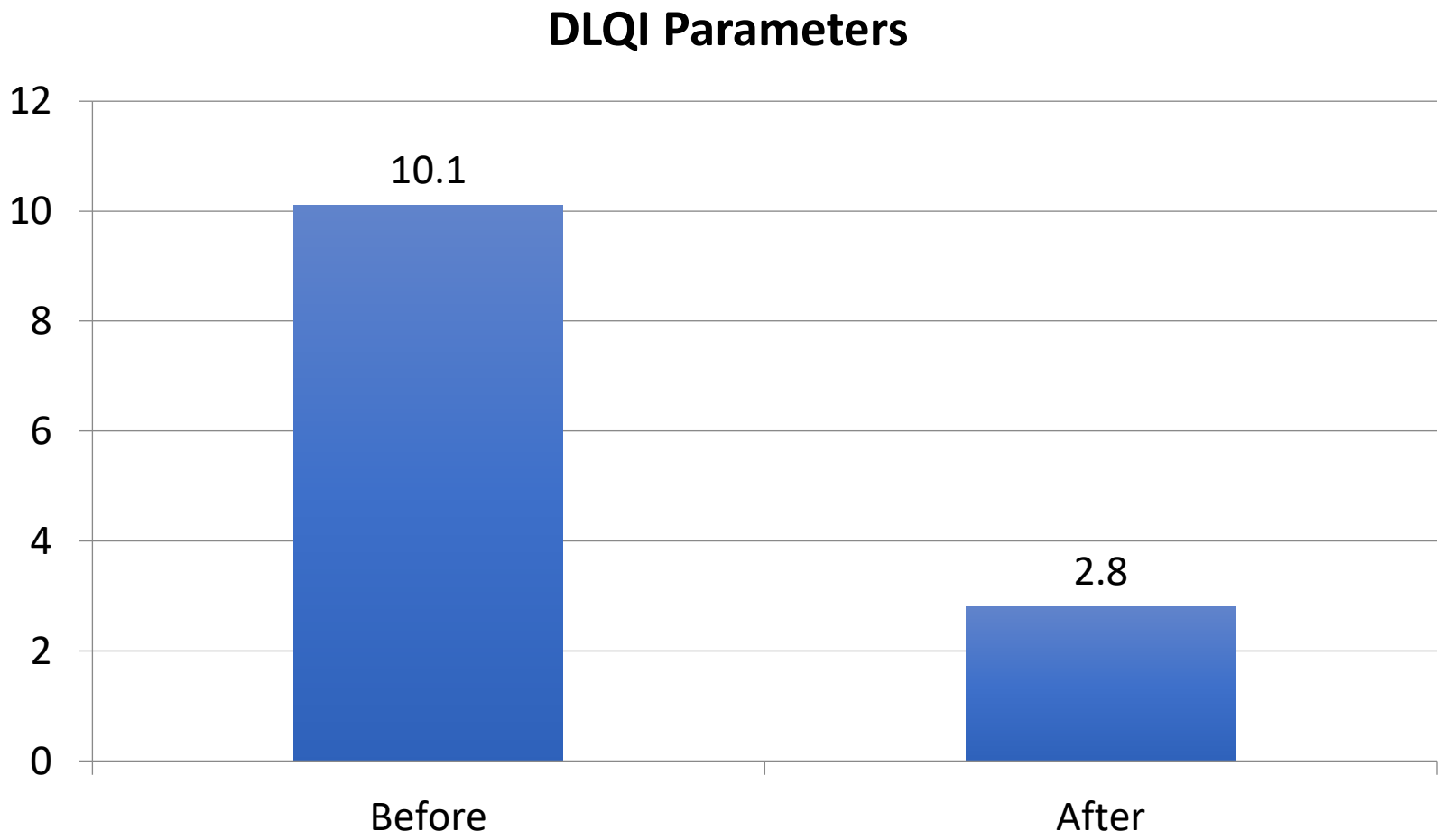
All patients underwent combination therapy:

- Systemic use of isotretinoin at a low dosage of 0.2 – 0.3 mg/kg/day for 6 months
- 12 laser procedures performed at 2 week intervals with a 650 microsecond 1064nm laser, pulse duration of 650µsec, fluence of 21 J/cm2, spot diameter of 6mm

Results: IGA Parameters



Results: DLQI Parameters



Results

Before and After 12 Laser Treatments in Combination with Low Dose Isotretinoin

Results

Before and After 12 Laser Treatments in Combination with Low Dose Isotretinoin

Results

Before and After 12 Laser Treatments in Combination with Low Dose Isotretinoin

Results

Before and After 12 Laser Treatments in Combination with Low Dose Isotretinoin

Results

Before and After 12 Laser Treatments in Combination with Low Dose Isotretinoin

Results

- During the study, it was noted that the resolution of inflammatory elements occurred without scarring
- Increased sensitivity of the skin to laser radiation and the deterioration of the repair process of the skin was not observed
- Tolerability was high

Conclusions

- Use of combination therapy is pathogenetically warranted, especially for patients who are genetically prone to the formation of post-acne scarring
- A 650 microsecond 1064nm laser is effective at stimulating neocollagenesis without the risk of excessive heating of the skin or pain
- Pathological scarring in acne was not observed. Improvement of preexisting acne scars was noticeable.
- Combination therapy of a 650 microsecond 1064nm laser and isotretinoin at a low dosage (0.2-0.3 mg/kg/day) is safe, effective, and tolerable.