CONTINUING MEDICAL EDUCATION
FK UKI - RSU UKI

SERTIFIKAT

diberikan kepada

DR. Dr. Ago Harlim, MARS, Sp.KK, FINSDV, FAADV

sebagai

Pembicara

SIMPOSIUM NASIONAL "*DERMATOSURGERY & ANTI AGING*"

dalam rangka

DIES NATALIS Ke-57 FAKULTAS KEDOKTERAN UKI

Auditorium Grha William Soeryadjaya Fakultas Kedokteran UKI
Jakarta, 30 November 2019

Ketua CME FK UKI - RSU UKI,

Dr. dr. Ago Harlim, MARS, Sp.KK, FINSDV, FAADV

Ketua Dies Natalis Ke-57,

Dr. dr. Bona Simanungkalit, DHSM, M.Kes, FIAS

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SUSUNAN ACARA

07.30 – 08.30 : Registrasi
08.30 – 09.00 : Pembukaan (MC)
Doa
Kata Sambutan:
- Ketua Dies Natalis
- Dekan FK UKI
- Rektor UKI
- Ketua Yayasan UKI

09.00 – 09.30 : Guest Lecture RSPI
Moderator : DR. Dr. Bona Simanungkalit, DHSM, M.Kes

Sulianti Saroso Hospital Experince of Skin and Sexual Problems of BPJS
oleh : Dr. Rita Rogayah, Sp.P(K), MARS

Sesi I "*ANTI AGING*"

Moderator : Dr. Luana Nantingkaseh Achmad, Sp.KJ

09.30 – 09.50 :
Hubungan antara Ciri Fisiko-Biologik Kulit dengan Persepsi Diri Kulit Sensitif
Dr. Syahfori Widiyani, M.Sc, Sp.KK

09.50 – 10.10 :
Anti-Aging Medicine and the Quality of Life
Prof. DR. Dr. Wimpie Pangkahila, Sp.And(K)

10.10 – 10.30 :
Combined Treatment for Face Rejuvenation and Soft Tisue Augmentation
Dr. Stanley Setiawan, Sp.KK

10.30 – 10.50 : Diskusi
10.50 – 11.05 : *Coffee Break*

Sesi II "*DERMATOSURGERY & STEMCELL*"

Moderator : DR. Dr. Bambang Suprayogi, Sp.THT-KL, M.Si.Med

11.05 – 11.25 :
The Latest Therapy for Acne
DR. Dr. Sukmawati Tansil Tan, Sp.KK, FINSDV, FAADV

11.25 – 11.45 :
Basic Laser Science for Tattoo Remover
DR. Dr. Ago Harlim, MARS, Sp.KK, FINSDV, FAADV

11.45 – 12.05 :
Penanganan Trauma Maksilo Fasial Akut
Dr. Lina Marlina, Sp.THT-KL

12.05 – 12.25 : Diskusi
12.25 – 13.00 : ISHOMA

Sesi III "*BIOSTIMULATOR FOR ANTI AGING*"

Moderator : DR. Dr. Ago Harlim, MARS, Sp.KK, FINDV, FAADV

13.00 – 13.20 :
Hand Rejuvenation With Biostimulator Collagen Stimulator
Dr. Stanley Setiawan, Sp.KK

13.20 – 13.40 :
The Latest Cosmeceuticals Approach for Anti Aging
Dr. Ruri D. Pamela, Sp.KK

13.40 – 14.00 :
The Power of Skin Booster: Hydrofilling for Aging Prevention
Dr. Dartri Cahyawari, Sp.D.V

14.00 – 14.20 : Diskusi
14.20 – 14.40 : *Coffee Break*

Sesi IV "*MENS HEALTH PROBLEM*"

Moderator : Dr. Kurniyanto, Sp.PD

14.40 – 15.00 :
Erectile Dysfunction
Dr. Ali Fuchi MBA, M.Repro, Sp.And(K)

15.00 – 15.20 :
Clinical Pharmacology of PDE5 Inhibitor
DR. med. Dr. Abraham Simatupang, M.Kes

15.20 – 15.40 :
Disinformation of Media Advertisement
DR. Dr. Bona Simanungkalit, DHSM, M.Kes

15.40 – 16.00 : Diskusi
16.00 – 16.20 : Penutupan (*Door Prize*)

PROSIDING

SEMINAR NASIONAL

Tema : Dermatosurgery and Anti Aging

Auditorium Graha William Soeryadjaya

Fakultas Kedokteran Universitas Kristen Indonesia

Jakarta, 30 November 2019

FK UKI

2019

PROSIDING

SEMINAR NASIONAL

Tema : Dermatosugery and Anti Aging

Panitia Penyelenggara :

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KATA PENGANTAR

Salam damai sejahtera untuk kita semua, Assalammu' alaikum Warrahmatullahi Wabarakatuh, Om Swastiastu, Namo Buddhaya, salam kebajikan sekali lagi untuk kita semua.

Pertama-tama, marilah kita panjatkan Puji Syukur ke hadirat Tuhan, yang atas kasih dan perkenanNya telah mengijinkan tim Ilmiah dan Panitia Seminar Nasional **Dermatosugery and Anti Aging** menyelesaikan penyuntingan dan penyusunan buku prosiding kegiatan ilmiah yang dilaksanakan pada hari Sabtu, 30 November 2019 di Auditorium GWS FKUKI.

Buku prosiding ini memuat naskah ilmiah yang disampaikan baik dalam bentuk presentasi oral maupun poster oleh pembicara-pembicara pakar dibidangnya mengenai berbagai topik yang menarik dan *update* bidang kedokteran. Informasi terkini tersebut disampaikan dalam kaidah penulisan ilmiah yang lazim dengan tujuan untuk mengedukasi peserta dan juga pembaca; selain itu juga sebagai bentuk tanggungjawab ilmiah FKUKI dan CME FKUKI.

Apresiasis setinggi-tingginya diberikan kepada para penulis/pembicara serta seluruh panitia yang telah berupaya maksimal untuk menjadikan buku ini menjadi kenyataan.

Besar harapan kami untuk masa ke depan, standar yang diterapkan dalam membuat buku semacam ini dapat terus dipertahankan dan ditingkatkan. Viva FKUKI.
Selamat membaca.

Jakarta, 30 November 2019

DR. Dr. Forman Erwin Siagian, M.Biomed

SAMBUTAN KETUA PANITIA

Yang terhormat Rektor Universitas Kristen Indonesia, Bapak DR. Dhaniswara K. Harjono, SH,MH,MBA beserta jajaran Rektorat.

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Yang terhormat para Guru Besar Fakultas Kedokteran UKI

Yang terhormat teman-teman sejawat dari beberapa instansi fakultas kedokteran, rumah sakit, puskesmas serta rekan-rekan dosen Fakultas Kedokteran UKI

Bapak-Bapak, Ibu-Ibu dan para hadirin sekalian yang saya hormati.

Selamat pagi, salam sejahtera untuk kita semua.

Dalam suasana sukacita pada hari ini kami Continuing Medical Education bekerjasama dengan Ikatan Alumni FKUKI mengadakan Seminar Nasional **Dermatosugery and Anti Aging**. Berbagai masalah tata laksana pasien sering dialami oleh para dokter seperti diagnosis, pemeriksaan dan tata laksana, dan salah satu diantaranya adalah tata laksana penyakit infeksi, dengan topik yang kami angkat tersebut diatas kiranya para dokter dan para medis dapat semakin meningkatkan ketrampilan dalam menangani pasien. Seminar

ini diikuti oleh internship dokter, dokter puskesmas, dokter rumah sakit serta para dosen fakultas kedokteran lainnya.

Kami mengucapkan terima kasih kepada para pembicara, para moderator, seluruh rekan-rekan panitia dan para sponsor, sehingga seminar nasional ini dapat terselenggara dengan baik.

Akhir kata saya mengucapkan Selamat mengikuti Seminar dan kiranya seminar ini dapat bermanfaat untuk kita semua.

Terima kasih

Jakarta, 30 November 2019

Ketua Panitia

SAMBUTAN KETUA CME-FKUKI

Syalom, Selamat pagi, salah sejahtera untuk kita semua

Dengan penuh sukacita dan syukur kita panjatkan kehadirat Tuhan Yang Maha Pengasih atas berkat-berkatNya sehingga pada hari ini kami *Continuing Medical Education* bekerja sama dengan Ikatan Alumni FKUKI dapat menyelenggarakan Seminar Nasional Tatalaksana terkini penyakit infeksi dalam praktik sehari-hari,

Salah satu tugas CME adalah menyelenggarakan seminar/symposium/temu ilmiah yang diadakan secara rutin setiap 3-4 bulan sekali, disamping menambah wawasan dan pengetahuan, melalui seminar ini juga dapat memenuhi salah satu Tridarma Perguruan Tinggi Dosen, antara lain jenjang jabatan akademik dosen.

Para pembicara adalah para pakar yang telah berkiprah dan eksis pada bidang ilmu masing-masing sesuai topic seminar, oleh karena itu kami mengucapkan terima kasih kepada para pembicara dan para moderator yang telah meluangkan waktu sehingga acara seminar berjalan dengan baik.

Dslam Seminar ini kami mengundang rekan-rekan sejawat dari fakultas kedokteran lain, para dokter puskesmas, para dokter rumah sakit serta para dokter rumah sakit afiliasi, untuk

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Terima kasih

Jakarta, 30 November 2019

Ketua CME FK UKI – RSU UKI

DR. Dr.Ago Harlim, MARS, Sp. KK, FINSDV, FAADV

KATA SAMBUTAN DEKAN FK UKI

Syalom, Assalam'alaikum Warahmatullahi Wabarakatuh, Om Swastiastu.

Selamat pagi dan Salam sejahtera buat kita semua,

Yang kami hormati : Bapak Rektor UKI

Direktur RSU UKI

Ketua IKAFAKED UKI

Para Narasumber/ Pembicara

Para Guru Besar dan Peserta Seminar yang berbahagia Seluruh Panitia Seminar yang saya banggakan.

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Dokter selain berperan sebagai praktisi kesehatan, juga seorang ilmuwan yang harus senantiasa mengikuti kemajuan ilmu kedokteran terbaru. Seminar adalah salah satu sarana pembelajaran untuk meningkatkan mutu pelayanan yang diberikan kepada masyarat ilmu.

Kami berharap seminar hari ini akan memberikan manfaat yang besar bagi para sejawat dokter dan tenaga medis lainnya dalam pelayanan sehari-hari untuk memenuhi harapan masyarakat yang membutuhkan pertolongan dengan segera.

Akhir kata saya mengucapkan selamat mengikuti seminar, kiranya Tuhan Yang Maha Esa memberkati usaha kita semua untuk meningkatkan mutu pelayanan kesehatan kita kepada sesama.

Jakarta, 30 November 2019

Dekan FK UKI

DR. Dr. Robert Hotman Sirait, Sp.An

DAFTAR ISI

Basic Laser Science for Tattoo Removal

Ago Harlim

Departemen Penyakit Kulit dan Kelamain, Universtas Kristen Indonesia, Jakarta

History of Tattoo

Tattooing has been an ancient art and practice starting in the Stone Age in approximately 12,000 BCE. They used the skin as it served as a useful canvas. Trend of decorative tattooing has led to an increase in the number of patients requesting tattoo removal. 50% of individuals regret their tattoos. According to Candela Laser Corporation Data in the US, 9-11% of men have tattoos and 50,000-100,000 women are tattooed each year. But still tattoos are not well received by the public.[1]

Removal Technique

Pre-laser tattoo removal methods include what Aetius the Greek Physician in 543 CE did. He used the salabrasion method (scrubbing the skin with salt) for removal the tattoos. Modern tattoo removal techniques involve the destruction or removal of the outer skin layers by mechanical, chemical, or thermal means, which is usually accompanied by inflammation.[1,2]

Using the concept of thermal relaxation time to minimize collateral thermal injury to the normal surrounding tissue, the pulses of light required for effective treatment must be very short. Transepidermal elimination of pigment occurs through denuded skin and via an exudative phase that allows the tattoo pigment to migrate to the wound's surface.[2,3,4]

In tattoo removal the target for the laser light consists of small particles of tattoo ink which are found either within macrophages or scattered extra-cellularly throughout the dermis. The inflammatory response may also promote macrophage activity, with increased phagocytosis enabling additional pigment loss during the healing phase.[3,4]

The techniques of tattoo removal include the several already described above, such as mechanical tissue destruction with examples such as salabraion and dermabration. Chemical tissue destruction includes use of various caustic chemicals such as tannic acid and silver nitrate. Electrocautery and electrodessication were widely used in the past and caused significant scarring. Most thermal products to remove tattoos are not used today. However, the technology utilised within thermal products has led to the best method of tattoo removal - laser removal. The advance of thermal tissue destruction has spurred the use of lasers such as the argon laser, dioxide laser and pulsed laser. The argon laser was created in 1962 and followed by the carbon dioxide (CO2) laser. The argon laser has a higher risk of scarring. Thermal methods of tattoo removal include the use of destructive lasers, such as the carbon dioxide (CO_2) laser, which destroys the superficial layers of skin, effecting removal of a tattoo. These thermal methods of tattoo removal, however, almost always leave a scar.[3,4]

The discovery of selective photothermolysis, the ability to selectively remove target structures without disrupting the surrounding skin, made it at least possible to remove tattoos without destroying the surrounding skin and leaving a scar.[3]

The first laser was introduced in 1960 by Maiman. It contained a Ruby Rod and emitted light with a wavelength of 694 nm. Other types of laser followed, such as neodymium : yttrium-aluminium- garnet laser (Nd-YAG) in 1961. Goldman, in 1965, reported the use of the ruby laser in removing tattoos with minimal associated scarring. This was followed by the Nd:YAG laser in effecting tattoo removal. Theory predicted that pulse durations in the nanosecond domain would be optimal for tattoo removal, and so the Q-switched neodymium:yttrium-aluminum-garnet, alexandrite, and ruby lasers that operate in this range are the key tools for modern tattoo removal.[2,3,4]

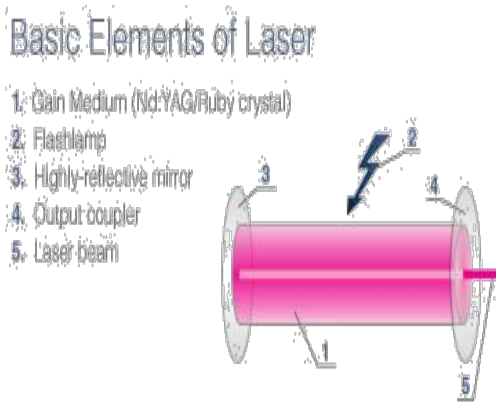

Figure 1. Basic elements of Laser

The term laser is an acronym for Light Amplification by Stimulated Emission of Radiation. Lasers are usually named after the constituents of the medium. This may be a gas such as argon and CO2, a liquid such as pulsed dye laser, a solid, such as alexandrite diode, Er:YAG, Nd:YAG, or a ruby lasers. Alternatively there are solid state lasers such as the diode laser, which is excited by an external source of energy such as a flashlamp.[3] (Figure 1)

Lasers are also classified according to the pulse characteristics of the beam. This may be continuously pulsed or quality switched (q-switched). Continuous wave light consists of an uninterrupted beam of relatively low power. This continuous beam can be shuttered to deliver individual pulses of energy.[2,4]

Light can be used to selectively damage or destroy a target chromophore if the wavelength selected creates the largest differentiation possible between the absorption coefficient of the target and the surrounding tissue. There is also a requirement for the energy influence to be sufficiently high to damage the target, and that the pulse duration is less than or equal the thermal relaxation time, which is the time taken for the target to dissipate about to approximately 63% of the incident thermal energy.[3]

Basic Laser Wavelength

Our skin contains three major chromophores that absorb the wavelengths of light that are used in laser tattoo removal. These include Melanin, Hemoglobin and H2O (water). Melanin gives skin its tone or color and darker skin contains more melanin. One must proceed with extreme caution in patients with darker skin types (types IV-VI) as there may be an adverse side effect from laser treatment in these patients due to competitive absorption of the laser light by melanin found within the epidermis. These patients may experience some destruction of melanin when the 1064nm light is absorbed, but it will re-generate by itself. Hemoglobin or blood absorbs energy especially in the 532nm wavelength which may lead to purpura or redness and bruising. H2O or water has a very low absorption rate at the 532nm wavelength but a very moderate absorption rate at 1064nm.[4] Figure 2.

Present-day tattoo needles inject ink granules into the superficial to mid-dermis. This ink placement is necessitates deeply penetrating lasers to achieve tattoo removal. The tattoo removal lasers produce specific wavelengths of light that have been proven to be absorbed by certain colors of tattoo ink. When this energy is applied for the right length of time, at the right level of energy, and in the proper wavelength, the tattoo ink will heat up to such an extent that it will cause the ink to break down into tiny pieces and make it possible for removal

by the body's immune system. Most tattoo removal lasers use the 1064nm and 532nm wavelengths to remove tattoos but generally are unable to remove blue and green tattoos beyond a limited amount.[3,4]

The wavelengths for tattoo removal are the 1064nm wavelength, the 532nm wavelength, the 694,3nm wavelength. The 1064nm wavelength produced by the Nd:YAG crystal which is absorbed well by dark colors of tattoo ink (black, brown and purple). The 532nm wavelength is well absorbed by red, orange, and yellow tattoos. The 694.3nm wavelength is a synthetic ruby crystal, well absorbed by blue and green tattoo ink. While combined with Nd:YAG laser (1064nm and 532nm), these are effective at removing virtually every color of tattoo. [2,3,4,5] (Figure 3)

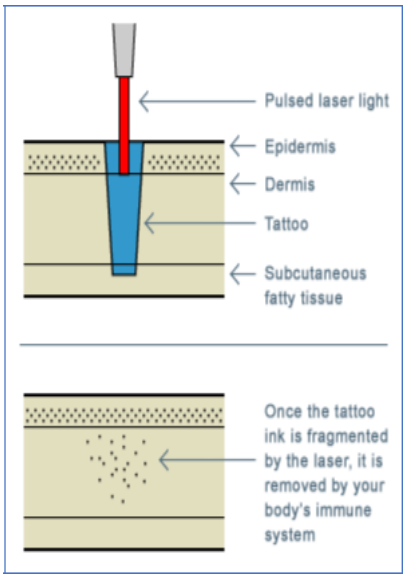

Figure 2. Laser destroy the ink

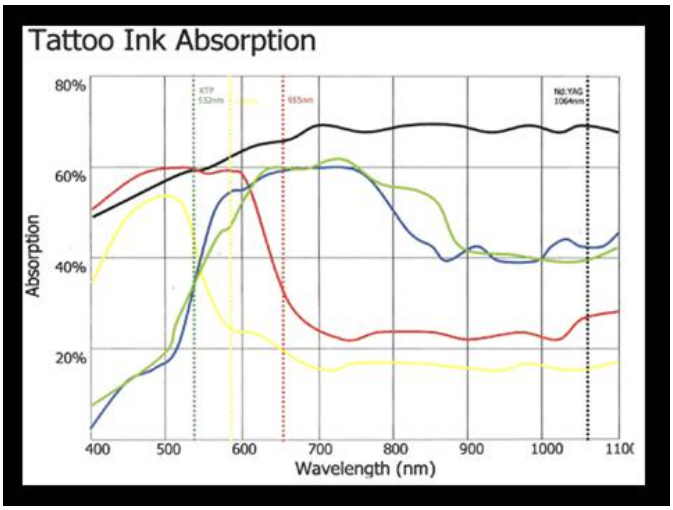

Figure 3. Tatoo ink absorption

Laser for Tattoo Removal.

There are several lasers for tattoo removal nowadays, Q-switched Ruby Laser (QSRL), Q-switched Nd-YAG Laser, Q-switched alexandrite laser and flashlamp-pumped pulsed dye Laser.[2,3,4,5,6]

Q-switched Ruby laser

This laser is extremely effective at removing black and blue tattoo pigments and unwanted melanin pigment. In fact, this laser even temporarily removes normal melanin pigment from skin, but because of the deep location of melanocytes surrounding hair follicles, areas depigmented by the Q-switched ruby laser will re-pigment in the months after treatment. Because amateur tattoos typically utilize India ink and are generally placed while using a straight needle and not an electric professional tattoo needle, these tattoos respond much more quickly to laser removal than do professionally placed tattoos. Amateur tattoos respond in fewer treatments compared to professional tattoos.[2,4,5,6]

This laser emits a red light that is well absorbed by most amateur and professional tattoo ink colors except red and yellow. The response of green tattoos is variable. This laser is also effective in treating tattoos that have had prior treatment for removal resulting in medical trauma.[2,4]

a. **Before** **b. 9 Week After** **c. 10 Week After**

Figure 4 (a, b, c) First treatment using Qs NdYag 1064 nm. 6. 2 J. Spot Size 3 (Fig.1), 9 week after is second treatment using QS ruby 694 nm. 4 J. Spot Size 4. The result in the 10th week after first treatment.

Q-switched Nd:YAG

Q-switched Nd:YAG lasers also contain a potassium titanyl phosphate (KTP) crystal in addition to the Nd:YAG crystal, which doubles the frequency of the 1064-nm laser light, thus producing 532-nm green light from the same machine. Thus, Q-switched Nd:YAG lasers are capable of emitting two wavelengths of light, both 1064-nm and 532-nm laser energy. This versatility enables treatment of dark tattoo pigments, such as black and dark-blue, using the 1064-nm wavelength, as well as the treatment of red, orange, and some yellows using the 532-nm wavelength. When treating a tattoo, it is quite obvious that the infrared 1064-nm wavelength is not absorbed into the red tattoo pigments.[2,4,6]

5a 5b

Figure 5a is Before the treatment, **Figure 5b** is after Nd:YAG Laser 1064nm, 6,5 Jou Spotsize 4 and Nd:YAG Laser 532nm, 4,5 Joule Spotsize 3.

When blanketing a tattoo, one can easily see the black or blue pigment turning white immediately after treatment with the laser, whereas the red pigment appears as if it has been avoided throughout the laser treatment. The converse it true when using the 532-nm wavelength. The greatest effect is seen when treating the red tattoo pigments, although some minor effect may also be seen on black. Sparing of the red tattoo pigment when using an infrared wavelength is easily seen after treatment. The 1064 nm is less well absorbed by epidermal melanin pigment than other Q-switched wavelengths and as expected, pigmentary alterations or scarring is not noted. Because of the decreased melanin absorption at the long 1064nm wavelength as compared with the 694nm ruby or 755nm alexandrite laser, treatment of darkly pigmented individuals is accomplished using the Nd:YAG laser with less risk of injuring epidermal melanin pigment and thus less risk of subsequent scarring.[2,4,6]

6a, Before 6b, After

Figure 6a,b. Ny. S 34 th, 1064nm Spot size 4,6 Joule QS Nd: YAG Medline

Q-switched Alexandrite Laser

The Q-switched alexandrite laser emits at a wavelength of 755nm. Alexandrite lasers are capable at removing blue and black pigments, as well as having been credited with the ability to remove green tattoo pigments better than any other laser. Green is often the only color left behind after treatment with Nd:YAG lasers and may be the most stubborn color for any other laser type to remove as well. The alexandrite laser has become known

as the treatment of choice for removing green tattoo pigment, although like the other types of Q-switched lasers, it is also quite effective at removing black and blue tattoo pigments.[2,4]

Temporary hypopigmentation was noted in 50% of patients, and 12% noted transient textural changes to the surface of the skin. It was concluded that the Q-switched alexandrite laser was safe and effective for removing blue and black tattoo pigments.[2,4]

Flashlamp-pumped Pulsed Dye Laser.

The wavelength of the flashlamp-pumped pulsed dye laser is 510nm which is not able penetrate into deeper tattoos. It is effective for the treatment of brightly colored tattoos such as those that use red, purple and orange inks. But this laser has a major side effect, which is bruising.[4,7-9]

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