IADVL SIG
LASERS AND AESTHETICS NEWSLETTER
(IADVL ACADEMY)

Editors

Dr. Shehnaz Arsiwala | Dr. Sanjeev Aurangabadkar | Dr. Abhishek De

E-Newsletter Issue 02, Sep 2015

IN THIS ISSUE

- Message from SIG Lasers and Aesthetics Convener
  Dr. Shehnaz Arsiwala
- Comparison of Q Switched Lasers
  Dr. Sanjeev J Aurangabadkar
- Paradoxical Hair Growth Following Laser Hair Removal
  Dr. Anil Ganjoo
- High Intensity Focused Ultrasound (HIFU): The Latest Armamentarium in Aesthetic Practice
  Dr. Ankur Talwar
- Creating Awareness through Patient Education
  Unethical and Commercial Practices in Application of Laser for Treatment of Various Skin Conditions—Beware!!!!
  Dr. Khatri Gayatri, Dr. Venkatram Mysore
- Mark Your Calender
  Team SIG- Lasers and Aesthetics
- Photogallery
  IADVL Academy- SIG Lasers and Aesthetic Activites (June To Sep 2015)
- Cryo Lipolysis: What To Expect
  Dr. Sachin Dhawan
- Periorbital Rejuvenation with Fillers
  Dr. Shehnaz Arsiwala
- Intradermal Injection of Botulinum Toxin for Facial Fine Lines: A Popular yet Controversial Technique
  Dr. Abhishek De

MESSAGE FROM SIG LASERS AND AESTHETICS CONVENER

Dr. Shehnaz Arsiwala MD

Consultant Dermatologist, Cosmetic Dermatosurgeon and Laser Specialist

Saifee Hospital, Prince Aly Khan Hospital, Mumbai, Maharashtra, India

Convener, IADVL- SIG- Lasers and Aesthetics

Associate Editor, Journal of Cutaneous and Aesthetic Surgery

The IADVL-SIG Lasers and Aesthetics group was incepted in the year March 2013 with a road map to upgrade skills in the lasers and aesthetics procedures to the various IADVL members across the country .The coordinator's post was assigned to Dr. Sanjeev Aurangabadkar for the execution of activities and under his guidance and myself as the convener, our group of 8 core members took up the reigns of this SIG. With full support from IADVL Academy, we started academic activities pertaining to lasers and aesthetics training, learning, teaching, sharing and upgrading skills of various members of IADVL through sessions and workshops in conferences.

The following activities are some of the successful academic achievements of our SIG which were possible only with great support from the entire SIG team, our President Dr. Venkataram Mysore, our Hon. Secretary- Dr. Rashmi Sarkar, Dr. Ameet Valia and Dr. Manas Chatterjee, and Past Convener and Chair- Dr. Shyamantha Barua and Dr. Arun Inamdar who supported us wholeheartedly.

Consent forms for various lasers and aesthetics procedures were prepared by the team and are available on IADVL website and App for ready use by members.

Patient education leaflets for various lasers and aesthetics procedures were prepared by the team and are also available on website to all IADVL members.

SIG was entrusted with responsibility of designing and conducting laser session in Dermacon 2015 at Mangalore and Cuticon- IADVL Maharashtra conferences and laser symposia at Pune which were appreciated.

Our SIG team has successfully conducted 5 laser and aesthetic workshops across multiple states in the country since May 2015, along with various state branches as envisioned by our President and a project of IADVL Academy- a giant multistate presidential venture. For the first time in the history of IADVL, so many workshops are being done in one Calendar year. This task is an unprecedented and unique module with cooperation of state branches, laser companies and SIG. These were IADVL certified workshops at Hyderabad, Belgaum, Bhopal, Madurai, Lucknow and the laser workshops and conducted at a very nominal registration fee of Rs 1000 only and were attended by numerous delegates and PG students who had an opportunity to learn through live and video demonstrations of various procedures from experts in the field of lasers and aesthetics. There are 5 more workshops lined up in coming months at Bangalore, Nagpur, Kottayam and Kolkata at the end of which around 2000 delegates will attain benefit from this IADVL certified workshop projects.

The newsletter aims at bringing home expert viewpoints on newer technologies and interventional therapies from experts in the fields of both lasers and aesthetic dermatology.

I hope you will enjoy reading this second issue compiled by us.

Long Live IADVL

TEAM SIG- LASERS AND AESTHETICS

COMPARISON OF Q SWITCHED LASERS

Dr. Sanjeev J Aurangabadkar

Co-ordinator, SIG- Lasers and Aesthetics

Skin & Laser Clinic

Begumpet, Hyderabad, Telangana State, India

Lasers play an important role in aesthetic and medical dermatology & pigmented lesions and tattoos remain a primary target for laser therapy in practice. Apart from lasers for hair removal and ablative lasers, pigment specific lasers such as Q switched lasers (QSL) have become a necessity in one's practice. These lasers target the melanosomes and tattoo ink particles selectively, sparing surrounding structures, thus avoiding collateral thermal damage. These lasers in addition to selective photothermolysis also produce their effect by another unique mechanism, namely photomechanical and photoacoustic effect. Upon QSL irradiation (pulse duration in nanoseconds) shock waves are produced,t leading to thermal fragmentation in the given target. These are either eliminated transepidermally or cleared by the lymphatics to regional lymph nodes. These days, QSL is being used in lower fluences (based on the concept of subcellular selective photothermolysis) thus, leading to rupture of micro-organelles such as melanosomes without destroying the keratinocytes/melanocytes or macrophages. This also leads to dendritectomy preventing transfer of melanosomes from melanocytes to keratinocytes. This has opened new vistas to treat difficult cases such as melasma, etc.

To minimize inflammation and thermal build up, QSL have also been developed with fractional hand piece for the purpose of rejuvenation (non, ablative remodeling) wherein the laser beam is split into micro beams allowing only a part of the skin to be treated.

Traditionally, QSL used include Q switched ruby 694 nm, Q switched Alexandrite 755 nm and Q switched Nd:YAG (QSNY) 1064 and 532 nm lasers. Of these the QSNY is most suited for darker skin types due to its longer wavelength. SQNY remains the work-horse system in India and many different models are available. The key to selection of a QSNY includes thorough evaluation of the following parameters:

- Pulse duration-shorter the better
- Peak power-higher the better
- Spot size-variable spot size from 2 mm till 8-10 mm necessary
- Beam profile-should have top-hat beam profile
- Beam delivery system-Direct delivery better than articulated arm delivery

Newer wavelengths are being added such as 595 nm and 660 nm using solid dye kits aiding in targeting of vascular components in skin. Quasi-long pulse QSL with pulse width of 300 microseconds have also been developed which are showing promise in management of acne scars, hypertrophic scars and keloids, etc.

A novel development in the treatment of pigmented lesions and tattoos is the picoseconds alexandrite and Nd:YAG lasers. These lasers have even shorter pulse durations and thus, deliver higher peak power and have an important role in tattoo removal, particularly the difficult to treat multi-colored professional tattoos. Reports suggest them to be useful for blue-green tattoos where nearly 100% removal has been achieved.

With such varied machines and technology at their disposal, dermatologists have had the opportunity to specifically manage pigmented lesions and tattoos in dark skin better than ever before with minimal adverse effects.

System	Pulse duration	Frequency	Spot Size and Max. Energy for 1064nm			Spot Size and Max. Energy for 532nm			Merge
Palomar	2.5ns	1-10 Hz	2mm 12.5J	4mm 4.2J	6mm 1.6J	2mm 12.5J	4mm 4.2J	6mm 1.6J	Possible
Quanta	5ns	2,5,10 Hz	2.5mm 30J	3.5mm 22J	6mm 8J	2.5mm 10J	3.5mm 7J	6mm 2J	---
VersaQS	5ns	1-10hz	2mm 15.9J	4mm 3.95J		2mm 9.54J	4mm 2.37J		---
Precise PY 500 A	6ns	1-5 Hz	Spot size variable with distance Maximum energy 450mj			Spot size variable with distance Maximum energy 300mJ			-----
Medlite C6	5-20ns	Single shot, 1, 2, 5, and 10 Hz	1064 nm 12.0 J/cm2 @ 3.0 mm spot size			532 nm 5.0 J/cm2 @ 2.0 mm spot size			
Harmony XL	20ns	1,2,5 Hz	1064nm Spot sizes 532nm 1,2,3,4,5,6 Energy density 400-1200mJ/pulse			Spot sizes 2,3,4,5 Energy density 400-1200mJ/pulse			
Cosjet ATR			1J/cm2 1064nm			0.5 J/cm2 532nm			Auto calibration, PTP mode, optional fractional handpiece and dye handpiece
Tri-Beam, Jeysis	5-10ns, 300microsec Quasilong pulse		1.6J/cm2 1064nm			0.5J/cm2 532nm			Zoom collimated and fractional HP and 585 and 650nm dye HP
Picosure, Cynosure	550-750 Picosecond		165-200mJ Alex 755nm and 532nm						
Lucas, AMT engineering	5-10ns, 300 microsecond		1000mJ, 2500mJ, 400mJ						
Alex, TriVantage Candela	50ns		2,3,4 mm spot Alex 18J/cm2 2,3,5 mm Spot Nd:YAG						
Helios	10ns	1-10Hz	1 - 7mm Zoom collimated			1J, 1064, 0.5 mJ/cm2, 532, quasi long 2J			
Spectra, Lutronic	5ns	1-10 Hz	1-8mm Zoom collimated 1.2J/cm2 1064nm			400mJ/cm2 532nm			Quasi-long pulse 300 microsecond, 585nm and 650nm Dye HP
Pico, Quanta	375ps and 450ps 6ns	1,2,5,10 Hz	0.8J/cm2 1064nm 2,4,6,8mm round HP 2x2,3x3,4x4,5x5 Square HP			0.4J/cm2 532nm 2,4,6,8mm round HP 2x2,3x3,4x4,5x5 Square HP			Picosecond, Q-Switched, Opti-Pulse (double pulse) and Photo-Thermal mode (Free Running).

Suggested Reading

- Aurangabadkar S, Mysore V. Standard guidelines of care: Lasers for tattoos and pigmented lesions. Indian J Dermatol Venereol Leprol 2009;75(Suppl 2):111-26.
- Shah SD, Aurangabadkar SJ. Newer trends in laser tattoo removal. J Cutan Aesthet Surg 2015;8:25-9.
- Luebberding S1, Alexiades-Armenakas M. New tattoo approaches in dermatology. Dermatol Clin. 2014 Jan;32(1): 91-6.

PARADOXICAL HAIR GROWTH FOLLOWING LASER HAIR REMOVAL

Dr. Anil Ganjoo MD

Senior Consultant, Dermatovenereologist and Laser Surgeon

Ex-President, IADVL, Delhi

Member, SIG Lasers And Aesthetics

Laser hair removal is a safe and effective procedure to get rid of the excessive unwanted hair on the body. Over the last two decades, since LHR is in vogue, enormous advances have happened in the understanding of laser tissue reactions and thus, the clinical outcomes and side effect profile has improved drastically.

Nonetheless, side effects do happen particularly in our type of dark skins. One of the rare side effects in paradoxical hypertrichosis.

- Paradoxical hypertrichosis is a rare phenomenon and has been reported in 0.6 to 10 % of the cases in different studies.
- It has been seen with all types of lasers and light devices used for LHR.
- Patients report exaggerated hair growth in the areas around the treated area after 4 to 5 sessions of LHR.
- The hair are typically long and thin.
- This is particularly seen in darker skins ranging from type IV to type VI.
- It has been reported more commonly in those with an underlying hormonal discrepancy.
- The areas commonly involved include the sides and lower areas of the neck and the face.
- The exact cause of this phenomenon is not known. Following explanations have been put forward.
    - Use of sub optimal doses of laser light leading to induction of dormant follicles in the surrounding area.
    - Release of inflammatory mediators in the treated area leading to induction of growth in the surrounding areas.
    - Inadequate cooling of the treated and adjacent areas.
    - Direct light synchronized hair growth cycles by first damaging exposed anagen follicles. Next, a new follicular rhythm in unexposed dormant hair follicles. Since hair growth in surrounding areas is now synchronized, overall hair density appears to be greater compared to previous asynchronous hair growth.
- Thus preventive measures would include-
    - Use of optimal cooling in the treated and surrounding areas.
    - Use of optimal fluences that are adequate to cook the hair follicle but less than those that can burn the skin.
- Treatment of paradoxical hair growth following LHR consists of lasing the affected area with adequate fluences.

Further Reading

1. Bedewi A. Hair removal with intense pulsed light. Lasers Med Sci 2004; 19: 48–51.
2. Moreno-Arias GA, Castelo-Cranco C, FerrandoJ. Side-effects after IPL photodepilation. Dermatol Surg 2002; 28: 1131–4.
3. Moreno-Arias GA, Castelo-Cranco C, FerrandoJ.Paradoxical effect after IPL photoepilation. Dermatol Surg 2002; 28: 1013–6.
4. Sadick NS, Weiss RA, Shea CR, Nagel S, Nicholson J. Long- term photoepilation using a broad spectrum intense pulse light source. Arch Dermatol 2000; 136: 1336–40.
5. Raulin C, Greve B, Grma H. IPL technology: A review. Lasers Surg Med 2003; 32: 78–87.
6. Alajlan A, Shapiro J, Rivers J, MacDonald N, Wiggin J, Lui H. Paradoxical hypertrichosis after laser epilation. J Am Acad Dermatol 2005; 53: 85–8.
7. Desai S et al, Paradoxical hypertrichosis after laser therapy: A review. Dermatol Surg. 2010;36(3):291-8

HIGH INTENSITY FOCUSED ULTRASOUND (HIFU): THE LATEST ARMAMENTARIUM IN AESTHETIC PRACTICE

Dr. Ankur Talwar MD

Consultant Dermatologist

Talwar Skin Institute, Lucknow, UP, India

Introduction

Non-ablative Rejuvenation (NAR) lasers have become popular tools in the treatment of facial laxity and wrinkles. NAR devices have been designed to induce thermal injury within the dermis while sparing the overlying epidermis. NAR devices in use include intense pulsed light, radiofrequency (RF), neodymium-doped yttrium aluminum garnet (Nd:YAG), and pulsed dye lasers. Although the incidence of adverse effects is lowest with NAR, cosmetic improvements are subtle and inconsistent, and NAR often requires serial treatments over a 6- to 12-month period.[1]

Recently, high-intensity focused ultrasound (HIFU) technology is being used for performing non-invasive body sculpting by disrupting unwanted adipose cells. For many decades, HIFU has been investigated as a tool to treat solid benign and malignant tumors and is now emerging as a potential non-invasive alternative to conventional therapies.

Principle

The technique delivers energy across the skin surface at a relatively low intensity, but brings this energy to a sharp focus in the subcutaneous fat. The focusing of the ultrasound beam at specific depths beneath the epidermis, combined with proprietary application techniques, results in adipose tissue disruption. A high degree of focusing allows ultrasonic energy to pass through the skin and intervening tissue layers above the focal zone at an intensity low enough not to cause undue heating in them. The high intensity in the focal zone, enhanced by non-linear effects, resulting in a high heating rate and coagulative necrosis; if treatment parameters are chosen appropriately. There are 2 mechanisms that result in ablating the adipose

tissue. One is mechanical effect that disrupts the cell membranes immediately. The other mechanism is heat that destroys additional fat cells at temperatures above 58°C, and occurs in the focal spot of HIFU. The result is coagulative necrosis and almost immediate cell death within the targeted area, while the surrounding tissue remains mostly unaffected.[2]

Once adipocytes have been disrupted, chemotactic signals activate the body's inflammatory response mechanisms. Macrophage cells are attracted to the area to engulf and transport the lipids and cell debris. Most of the destroyed adipocytes are resorbed within 12 weeks after treatment and 95% are resorbed after 18 weeks. This results in an overall reduction in local fat volume. These changes occur with no significant increases in plasma lipids.[3] This results in an overall reduction in local adipose tissue volume.

In contrast to HIFU, other technologies like radiofrequency and microwave radiation capable of penetrating deeply into tissue cannot be easily focused because of the resultant long wavelengths. External lasers can be focused easily, but absorption of light energy severely limits the depth of penetration. Ultrasound is unique in that the penetration depth can be freely selected with the choice of frequency, and precise focusing can be easily achieved with a small handheld transducer. The ability of HIFU to be focused in tissues near the skin surface with minimal penetration contributes to its safety.[4] High-frequency waves with approximately 1-mm wavelengths make it easy to focus the ultrasonic beam, with a small transducer focused either internally or with a separate lens. At 2 MHz, a tightly focused HIFU beam creates a lesion in adipose tissue about 1 mm in diameter and 10 mm in length.

Technique

For body sculpting, thermal HIFU focuses energy adequate for ablation of targeted adipose tissue using ultrasonic waves at a frequency of 2 MHz and an intensity exceeding 1,000 W/cm2. Findings have identified 2 MHz as the optimal HIFU frequency for body sculpting, which is capable of disrupting adipocytes and contracting collagen fibers to tighten skin.[5] High-intensity focused ultrasound energy can easily reach intensities greater than 1,000 W/cm2 at the focal point while remaining at only 1–3 W/cm2 at the skin surface. Thus, heat sufficient for ablation of adipose tissue is generated only at the point where the focused beams converge, combining their energy.[6] This ensures that tissue lysis will be confined to the treatment zone.

Application of HIFU at a frequency of 1 MHz to adipose tissue leaves collagen fibers intact, but at a frequency of 2–3 MHz, diffuse contraction of collagen fibers has been observed. Histology performed after the procedure has confirmed that HIFU disrupts or denatures collagen fibers, resulting in new collagen formation accompanied by a general tightening of the septal fibers and skin. The dual tissue response represents an important difference in mechanism of action between HIFU and non-thermal mechanical ultrasound.

Possible side effects are sensations of prickling, tingling, warmth, heat, discomfort, or pain during treatment, and temporary erythema, ecchymosis, discomfort, paresthesia, and edema after treatment. Because of the noninvasive nature of HIFU therapy, patients require no recovery time. In addition, there is no need for general anesthesia and no risk of severe post-treatment complications, such as infection.

Results

The system has been used for ablation of adipose tissue in the abdomen, waist, hips, outer and inner thighs, and buttocks, and in male breast hypertrophy. Patients receiving HIFU should have a body mass index less than 30 kg/m^2 and an adipose tissue depth at least 1 cm beyond the focal point at the intended treatment site. The procedure typically involves two or three passes over the treatment area, with each pass taking 15 to 20 min, for a total treatment time of 45 min to 1h.

The clinical response typically is evident within 2 weeks and complete within 3 months. In two published retrospective chart reviews, 367 patients who received a single HIFU treatment to the abdomen and flanks had mean reductions in waist circumference ranging from of 4.2 to 4.7 cm 12 weeks after the procedure.[7]

In another study, HIFU applied to the abdomen and flanks, with a mean energy dose of 137 J/cm^2, divided in 2 passes and 2 different focal depths resulted in a mean waist circumference reduction of 4.7 cm.

In another study of 22 patients using the HIFU technology for the face, 77% (n=17) of patients reported much improvement of nasolabial folds, and 73% (n=16) reported much improvement of the jaw line.

Available devices

Ulthera™ is one of the first devices approved by the FDA for use in the US for facial rejuvenation. The hand piece contains a transducer which allows imaging the treatment region before delivering a series of ultrasound exposures for treatment.

The device contains the following three hand pieces (in order of most-superficial focus to deepest focus within tissue:

1. Superficial, 7.5 MHz with a focal depth of 3.0 mm; used for treatment of forehead and temples and the thin malar area.
2. Intermediate, 7.5MHz with a focal depth of 4.5 mm; used for treatment of cheeks and submentum.
3. Deep, 4.4 MHz with a focal depth of 4.5 mm; used for deeper fat pad.

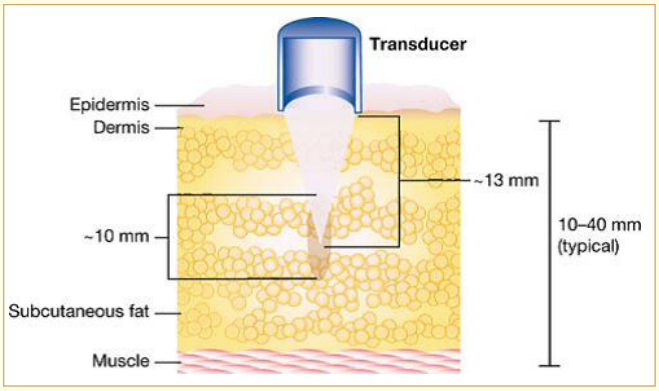
Lower-frequency hand pieces have deeper focal depths. Each probe delivers a set of pulses in a linear array, with pulses spaced 1.5 mm apart in an entire linear array of up to 25 mm long. The spacing of pulses within each linear array is set at 1.5 mm, allowing 17 thermal coagulative zones created with each probe discharge.

Before treatment, imaging is used to confirm that the handpiece is placed firmly on the skin surface and that the predicted skin depth is correct. Ultrasound gel is applied to the skin, and the handpiece is pressed perpendicularly, uniformly, and firmly to the skin surface. On average, 30 treatment lines need to be delivered to the forehead, 10 lines to each temple, 70 lines to each cheek, and 90 lines to the submentum. After treatment, the ultrasound gel is wiped off.

Liposome™ is another FDA approved device for the treatment of fat at the abdomen, flanks and upper thighs. Persons with Body Mass Index (BMI) less than 30 are the ideal candidates. If the BMI is greater than 30, the patient will probably do better with liposuction than with LipoSonix. A treatment takes about an hour. The current studies showed an average decrease in waist size of 4.6 cm or 1.8 inches after 3 months. The swelling from LipoSonix usually resolves in a few days. Compression garments help reduce the swelling and often make the first day or two more comfortable. Results are typically seen in 8 to 12 weeks, which is how long the body takes to remove the destroyed fat tissue through its natural process.

References

1. Sadick NS. Update on non-ablative light therapy for rejuvenation: a review. Lasers Surg Med 2003;32:120–8.
2. TerHaar G, Coussios C: High intensity focused ultrasound: Physical principles and devices. Int J Hyperthermia 23: 89-104, 2007.
3. Fodor PB, Smoller BR, Stecco KA, et al: Biochemical changes in adipocytes and lipid metabolism secondary to the use of high-intensity focused ultrasound for non-invasive body sculpting. Presented at the Annual Meeting of the American Society of Aesthetic Plastic Surgery, April, 2006, Orlando, FL.



4. Fatemi A. High-intensity focused ultrasound effectively reduces adipose tissue.SeminCutan Med Surg. 2009 Dec;28(4):257-62.
5. Ferraro GA, De Francesco F, Nicoletti G, Rossano F, D'Andrea F (2008) Histologic effects of external ultrasound-assisted lipectomy on adipose tissue. Aesthetic PlastSurg 32:111–115.
6. Haar GT, Coussios C (2007) High-intensity focused ultrasound: physical principles and devices. Int J Hyperth 23: 89–104.
7. 7 Fatemi A, Kane MA (2010) High-intensity focused ultrasound effectively reduces waist circumference by ablating adipose tissuefrom the abdomen and flanks: a retrospective case series. Aesthetic PlastSurg 34:577–582.
8. Suh et al. Intense Focused Ultrasound Tightening in Asian Skin: Clinical and Pathologic Results. DermatolSurg 2011;37:1–8.

Creating Awareness Through Patient Education

UNETHICAL AND COMMERCIAL PRACTICES IN APPLICATION OF LASER FOR TREATMENT OF VARIOUS SKIN CONDITIONS—BEWARE!!!

Dr. Khatri Gayatri

MBBS MD DNB(FRUGHS)

Venkat Charmalaya-
Centre for advanced dermatology, Bangalore

Dr. Venkataram Mysore, President IADVL

MBBS DVD DNB MD DipRCPath (LOND)

Venkat Charmalaya-
Centre for advanced dermatology, Bangalore

Laser treatment has become popular- but has also become subject to commercial and unethical practices. **It has been marketed as a MAGIC remedy for almost all skin conditions and is being practiced even in beauty clinics.** Here are some specific tips that a patient should be aware of and guard against:

1. Laser machines are expensive and have a lot of physics involved in understanding the mechanism of laser. Dermatologists are the only specialists who learn and are trained for this during their post graduate training. **BE AWARE OF THE QUALIFICATIONS OF THE DOCTOR.**

2. In various centers and clinics, unqualified, poorly trained technicians and doctors other than qualified dermatologists perform these procedures. **CHECK THE CENTRES.**

3. Non-allopathic doctors and various beauty parlours are practicing laser, which is very unsafe as they do not know the anatomy of the skin as well as the physics of the laser and pathophysiology of the skin condition they are treating. **INSIST ON KNOWING YOUR DOCTOR.**

4. For practicing lasers, one needs to have a special set up in accordance to the prescribed guidelines which requires adequate ventilation, special chairs and equipments, along with fire extinguisher facilities in case of any emergency like burns. **CHECK THE SET UP, ACCREDITATION, QUALITY CONTROL, WHERE LASER IS BEING PERFORMED.**

5. Commercial investors starting BEAUTY PARLOURS - these are businessmen who know nothing about LASERS and see this as a business opportunity. **CHECK WHO IS THE OWNER.**

6. Different wavelengths target different chromophores in the skin- **so one machine cannot be used for all skin conditions. Inquire about the machine** before undergoing the procedures and gets adequate information regarding the same from your doctor.

7. For hair removal, Laser needs to be done in several sessions over several months- depending upon the **skin type; the underlying hormonal abnormalities and the initial thickness of hair. DO NOT FALL FOR HYPE.**

8. For the treatment of scars, fractional lasers are used and when used in combination with other treatments can give 70-80% results. Discuss about your expectations with the doctor. **DO NOT FALL FOR FALSE PROMISES.**

9. Both before and after lasers certain topical preparations have to be applied to the treated area to maintain the results or to improve the efficacy of the procedure. Please discuss this with your doctor. **ALWAYS UNDERSTAND VALUE OF DRUGS.**

10. **NOTE THE COMMON LASERS: Nd YAG or diode for hair removal, Fractional laser for scars, Q switched Nd YAG for pigmentation.**

What is the answer? Seek information, find information on unbiased websites, and look for the right qualification, training and set up.

MARK YOUR CALENDAR

LET THERE BE LIGHT **(A Series of Workshops on Lasers and Aesthetics)**
An initiative by the IADVL President and a mammoth of Presidential task
IADVL ACADEMY - Special Interest Group (SIG) Lasers and Aesthetics TEAM
The IADVL SIG Lasers and Aesthetics group is conceived to focus on this rapidly growing subspecialty under the IADVL Academy of Dermatology, which spearheads the IADVL's academic activities. It aims to keep our members abreast of the latest advances in lasers and aesthetics, while also satisfying patient demands for safe, effective and evidence based practices. Its emphasis is on fundamental laser science, biophysics, light-tissue interaction, ethics and laser safety as well as approaches and advances in aesthetic procedures like injectables. The SIGLA team tries to critically evaluate new and old technologies in lasers and Aesthetics using clinical and technological parameters.
MAY 2015- 1ST LASER WORKSHOP AT HYDERABAD AND RELEASE OF 1ST SIGLA NEWSLETTER
JULY 12 2015- 2ND LASER WORKSHOP AT BELGAUM
AUG 2 2015- 1ST SIG AESTHETICS WORKSHOP AT BHOPAL
SEP 19- 2ND AESTHETIC WORKSHOP AT MADURAI
SEP 27- 3RD LASER WORKSHOP AT LUCKNOW
OCT 25- 4TH LASER WORKSHOP AT NAGPUR
OCT 30- 4TH AESTHETICS WORKSHOP AT NELLORE
DEC 12-5TH LASER WORKSHOP AT KOLKATA
DEC 19- 5TH AESTHETICS WORKSHOP AT KOTTAYAM WITH SIG DERMATOSURGERY
In association with respective IADVL state branches and credit hours of CME by medical council DEMONSTRATION OF OVER 20 SYSTEMS OF LASERS, LIGHTS AND ENERGY BASED DEVICES. Demonstration of various aesthetic procedures. The SIG aesthetics workshops are supported by TORRENT pharmaceutical company.

PHOTOGALLERY

IADVL SIG Lasers And Aesthetics Activities

Inauguration of
Ist IADVL- Academy SIG Aesthetics
Workshop at Bhopal Aug 2015

Panel Discussion on
Interventional Aesthetic
Procedures

Delegates at
The SIGLA Workshop
Aug 2015

Team SIG Lasers and
Aesthetics at Bhopal for
Aesthetics Workshop

Inauguration of
Laser Workshop at
Belgaum July 2015

SIG Team at Dermacon
Mangalore Jan 2015

Live Laser Session At Belgaum July 2015

CRYO LIPOLYSIS: WHAT TO EXPECT

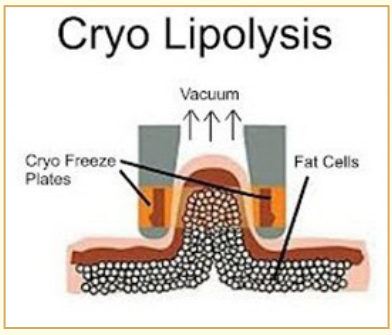
Dr. Sachin Dhawan MD DVD DERMATOLOGY

Senior Consultant Dermatologist

Fortis Memorial Research Institute, Gurgaon, Haryana

Director, Skin N Smiles Dermatology And Asthetics

Non-invasive cooling of Adipocytes to induce Lipolysis without damage to other tissues or structures (SELECTIVE CRYOLIPOLYSIS) based on the concept that fat cells are hypersensitive to cold more so than skin, nerves and muscles. Upon energy extraction by application of cold for 60 minutes at sub freezing temperatures (6-8 centigrade), the adipocytes undergo apoptosis. There is crystallization of lipids in fat cells followed by slow dissolution of cell and gradual release of lipids. The inflammatory process following cold application further injures fat cells not directly affected by the cold. Macrophages consume the triglycerides and they are further cleared by the lymphatic system. Some of them reach the liver via bloodstream and are used for energy. The results are seen 3 weeks after treatment, reaching the maximum 3 months post treatment.



Equipment

We use a Zeltique Cool Sculpting machine at our hospital. The machine has a vacuum applicator which draws tissue into a suction cup and delivers precisely controlled cooling to extract heat from tissue via 2 opposing cooling panels. The applicator also has freeze detector sensors which detect the changes in skin temperature and automatically stops treatment if skin freeze is detected.

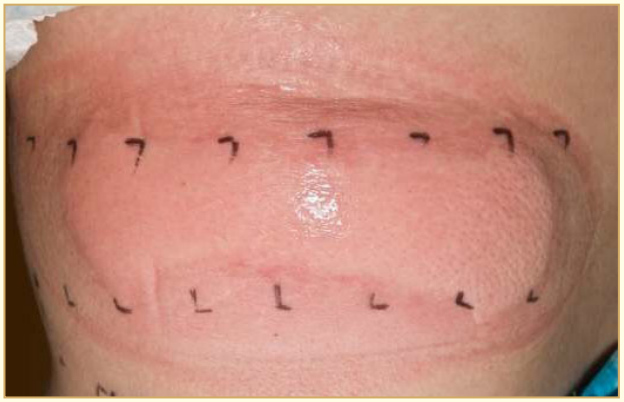
Procedure

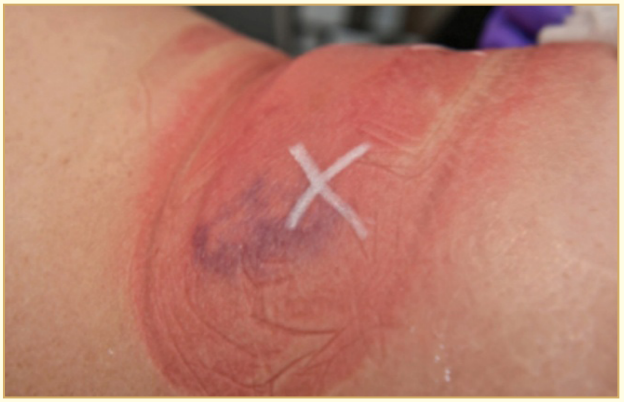
Patient assessment and expectation alignment is most important. Ask the patient to stand so that fat is subject to gravity. Pull fat away from the body forming a C shape cup with your hands to determine if the fat is pinch able. Identify the natural orientation of the fat bulge. Mark at the tail end of fat bulge on either end. Mark the thickest area of the bulge with an X . Place the gel pad with coupling gel so that the X mark lies in the middle. Place the applicator over the peak of the bulge (marked X) and use the taper marks to determine the angle of placement. Switch on the vacuum and ensure an adequate draw of tissue beyond the prescribed markings. Patient generally feels deep pulling, tugging and pinching. Then switch on the cooling. The patient generally feels stinging, tingling. aching or cramping at this stage which usually subsides after 5-8 minutes as the area becomes numb.

Post Procedure

The treated area appears red or bruised and feels stiff and there may be transient blanching immediately post procedure. After a few minutes, it gets tender as the sensation returns and the patients may feel light headed. Some patients feel transient hypo aesthesia or cramping.

Manual massage with kneading and circular motion is done for 2 minutes per area.





Post Procedure Induration And Purpura

In the 1st two weeks post procedure, patients commonly experience
- Pain/ soreness
- Tenderness
- Numbness
- Tingling/ burning
- Muscles spasms/ strong cramping

These symptoms can be mitigated by

- Cold compresses
- Compression garments
- Anti inflammatory drugs for mild soreness
- Gabapentin for neuralgia

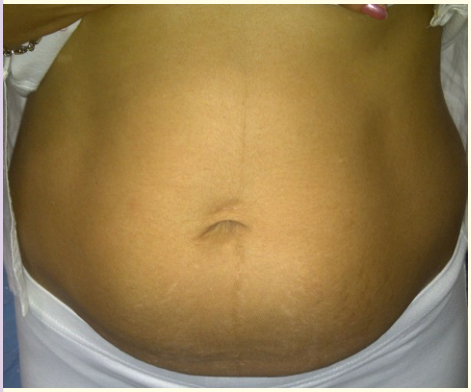
In a personal series of 10 patients for abdominal area which required 4-8 cycles per session, there was a mean inch loss of 2.4 inches measured 1 cm below the naval area.

The patients are called back for the next session after 3 months. Most patients will require 2-3 sessions for optimal results.

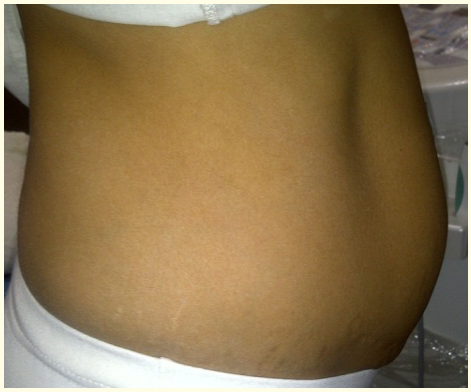
Contraindications
- Cryoglobulinemia
- Paroxysmal cold haemoglobinuria
- Cold urticaria
- Impaired peripheral circulation (Raynaud's disease)
- Hernia
- Neuropathic disorders
- Bleeding disorders
- Pregnancy/ lactation

Rare side effects

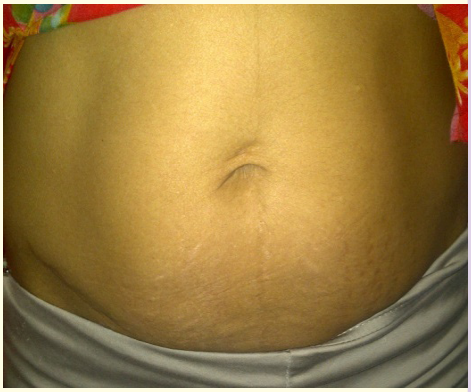
- Late onset pain: Starts after 7 days
- Subcutaneous induration
- Paroxysmal hyperplasia due to fibrosis



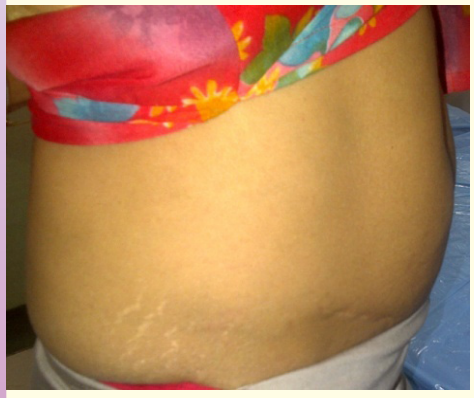
DAY 00



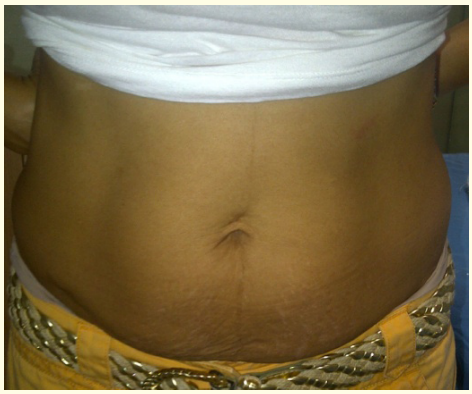
DAY 00



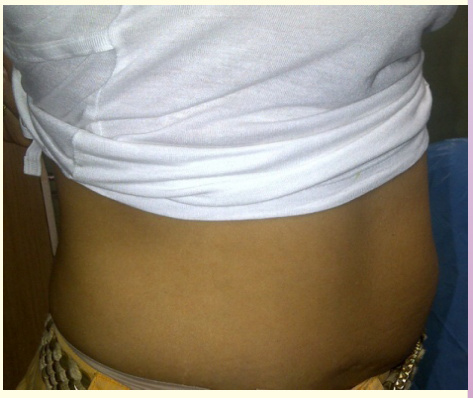
DAY 60



DAY 60



DAY 90



DAY 90

PERIORBITAL REJUVENATION WITH FILLERS

Dr. Shehnaz Arsiwala MD

Consultant, Dermatologist Cosmetic Dermatosurgeon And Laser Specialist

Saifee Hospital, Prince Aly Khan Hospital, Mumbai, Maharashtra, India

Convener, IADVL- SIG- Lasers And Aesthetics

Associate Editor, Journal Of Cutaneous And Aesthetic Surgery

The tear through or Palpebro malar grove results due to depletion of infraorbital medial and lateral pad of fat and fixation by tear through ligament and orbital retaining ligaments. While restoring periorbital zone with fillers the compartments injected are the lateral sub-orbicularis oculi fat, the medial sub-orbicularis oculi fat or the SOOF (suborbicularis oculi fat).

Step 1

- Assessment of periorbital zone- degree of tear trough, puffiness, laxity and pigmentation and hydration of skin.
- Assessment of vascularity is crucial to this area.
- Details of the volume depletion of periorbital pad of fat and resultant grooves/folds are discussed realistically with the patient.
- Degree of corrections and realistic results discussed.

Step 2

- After contraindications are ruled out, a treatment plan is charted.
- Aspirin, VIT E, anti-inflammatory agents to be stopped 3-4 days prior to procedure.

Step 3

- Informed valid consent is obtained and Pre-treatment photographs recorded.
- Mapping of the points to be injected.
- Type of filler to be used chosen, Particle size /G prime (viscoelastic character) of the filler decided.
- Amount of filler that may be tentatively requires calculations.
- Surface anesthesia to be achieved.

Step 4

Technique: Focus on

- Two access points are chosen:
  1) lateral cantus of the eye ,cannula is moved inferomedially to target tear trough area.
  2) Inferiorly to the zygomaticocutaneous ligament ,GO superomedially, below tear through ligament to target the tear through.

- Inject at or below infraorbital rim.
- The average amount of gel released is 0.3/0.4 ml in the palpebromalar groove and 0.1/0.2 in the tear trough.
- Preference for deep placement- supraperiosteal.
- Superficial placements avoided due to risk of tyndalll effect.
- Lateral to medial point injections- very small aliquots, do not inject large volume.
- Needles / rigid microcanulas for periorbital.
- Utmost care for vascularity (ice compresses, aspirate before injecting, knowledge of vessel anatomy).
- Minimal massage while moulding.
- Slight under correction is desirable.
- For dark circles rejuvenation use 30G short needle, Vertical technique and inject the SOOF (suborbicularis oculi fat) layer.

Points for periorbital filling include
Periorbital transition between perseptal and orbital portion of orbicularis oculi should be smooth and blend into upper malar region without transit point.
Best to treat mild to moderate tear trough cases.
Choose medium sized particle and least cross linked filler.
Linear threads / serial puncture.
Below tear trough 27- 30gauge, may use microcanula 25 gauge 40 mm long is atraumatic, superiomedially, deep placement supra-periosteally.
Interrupted small aliquots 0.25ml.
Not more than 0.3 to 0.4 ml per groove, less than 0.6 ml per side.
Deep submalar and cheek augmentation can be done first if required.
Liner threads below eyebrow to create a brow lift.
Special attention to vascularity- ice compresses pre and post treatment.

Step 5

Post treatment instructions for patient

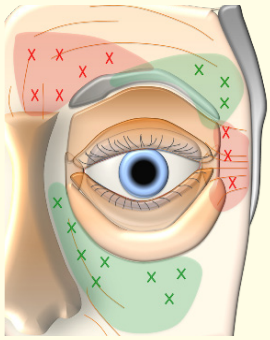
- Drink plenty of water.
- No massaging or molding or rubbing of eyes.
- Avoid harsh facial exercises.
- Periorbital zone is potential for bruising and swelling and patient should be counseled.

Follow up

- Reassess at 1-2 weeks.
- Patient asked to report back for any untoward effects- lumpiness, tenderness, nodule formation etc.

Results of a good aesthetic filling- see fig 1-3

- Best appreciated at 2 weeks after completion
- Seamless eyelid to cheek transition
- Effacement of nasojugal fold



X Areas treatable with Botulinum Toxin A

X Areas treatable with Filter

Fig 1- Periorbital zone assessment for fillers

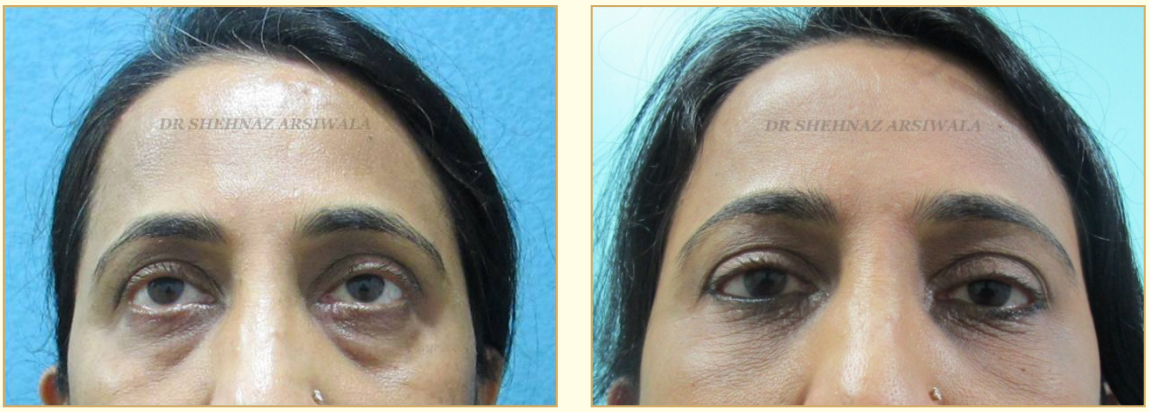


Fig 2- Tear trough correction– Restylane (Galderma)

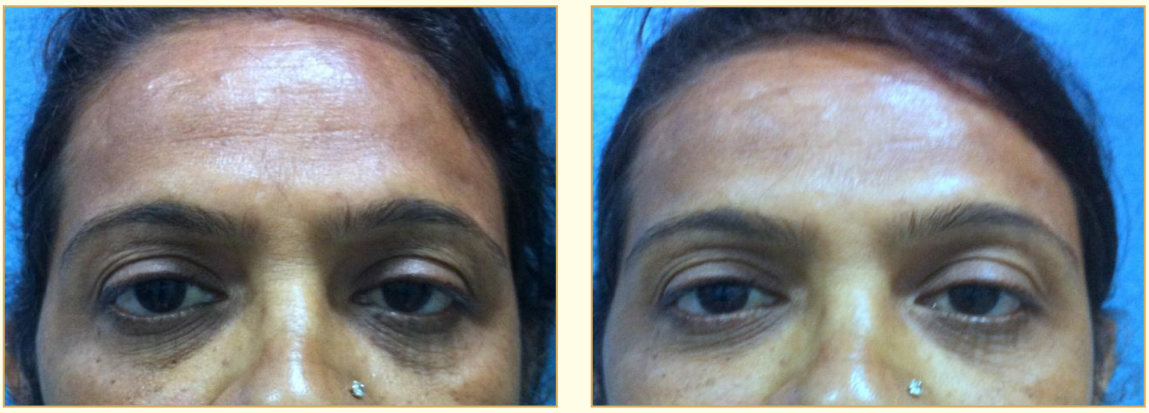


Fig 3- Periorbital filler- Juvederm XC ultra (Allergen)

Suggested Reading

- Volumizing effect of a new hyaluronic acid sub-dermal facial filler: A Retrospective analysis based on 102 cases. Herve´Raspaldo
- The evolving role of hyaluronic acid fillers for facial volume restoration and contouring: a Canadian overview. Arthur swift

INTRADERMAL INJECTION OF BOTULINUM TOXIN FOR FACIAL FINE LINES: A POPULAR YET CONTROVERSIAL TECHNIQUE

Dr. Abhishek De MD FAGE

Assistant Professor

Institute of Post Graduate Medical Education And Research

Associate Editor, Indian Journal Of Dermatology

Introduction

Recently, intradermal injection of small units of diluted Botulinum toxin A (BTX-A) has gained popularity amongst aesthetic practitioners. This procedure, popularly called as "Mesobotox", claims to be able to produce significant "face-lift" and "wrinkle-soothing". However "Mesobotox" has been poorly studied and incompletely understood; and in the absence of scientific consensus; it has remained an off-label use by a select group of aesthetic practitioners. In this article we will try to reveal the facts and fictions of this hitherto mysterious technique.

Mesobotox

"Mesotherapy" is a technique defined as multiple injections of small amount of active ingredients into the superficial layers of the skin (mesoderm) in order to achieve a result depending on the type of product used and sites of injections. Mesobotox involves microinjections of very small doses of BTX-A which gets disseminated all over the face to reduce fine wrinkles without affecting the facial ability of expressing gestures and emotions. [1] The net effect of Mesobotox, believed to be, is improved luminosity of the face with smooth skin, tighter pores and yet the ability to move all the deeper muscles of the face thus retaining a natural, non "plastic" appearance.

Rationale For Mesobotox

1. Concept of Diluted BTX A:Cl. LeLouarn observed that to avoid excessive diffusion, concentrated BTX A should be used in short and thick muscles, whereas the diluted BTX A should be used in flat and thin muscles. [2] This was the idea of "Mesobotox", because the injection of the diluted toxin in the thin and flat superficial muscles of dermis allowed a greater diffusion of which leads to a global "face-lift" and "wrinkle-soothing" effect.
2. Movement: Complete facial paralysis by BTX-A is not aesthetically desirable. The preservation of a certain degree of facial expression is of more aesthetic worth.
3. Adjunctive treatment of regular BTX-A: As there is limited scope of BTX-A in the treatment of mid face, superficial injection of diluted BTX-A is being tried to reduce the fine lines.
4. In combination with "Mesotherapy" agents: Nowadays, a new technique is being commonly practiced by aesthetic practitioners where a very small amount of BTX A is diluted with a larger amount of skin hydrating agents like vitamins and minerals and injected into the skin in a mesotherapeutic fashion in order to achieve effects like reducing fine lines and wrinkles. These lines are due to attachment of small muscle fibers to the skin that pull the skin and create both lines; which cannot really be treated by any other means. By idea of addition of vitamins and minerals into the injectable mix is to achieve re-hydration.

Injection Technique

1. Patient's face is cleansed and the wiped with alcohol pad.
2. A detailed facial assessment is done especially in reference with facial muscles, wrinkles, resting lines and textural changes.
3. A surgical marking pen should be used to mark all areas of interest. "Excess" areas should be identified with dots or small circles. "Depressed" areas, wrinkles and lines should be identified with dashes or "line shadowing".

4. Reconstitution: Most practitioners prefer a diluted form of BTX-A for this procedure. Each vial of BTX-A contains 100 Units (U) of Clostridium Botulinum toxin type A with human serum albumin and sodium chloride in a sterile, vacuum-dried form without preservatives. Shao-Ping Chang et al reconstituted BTA with 10 ml of sterile, preservative-free saline to achieve concentration of 10 U/ml. A 30-gauge needle was used to inject the materials intradermally at 1-cm interval. The injection volume was 0.02 ml per spot. The end point of the injection was a sub epidermal wheal-like swelling.[3]
5. Technique for Botulinum Toxin injection follows the Mesotherapy injection principles. Intradermal injections should be administered into the mid-dermis so as to form a dermal papule that will allow diffusion. If injections are too superficial, papules will turn into vesicles and the injected drugs will remain at a superficial dermal level with virtually no underlying effect.

Course of Treatment

Usually the treatment involves a course of six injections every 2-4 weeks depending on the problem and then again maintenance every 6-12 months depending on the problem and the amount of sun damage that the patient incurs in the interim period.

Side Effects

Most workers have found intradermal BTX-A treatment reasonably safe. Intradermal BTX are being used for the treatment of axillary hyperhidrosis for long and have a good safety profile. Migration of BTX-A has the potential chance of weakening the activity of zygomatic muscles. However, Ahmed El Bedewi has observed no such effect on the patients he treated. [1]None of the subjects treated by Shao-Ping Chang et al experienced significant adverse effects, such as allergic reaction, facial palsy, or severe paralysis of muscles adjacent to the point of injection during or after this study. However, one of the nine subjects complained of having mild periorbital muscle weakness. Some patients complain of mild to moderate stinging sensation. The pain is mostly tolerable, and is less if done under topical anesthesia. [3]

Efficacy and Evidence

Though intradermal BTX-A injection is highly effective and well documented in recalcitrant axillary hyperhidrosis, [4] the biggest criticism of Mesobotox for aesthetic indications remained relative lack of scientific evidence. However in recent times a few articles were published which dealt with intradermal BTX-A.In 2004, Tamura et al. has reported that BTX-Improved the facial aesthetic in one patient with cutis laxa. [5]Matarasso et al had used BTX-A for the management of platysma bands and age-related neck changes. [6] In 2004 Carruthers and Carruthers showed a greater degree of improvement in telangiectasia with IPL plus BTX-A than IPL alone.[7] The mechanism behind any improvement in erythema is not fully understood but may be due to BTX mediated inhibition of the release of vasodilating neuropeptides. Ahmed El Bedewi studied the effect of "mesobotox" together with intense pulsed light on facial wrinkles and erythema in ten patients aged between 40 to 60 years. All patients received standard IPL treatment and were assigned to receive eight 0.1 ml intradermal injections of BTX in each cheek (8 U total doses). Vertical lines within the forehead also received five 0.1 ml intradermal injections of BTX-A. Small wrinkles and fine lines, erythema, apparent pore size, skin texture, and overall appearance were evaluated after one week. A significantly higher proportion of patients showed improvement in small wrinkles and erythema with IPL plus BTX-A compared with the baseline demonstrated by computerized image analysis. The author concluded, a combined therapy of mesobotox and IPL is an effective and safe treatment for fine wrinkles, telangiectasia, flushing.[1]Shao-Ping Chang et al studied extensively the wrinkles soothing effect on the middle and lower face by intradermal injection of botulinum toxin type A. In his study nine volunteers were included to undergo intradermal injections of a total dose of 20~25 U BTX-A into one-half of the face, and normal saline into the other half as control. They found that by photographic documentation, there was no significant face-lifting effect. However, there was statistical significance in wrinkles reduction on the BTX-A sides compared to pre-treatment. Subjectively, six subjects noticed better wrinkles soothing effect on the BTA sides. This effect was noted as early as 4 weeks after injection, and lasted for a minimum 8 weeks. The histologic examination revealed slight neocollagen synthesis by Masson trichrome stain on both sides. BTX-A showed moderate but significant wrinkles-soothing effect without obvious side effects on the lower face. [3]

Author's View

Overall we must say that though this extension of use of BTX-A presents itself as cost effective yet exciting new option. However though this procedure can be assumed to be quite safe given it requires very minimum amount of diluted BTX-A;

its efficacy remains questionable in the absence of good quality trial. However, the author likes to practice this procedure as a "follow up procedure" of conventional BTX-A after 7-10 days; this ensure opportunity to re-examine the patient after conventional BTX-A for any possibly requirement of "touch up". The author usually uses the few left over units of the BTX-A (6 to 10) for meso-botox session 7-10 days after the conventional BTX-A procedure without charging any extra money. It establishes a good patient doctor rapport and possible opportunity to address minimal error that may have occurred during the original procedure.

References

1. El Bedewi A. The Effect of Mesobotox Together with Intense Pulsed Light on Facial Wrinkles and Erythema. Journal of Cosmetics, Dermatological Sciences and Applications, 2012, 2, 16-19
2. [Functional facial analysis after botulinum on toxin injection].Le Louarn C. Ann Chir Plast Esthet. 2004 Oct;49(5): 527-36.
3. Chang SP1, Tsai HH, Chen WY, Lee WR, Chen PL, Tsai TH.The wrinkles soothing effect on the middle and lower face by intradermal injection of botulinum toxin type A. Int J Dermatol. 2008 Dec;47(12):1287-94.
4. Naumann MK, Lowe NJ. Botulinum toxin type A in treatment of bilateral primary axillary hyperhidrosis:randomized parallel group, double blind,placebo controlled trial. BMJ2001;323: 596–599.
5. Tamura BM, Lourenco LM, Platt A, et al. Cutis laxa: Improvement of facial aesthetics by using botulinum toxin. DermatolSurg 2004;30: 1518–1520.
6. Matarasso A, Matarasso SL, Brandt FS,et al. BotulinumAexotoxin for the management of platysma bands.PlastReconstr-Surg1999;103: 645–652.
7. J. Carruthers and A. Carruthers, "The Effect of Full-Face Broadband Light Treatments Alone and in Combination with Bilateral Crow's Feet Botulinum Toxin Type A Chemodenervation," Dermatologic Surgery, Vol. 30, No. 3, 2004, pp. 355-366.

IADVL EXECUTIVE COMMITTEE 2015

President
Dr. Venkataram Mysore

President Elect
Dr. Devesh Mishra

Immediate Past President
Dr. Deepak Parikh

Honorary Secretary General
Dr. Rashmi Sarkar

Vice Presidents
Dr. Raghunatha R. Reddy
Dr. Rajesh M. Buddhadev

Honorary Treasurer
Dr. Somesh Gupta

Honorary Joint General Secretaries
Dr. Manish Gautam
Dr. Rohit Batra

IADVL ACADEMY OF DERMATOLOGY 2015

Chairperson
Col. Dr. Manas Chatterjee

Convener & Chairperson Designate
Dr. Ameet Valia

Convener Designate
Dr. K.A. Seetharam

Members

Dr. Sandipan Dhar	Dr. Sunil Dogra	Dr. Iffat Hassan	Dr. A. J. Kanwar
Dr. Bikash Ranjan Kar	Dr. Tanmay Pandhi	Dr. Krina Patel	Dr. D. A. Satish
Dr. Manjunath Shenoy	Dr. Ajith Tharakan	Dr. Biju Vasudevan	Dr. Vishalakshi Viswanath

Ex- Officio Members
Dr. Venkataram Mysore (President)
Dr. Rashmi Sarkar (Hon. Secretary General)

Advisors

Dr. Deepak Parikh (Imm. Past President)	Dr. Devesh Mishra (President Elect)	Dr. Somesh Gupta (Hon. Treasurer)
Dr. Arun Inamdar (Imm. Past Academy Chairperson)	Dr. Shyamanta Barua (Imm. Past Academy Convener)	Dr. P. Narsimha Rao (Imm. Past Hon. Secretary General)
Dr. D. B. N. Murthy (Imm. Past Hon. Treasure)	Dr. M. Ramam (Editor, IJDVL)	Dr. Shyam Verma (Editor, IDOJ)