

ABSTRACTS: UP DATING LASER

1 Modelling the assessment of port wine stain parameters from skin surface temperature following a diagnostic laser pulse.

AU: Gabay-S; Lucassen-GW; Verkruysse-W; van-Gemert-MJ

SO: Lasers-Surg-Med. 1997; 20(2): 179-87

AB: The Monte Carlo (MC) method was used to calculate the deposited laser energy into a port wine stain skin model following irradiation by a diagnostic laser pulse at 577 nm. The heat equation was solved numerically, using the deposited energy profile as the source term, yielding the temperature-time course at the skin surface. Subtraction of "bloodless" skin signal from that of the skin containing blood vessels gives us the net contribution of a heated dermal blood vessel to the skin surface temperature-time behaviour. RESULTS: The net blood vessel signal shows heat-diffusion behaviour and was found to be sensitive to the dermal blood vessel depth and diameter. The time delay for the peak signal temperature to occur depends quadratically on the blood vessel depth. The peak temperature relates linearly to the blood vessel diameter. The degree of epidermal melanin content can also be determined from the immediate temperature rise of the signal. CONCLUSION: The proposed method easily enables assessment of the blood vessel depth and diameter as well as the epidermal melanin content in a skin model. The method can be applied to a real PWS when using the adjacent normal skin as a reference.

2. Pulsed dye laser efficacy as initial therapy for warts and against recalcitrant verrucae.

AU: Jacobsen-E; McGraw-R; McCagh-S

SO: Cutis. 1997 Apr; 59(4): 206-8

AB: Vascular laser therapy appears to be effective as therapy in the treatment of verrucae, especially those that have not been eradicated by other treatments. Patients who had received no prior treatment for their warts were less likely to proceed with therapy, but had a satisfactory clearance rate with minimal treatment.

3 - Treatment of nevus of Ota by Q-switched ruby laser.

AU: Shimbashi-T; Hyakush; Okinaga-M

SO: Aesthetic-Plast-Surg. 1997 Mar-Apr; 21(2): 118-21

AB: Satisfactory cosmetic results were achieved after Q-switched ruby laser therapy for nevus of Ota. The effective rate tended to be higher in patients who underwent more irradiation treatments and were observed for a longer period of time.

4. Skin resurfacing with laser in Asians.

AU: Kim-JW; Lee-JO

SO: Aesthetic-Plast-Surg. 1997 Mar-Apr; 21(2): 115-7

AB: The new Tru-Pulse CO2 Laser (Tissue Technology, Inc.) provides a unique pulse duration of 60 microseconds designed to reduce thermal damage and designed to promote rapid healing. Laser resurfacing with the Tru-Pulse Laser provides many potential benefits.

5. Treatment of small nevomelanocytic nevi with a Q-switched ruby laser.

AU: Vibhagool-C; Byers-HR; Grevelink-JM

SO: J-Am-Acad-Dermatol. 1997 May; 36(5 Pt 1): 738-41

AB: The Q-switched ruby laser is effective in removing small melanocytic nevi. However, some might recur depending on the depth of the nevomelanocytic nests.

6 The flashlamp-pumped dye laser and dermabrasion in psoriasis-further studies on the reversed Kobner phenomenon.

AU: Bjerring-P; Zachariae-H; Sogaard-H

SO: Acta-Derm-Venereol. 1997 Jan; 77(1): 59-61

AB: The data suggest that the mechanism of the reversed Kobner phenomenon, which is thought to be responsible for the results of dermabrasion, is partly due to destruction of the dermal papillary vasculature. The clinically unsatisfactory results can be explained by the great variety in thickness of plaques and in variability of penetration of the laser light. Measurements of absorption and scattering properties of plaques scheduled for laser treatment could probably allow improvements in the technique by optimizing laser beam diameter and pulse duration as well as wavelength and energy levels. The use of the dye laser is far less traumatic to the patient than dermabrasion.

7. A critical appraisal of high-energy pulsed carbon dioxide laser facial resurfacing for acne scars.

AU: Apfelberg-DB

SO: Ann-Plast-Surg. 1997 Feb; 38(2): 95-100

AB: Laser resurfacing for severe atrophic acne achieves only moderate results, while treatment for mild acne can provide excellent results.

8. Effect of percutaneous local anaesthetics on pain reduction during pulse dye laser treatment of portwine stains.

AU: McCafferty-DF; Woolfson-AD; Handle; Allen-G

SO: Br-J-Anaesth. 1997 Mar; 78(3): 286-9

AB: When EMLA and 4% amethocaine gel were compared, the amethocaine preparation was significantly better ($P < 0.05$, VAS; $P < 0.005$ VRS) than EMLA in reducing pain caused by the laser treatment.

9. Mutagenic activity of high-energy 532 nm ultra-short laser pulses.

AU: Leavitt-J; Fatone-M; Hestdalen-C; Obringer-JW; Tillinghast-HS Jr

SO: Radiat-Res. 1997 Apr; 147(4): 490-4

AB: The preliminary findings suggest that 460-590 nm visible-light lasers may be mutagenic to mammalian cells either as a result of two-photon absorption or through some other photochemical process that damages DNA.

10. Effective removal of certain skin pigment spots (lentigines) using the Q-switched ruby laser.

AU: Njoo-MD; Westerhof-W

SO: Ned-Tijdschr-Geneskd. 1997 Feb 15; 141(7): 327-30

AB: Q-switched ruby laser (QSRL) is a successful treatment for lentigines. For lesions of this nature, QSRL is to be preferred above conventional forms of therapy, such as cryotherapy, chemical peeling and abrasion.

11. A patient's questionnaire evaluation of krypton laser treatment of facial telangiectases. A comparison with the copper vapor laser.

AU: Thibault-PK

SO: Dermatol-Surg. 1997 Jan; 23(1): 37-41

AB: The krypton laser was as effective as the copper vapor laser in treating facial telangiectasia. In addition, there was a significant reduction in pain experienced and the incidence of adverse effects was reduced in patients treated with the krypton laser. CONCLUSION: Selection of pulse duration to approximate the thermal relaxation time of the target blood vessel is critical in minimizing adverse effects of laser photocoagulation to facial telangiectases.

12. KTP laser and neutral red phototherapy of human squamous cell carcinoma.

AU: VanderWerf-QM; Castro-DJ; Nguyen-RD; Paiva-MB; Chao-KH; Santillanes-ME; Saxton-RE

SO: Laryngoscope. 1997 Mar; 107(3): 316-20

AB: This study demonstrates that neutral red is an excellent cancer cell photosensitizer in vitro, and, after adding additional in vivo preclinical testing, may prove to be a useful agent in photodynamic destruction of head and neck tumors.

13. The treatment of port-wine stains with the pulsed dye laser at 600 nm.

AU: Edstrom-DW; Ros-AM

SO: Br-J-Dermatol. 1997 Mar; 136(3): 360-3

AB: In conclusion, 585 nm remains the wavelength of choice in treatment of PWS with the pulsed dye laser. However, in cases that do not respond satisfactorily with 585 nm, it may be worth trying 600 nm with a fluence that is at least 1.5-2 times the 585 nm fluence.

14. Treatment of lichen sclerosus with carbon dioxide laser vaporization.

AU: Kartamaa-M; Reitamo-S

SO: Br-J-Dermatol. 1997 Mar; 136(3): 356-9

AB: We have treated 10 patients (five women and five men) with lichen sclerosus (LS), verified by histopathological studies from skin biopsies, with CO₂ laser vaporization. The present study suggests that carbon dioxide vaporization may be an effective treatment of skin lesions in LS.

15. Copper vapour laser treatment of port-wine stains in brown skin

AU: Chung-JH; Koh-WS; Lee-DY; Lee-YS; Eun-HC; Youn-JH

SO: Australas-J-Dermatol. 1997 Feb; 38(1): 15-21

AB: Although copper vapour laser treatment of port-wine stains in brown skin is not as selective as in white skin because of epidermal melanin, our clinical data demonstrate the usefulness of the copper vapour laser for the treatment of port-wine stains in brown skin.

16. Treatment of pyogenic granuloma in children with the flashlamp-pumped pulsed dye laser.

AU: Tay-YK; Weston-WL; Morelli-JG

SO: Pediatrics. 1997 Mar; 99(3): 368-70

AB: Twenty-two children with solitary pyogenic granulomas were treated with a vascular-specific (585 nm), pulsed (450 microseconds) dye laser using a 5-mm spot size with a laser energy of 6 to 7 J/cm² without anesthesia. In 20 patients (91%), laser treatment was successful. CONCLUSION: Pulsed dye lasers are effective and safe for the treatment of small pyogenic granulomas in children and should be considered a treatment option.