



THE ART OF
LASER AND
ENERGY BASED
DEVICES
IN DERMATOSES AND
AESTHETIC MANAGEMENT

Alara Hotel Surakarta, 9-10 December 2017



715

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SPEAKER

Member of the



surat permohonan pembicara

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Kepada Yth.

dr. Ago Harlim, SpKK

Di Tempat

Sehubungan akan diselenggarakan Simposium dan Workshop “*The Art of Laser and Energy Based Devices in Dermatoses & Aesthetic management*” Perhimpunan Dokter Spesialis Kulit & Kelamin Indonesia (Perdoski) Cabang Surakarta, Bagian Ilmu Kesehatan Kulit dan Kelamin FK UNS/RSUD Dr. Moewardi yang bekerjasama dengan Kelompok Studi Dermatologi Laser Indonesia (KSDLI). Acara dilaksanakan pada tanggal 8 Desember 2017 di RSUD Dr. Moewardi Surakarta dan 9-10 Desember 2017 di Hotel The Alana Solo. Dengan ini kami mohon kesediaannya untuk menjadi Pembicara Simposium dengan keterangan:

Topik	: <i>Benefit of Stem Cells in Laser Treatment for Rejuvenation and Anti Aging</i>
Hari dan tanggal	: Minggu, 10 Desember 2017 <i>Session IX: Miscellaneous</i>
Waktu	: Pukul 10.30-10.45 WIB

Atas kesediaan dan kerjasamanya disampaikan terima kasih.



SIMPOSIUM & WORKSHOP
THE ART OF LASER AND ENERGY BASED DEVICES
IN DERMATOSES & AESTHETIC MANAGEMENT



Nomor :14/Laser/PERDOSKI/S/X/17
Lampiran : -
Perihal : Permohonan Pembicara

Surakarta, 5 oktober 2017

Kepada Yth.

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Simposium dan Workshop
Ketua Panitia

Sekretaris



dr. Andreas Widiansyah, Sp.KK, FINSKV, FAADV
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Management of Acne Scar uses Erbium Yag laser with ND-YAG laser

Ago Harlim

Universitas Kristen Indonesia

Acne scars are making you self-conscious or embarrassed about your skin, learn about treatments that can remove or reduce their appearance. These acne scar treatments are not cure-alls, and insurance usually doesn't cover them, but they do help to minimize the appearance of scars.

Some acne scars are permanent and some go away over time. Acne scars may be in the form of: 1. Macules. These are flat, red spots where an acne lesion was once located. They can persist for a number of weeks and then fade on their own. 2. Skin discoloration. Sometimes a healed acne scar leaves discolored skin, which is also called post-inflammatory hyperpigmentation. Skin discoloration can remain visible for months after an acne lesion has healed. 3. Tissue scars. Some types of acne can leave scars that appear as enlarged, raised growths of tissue. These acne scars may be called keloids or hypertrophic scars, and are caused by excess production of collagen in your skin. 4. Loss of tissue. More common than raised tissue scars are the acne scars that are caused by a loss of tissue. These acne scars are called ice-pick scars, depressed fibrotic scars, soft scars, atrophic macules, or follicle macular atrophy. They tend to appear sunken and look like pits in the skin.

Whether you decide to have your acne scars treated is a personal decision. Some people choose to have their acne scars removed because they're emotionally affected by the appearance of the scars. Others have acne scars that are severe and disfiguring and choose to have them removed to restore the appearance of their skin.

If you have acne scars, consult a dermatologist as soon as possible. He or she can recommend treatments for your scars and discuss ways you can prevent future scarring.

Common scar removal treatments include: dermabrasion, microdermabrasion, chemical peel, retinoic acid, laser, punch excision, filler, skin graft

- **Demabrasion** This very effective scar removal treatment uses a high-speed brush or other instrument to resurface your skin and remove or reduce the depth of scars. You will typically need several days to heal afterward.
- **Micro-dermabrasion.** For this less intensive type of dermabrasion, a dermatologist or aesthetician uses a spray of very small crystals instead of a high-speed brush to remove surface skin. More than one treatment may be required, and there is no downtime.
- **Chemical peels.** Chemical peels can reduce the appearance of shallow acne scars and post-inflammatory hyper-pigmentation around a healed acne lesion. A chemical peel may be administered by a doctor, nurse, nurse practitioner, or spa aesthetician and involves applying

a chemical to your skin to remove its outer layer, giving it a smoother, more even appearance. Depending on the strength of the acid used, you may experience redness and peeling for a few days afterward.

- Retinoic acid. Certain tissue scars should not be treated with traditional acne scar removal treatments. Instead, retinoic acid cream applied directly to the scar can help reduce its appearance, especially in the case of keloid scars.
- Lasers. Your dermatologist can use a laser to remove the outer layer of your skin, contour areas of acne scars, or lighten redness around healed acne lesions. Various types of lasers are used, depending on whether the acne scar is raised or flat. More than one laser treatment may be required and, depending on the laser used, you may need to several days to heal.
- Fillers. A substance such as collagen, hyaluronic acid, or fat can be used to "fill out" certain types of acne scars, especially those that have resulted in a depressed appearance of the skin. Since fillers are eventually absorbed into your skin, you will have to repeat filler injections, usually every few months, depending on the type of product used. There is no downtime for recovery from this treatment.
- Punch excisions. This type of skin surgery removes acne scars by individually excising, or cutting out, the scar. The hole left by the incision can be repaired with stitches or a skin graft. This technique is most often used to treat pitted acne scars.
- Skin grafting. With skin grafting, your doctor will use a small piece of normal skin to fill in an area of scarred skin. Skin grafts are usually taken from skin behind your ear. This technique may also be used when an acne scar removal treatment, such as dermabrasion, leaves a large tunnel in your skin.

Remember that while these treatments can improve your skin's appearance, they may not be able to completely restore it. Be realistic with your expectations, but explore your options with a dermatologist.

Significant advances in laser technology have occurred in the past 2 decades, making laser therapy a valuable and highly versatile treatment for a number of skin conditions. We will review how and why lasers work, and what lasers can be used for the treatment of various skin condition.

Nd:YAG, or neodymium-doped yttrium aluminum garnet, is one of the more advanced types of laser technology now commonly used for the treatment of a wide range of skin and eye disorders. It is marketed under different brand names, including Cutera, RevLite Q-Switched, and Fotona, among others. Each machine is uniquely designed to treat specific problems.

Some important thing , we have to know

Light Photon's Energy chromophore is Absorption of light photon's energy is absorbed by transferred to a chromophore.

A chromophore is an atom or molecule that gives color to a substance and can absorb light at a certain wavelength. Two major chromophore in the skin are melanin and oxyhemoglobin.

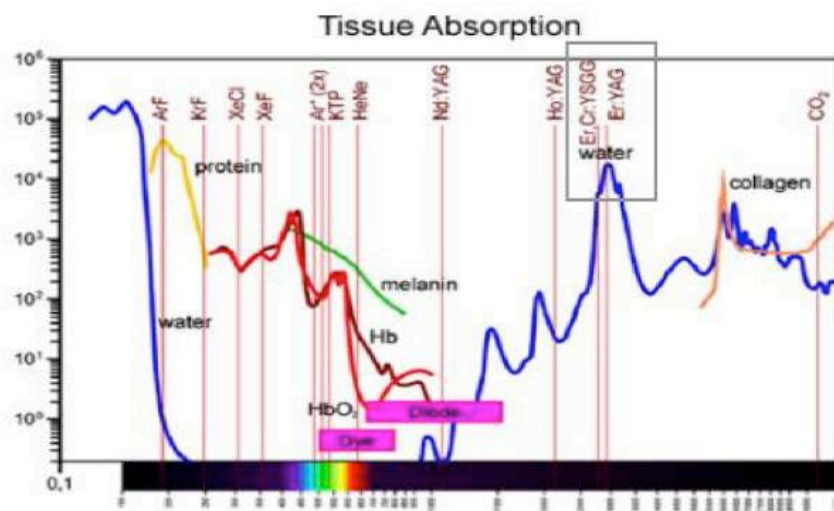
Our body have a lot of water. Water absorb light in the near infrared portion of the electromagnetic spectrum.

Thermal relaxation time = time it takes for a target substance to cool to half the temperature to which it was heated without increasing the temperature of surrounding tissues. The fluence is high enough to heat the target to and pulse duration shorter than the target's TRT

Er:YAG laser

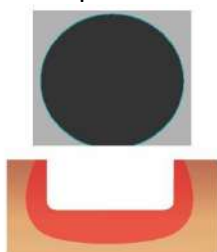
Have 2940nm wavelength, Maximum absorption by water, Minimal penetration depth, Short thermal relaxation time, A short pulse width can provide precise control with minimum damage

Why Erbium: YAG Laser?. Er: YAG laser has the highest absorption and therefore the most efficient ablation



There are 2 kind of Laser applications

Full Field spot



Fractional spot



Fractional skin procedures can be used for Melasma, PIH, Acne, varicella, traumatic scars, Keloids, Striae, Big pores, Fine lines, Dermatoheliosis

Laser treatment for acne scarring works in two ways.

First, heat from the laser works to remove the top layer of your skin where a scar has formed. As this top layer of your scar peels off, your skin appears smoother, and the appearance of the scar is less noticeable or you can use ablative laser such as Erb Yag, CO2 laser fractional

As the scar tissue breaks apart, heat and light from the laser also encourage new, healthy skin cells to grow. Blood flow is drawn to the area by the heat of the laser, and inflammation is reduced as blood vessels in the scar are targeted.

All of this combines to make scars look less raised and red, giving them a smaller appearance. It also promotes the healing of your skin.

Classification of Acne Scars

Types of Scar : Ice Pick, Box, Rolling Scar



The ideal skin resurfacing laser is a laser that enables a wide range of treatment : Combined ablative and thermal treatments

Acne scar treatment should Combination Ablative laser and Non ablative laser such as long pulse Nd Yag, IPL, Fraxional RF, Diode laser, Low power biostimulation laser, Stimulation collagen

We use the erbium laser as a ablative laser or resurfacing and long pulse Nd Yag for heat that can stimulated the collagen

Long pulse Nd:YAG Laser Applications

1. Removal of unwanted hair
2. Therapies for unsightly veins and other vascular lesions
3. Treatment of age / sun spots
4. Treatment of Onychomycosis
5. Non – ablative skin rejuvenation T3
6. Wound healing

Long pulse in active acne can reduces acne inflammation by photoselective absorption and heating of overactive sebaceous by glands, accelerates the healing process, Reduces the possibility of developing new acne inflammation , thermally and selectively destroys large sebaceous glands, stimulates collagen remodeling

Before laser for acne scar, usually we used some antiviral to prevent patient who has herpes simplex history. Antiviral prophylaxis against cutaneous HSV. We uses A typical 6-week preparation regimen before laser resurfacing is as follow (controversial):

Retinoic acid cream (0.05-0.1%): Apply 0.5-1g in the evening, Hydroquinone cream (2-4%): Apply 0.5-1g twice daily, Alpha-hydroxy acid cream (2-4%): Apply 0.5-1g in the morning

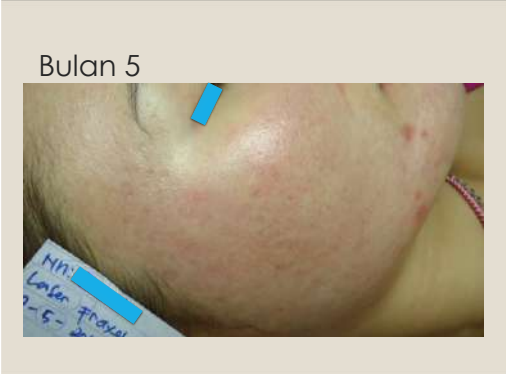
Before



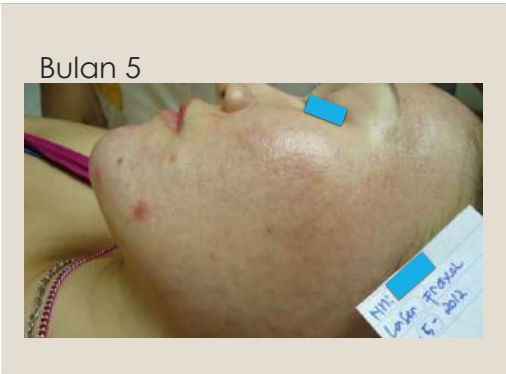
Before 2 month



After 5 month



Before 5 month



After 5 month



Before 6 month



Immediately After Laser

After 1 week

Conclusion

Best treatment for Acne Scar is combination therapy between superficial ablative laser and non ablative/collagen stimulation laser

Reference

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