F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

9:00 am - 9:10 am

11263 - A Comparison of the Efficacy of Ablative Fractional Laser-assisted Photodynamic Therapy according to the Density of Ablative Laser Channel in the Treatment of Actinic Keratosis / Yeo-Rye Cho, MD

Background: The pretreatment of Er:YAG ablative fractional laser(AFL) has known to be beneficial in performing photodynamic therapy(PDT) for actinic keratosis.

Type of Study: Prospective, randomized, controlled study.

Methods: In total, 312 AK lesions were randomized to 5.5%, 11%, or 22% AFL channel density groups and treated with one session of PDT after AFL therapy. Treatment efficacy was determined based on the regression of lesions over time; accumulated levels of PpIX, side effects, and cosmetic outcomes were assessed.

Results: Treatment with 22% density was significantly more effective than that with 5.5% density after 12 months (complete response rates: 81.1% vs. 60.9%, p=0.003). The treatment outcome of AK with severe hyperkeratosis was more affected by variations in laser density, with the 22% density group showing a significantly better complete response rate than the 5.5% group (68.8% vs. 38.2%, p=0.043). There were no differences in PpIX accumulation, side effects, cosmetic outcomes.

Conclusion: AFL-PDT with higher laser density showed a better complete response rate with reduced recurrence, especially in AK with severe hyperkeratosis.

REFERENCES

1. Tarstedt M, Rosdahl I, Berne B, et al. A randomized multicenter study to compare two treatment regimens of topical methyl aminolevulinate (Metvix)-PDT in actinic keratosis of the face and scalp. Acta Derm Venereol. 2005;85(5):424-8.
2. Dreno B, Amici JM, Basset-Seguin N, et al. Management of actinic keratosis: a practical report and treatment algorithm from AKTeam™ expert clinicians. J Eur Acad Dermatol Venereol. 2014;28(9):1141-9.
3. Ko DY, Jeon SY, Kim KH, et al. Fractional erbium: YAG laser-assisted photodynamic therapy for facial actinic keratoses: a randomized, comparative, prospective study. J Eur Acad Dermatol Venereol. 2014;28(11):1529-39.
4. Choi SH, Kim KH, Song KH. Effect of Methyl aminolevulinate photodynamic Therapy with and without ablative fractional laser treatment in patients with microinvasive squamous cell carcinoma: A Randomized Clinical Trial. JAMA Dermatol. 2017;153(3):289-95. 5. Olsen EA, Abernethy ML, Kulp-Shorten C, et al. A double-blind, vehicle-controlled study evaluating masoprocol cream in the treatment of actinic keratoses on the head and neck. J Am Acad Dermatol. 1991;24(5Pt1):738-43.

6. Smits T, Robles CA, van Erp PE, et al. Correlation between macroscopic fluorescence and protoporphyrin IX content in psoriasis and actinic keratosis following application of aminolevulinic acid. J Invest Dermatol. 2005;125(4):833-9.
7. Menezes PF, Requena MB, Bagnato VS. Optimization of photodynamic therapy using negative pressure. Photomed Laser Surg. 2014;32(5):296-301.
8. Choe YB, Rim JH, Youn JI. Quantitative assessment of narrow-band UVB induced tanning during phototherapy in Korea. Photodermatol Photoimmunol Photomed. 2002;18(3):127-30.
9. Seitz JC, Whitmore CG. Measurement of erythema and tanning responses in human skin using a tri-stimulus colorimeter. Dermatologica. 1988;177(2):70-5.
10. Bay C, Lerche CM, Ferrick B, et al. Comparison of physical pretreatment regimens to enhance protoporphyrin IX uptake in photodynamic therapy: a randomized clinical trial. JAMA Dermatol. 2017;153(4):270-8.
11. Gerritsen MJ, Smits T, Kleinpenning MM, et al. Pretreatment to enhance protoporphyrin IX accumulation in photodynamic therapy. Dermatology. 2009;218(3):193-202.
12. Haedersdal M, Sakamoto FH, Farinelli WA, et al. Fractional CO2 laser-assisted drug delivery. Lasers Surg Med. 2010;42(2):113-22.
13. Haak CS, Christiansen K, Erlendsson AM, et al. Ablative fractional laser enhances MAL-induced PpIX accumulation: Impact of laser channel density, incubation time and drug concentration. J Photochem Photobiol B. 2016;159:42–8
14. Lerche CM, Fabricius S, Philipsen PA, et al. Correlation between treatment time, photobleaching, inflammation and pain after photodynamic therapy with methyl aminolevulinate on tape-stripped skin in healthy volunteers. Photochem Photobiol Sci. 2015;14(5):875-82.
15. Fabricius S, Lerche CM, Philipsen PA, et al. The relation between methyl aminolevulinate concentration and inflammation after photodynamic therapy in healthy volunteers. Photochem Photobiol Sci. 2013;12(1):117-23.
16. Chan HH, Manstein D, Yu CS, et al. The prevalence and risk factors of post-inflammatory hyperpigmentation after fractional resurfacing in Asians. Lasers Surg Med. 2007;39(5):381-5.
17. You HJ, Kim DW, Yoon ES, et al. Comparison of four different lasers for acne scars: Resurfacing and fractional lasers. J Plast Reconstr Aesthet Surg. 2016;69(4):e87-95.
18. Ashraf M Badawi, Mai Abdelraouf Osman. Fractional erbium-doped yttrium aluminum garnet laser-assisted drug delivery of hydroquinone in the treatment of melisma. Clin Cosmet Investig Dermatol. 2018;11:13–20.
19. Metelitsa AI, Alster TS. Fractionated laser skin resurfacing treatment complications: a review. Dermatol Surg. 2010;36(3):299-306.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

9:10 am - 9:20 am

10093 - Efficacy of Minoxidil 15% Solution Plus Low-Level Light Therapy Versus Low-Level Light Monotherapy in the Treatment of Androgenetic Alopecia / Mohamad Goldust, MD

Background: Currently, only two approved treatments exist for androgenetic alopecia (AGA): finasteride and minoxidil 5% solution. Increasing the dosage of topical minoxidil may increase the number of responders. low-level laser therapy (LLLT) has been used as alternative treatments for AGA.1-4 This study aimed at evaluating the efficacy of adding LLLT to minoxidil 15 % topical solution in the treatment of AGA.

Type of study: Randomized, controlled clinical trial study.

Methods: In this study, 62 patients were recruited. The patients were randomly divided into two groups. The first group was treated with minoxidil 15 % topical solution twice per day plus LLLT 3 times weekly for 30 minutes each and the second group received minoxidil 15 % topical solution twice per day. Global scalp photography, phototrichogram assessment, the investigator's global assessment (IGA) of hair regrowth, and the subject's assessment of the treatment satisfaction were used for evaluation.

Results: Both modalities were effective with comparable results in all parameters. After 24 weeks of treatment, the combination therapy exhibited significantly greater hair coverage than minoxidil 15 % monotherapy ($p < .001$). A significantly greater improvement from baseline in hair thickness, hair count, hair coverage, and IGA were also observed in first group at the 12- and 24-week visits. No serious adverse events were observed.

Conclusion: This is the first study to demonstrate the potentially beneficial effect of a higher dosage of minoxidil in combination with LLLT in treatment of AGA. Further studies with larger samples, longer follow-up are necessary to determine the clinical effectiveness of this novel modality.

REFERENCES

1. Puig CJ, Reese R, Peters M. Double-Blind, Placebo-Controlled Pilot Study on the Use of Platelet-Rich Plasma in Women With Female Androgenetic Alopecia. Dermatol Surg. 2016 Nov;42(11):1243-1247.
2. McCoy J, Goren A, Kovacevic M, Shapiro J. Minoxidil dose response study in female pattern hair loss patients determined to be non-responders to 5% topical minoxidil. J Biol Regul Homeost Agents. 2016 Oct-Dec;30(4):1153-1155.
3. Faghihi G, Mozafarpoor S, Asilian A, Mokhtari F, Esfahani AA, Bafandeh B et al. The effectiveness of adding low-level light therapy to minoxidil 5% solution in the treatment of patients with androgenetic alopecia. Indian J Dermatol Venereol Leprol. 2018 Sep-Oct;84(5):547-553.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM

Salon H

4. Mai-Yi Fan S, Cheng YP, Lee MY, Lin SJ, Chiu HY. Efficacy and Safety of a Low-Level Light Therapy for Androgenetic Alopecia: A 24-Week, Randomized, Double-Blind, Self-Comparison, Sham Device-Controlled Trial. Dermatol Surg. 2018 Nov;44(11):1411-1420.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

9:20 am - 9:30 am

11176 - Treatment of Post Burn/Hypertrophic Scars Using a Non-insulated Smooth Motion, Electronically Controlled Radiofrequency Microneedles System Combined with Intralesional Triamcinolone Acetonide & 5 Fluorouracil (5-FU) / Atul Kathed, MBBS, DVD

Background: Severe scarring is associated with substantial physical and psychological distress. A novel minimally invasive technology for treating scars use radiofrequency (RF) emitting microneedles for both mechanical disruption of fibrotic strands and heat-mediated collagen remodeling. This technology is than combined with drug delivery of corticosteroid & 5-FU.

Study Design & Methods: 15 patients (12-65 years) with severe post burn scars were treated. 10-25 treatment sessions at 45-60 days intervals were performed using a multisource RF treatment platform with a microneedle RF applicator. Immediately after each RF session, triamcinolone acetonide & 5-FU (diluted1:1) were injected intralesionally. Prior to treatment, topical anesthesia was applied for 40-60 minutes. Efficacy was evaluated by the Vancouver Scar Scale (VSS) and B&A photos. Power range was 13-20W, pulse width 80-140msec and needles depth 3.5mm.

Results: Improvement of at least 1 VSS grade was observed 1 and 3 months post treatment sessions. B&A photos show improvement in scars and skin texture. No adverse events were reported during and after the treatments.

Conclusions: The presented study results show that drug delivery of corticosteroid & 5-FU combined with RF microneedle treatment provides a highly effective minimally invasive treatment for post burn/hypertrophic scars and skin texture improvement with a short downtime and high subjective satisfaction rates.

REFERENCES

1. Shah VV, Aldahan AS, Mlacker S, Alsaidan M, Samarkandy S & Nouri K. 5-Fluorouracil in the Treatment of Keloids and Hypertrophic Scars: A Comprehensive Review of the Literature. Dermatol Ther (Heidelb) 2016; 6(2): 169-83.
2. Harth Y, Elman M, Ackerman E, Frank I. Depressed acne scars— effective, minimal downtime treatment with a novel smooth motion non-insulated microneedle radiofrequency technology. J Cosmet Dermatol Sci Appl 2014; 4:212– 8.
3. Naouri M, Mazer JM. Non-insulated microneedle fractional radiofrequency for the treatment of scars and photoaging. J Euro Acad Dermatol 2016; 30:499–502.
4. Song H, Tan J, Fu Q, Huang L, Ao M. Comparative efficacy of intralesional triamcinolone acetonide injection during early and static stage of pathological scarring. J Cosmet Dermatol 2018; doi: 10.1111/jocd.12690.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

9:30 am - 9:40 am

9973 - Oral and Intra-incisional Antibiotic Prophylaxis in Mohs Surgery: A systematic review and meta-analysis / Ahmed Mourad, BSc

Introduction: Antibiotic prophylaxis is used to prevent surgical site infections (SSIs) that can cause significant morbidity from pain, delayed wound healing and impaired cosmesis. High-risk patients receiving Mohs Surgery are often given antibiotic prophylaxis. Evidence with respect to oral and intra-incisional antibiotic prophylaxis is inconsistent.

Methods: A comprehensive literature search was performed to include eligible randomized controlled trials (RCTs) that investigated rates of SSIs vs. placebo following administration of oral or intra-lesional antibiotic prophylaxis in Mohs surgery. Calculated risk ratios were calculated and a pooled meta-analyses of these risk ratios was performed using a random-effects model.

Results : Five randomized controlled trials (RCTs) with 2,919 patients receiving Mohs Micrographic

Surgery (MMS) met the inclusion criteria for the current study. Three of the five studies were

RCTs (n= 839) investigated oral antibiotic prophylaxis vs. placebo in MMS for the ear and nose.

The meta-analysis revealed no difference between antibiotic prophylaxis and placebo for SSI reduction (pooled RR: 0.41 (95% CI: 0.08-1.95), I2 =82%). Two of the five included RCTs (n= 2080) reported data for pre-operative intra-incisional antibiotic prophylaxis in MMS at various sites. Both studies showed statistically significant reductions in the SSI following intra-incisional antibiotic prophylaxis (pooled RR: 0.18 (95% CI: 0.05-0.71), I2 =26%).

Discussion & Conclusion: In conclusion, our meta-analysis showed no statistically significant reduction in SSI following oral antibiotic prophylaxis vs. placebo. Intra-incisional antibiotic prophylaxis, a methodology that is not widely used, may be a viable prophylactic option given the significant reduction compared to placebo in this pooled analysis.

REFERENCES

1. Wright TI, Baddour LM, Berbari EF et al. Antibiotic prophylaxis in dermatologic surgery: advisory statement 2008. Journal of the American Academy of Dermatology 2008; 59: 464-73.
2. Yuste M, Romo A, de Unamuno P. [Antibiotic prophylaxis in dermatologic surgery]. Actas dermo-sifiliograficas 2008; 99: 683-9.
3. Rosengren H, Heal CF, Buttner PG. Effect of a single prophylactic preoperative oral antibiotic dose on surgical site infection following complex dermatological procedures on the nose and ear: a prospective, randomised, controlled, double-blinded trial. BMJ open 2018; 8: e020213.

4. Huether MJ, Griego RD, Brodland DG et al. Clindamycin for intraincisional antibiotic prophylaxis in dermatologic surgery. Archives of dermatology 2002; 138: 1145-8.
5. Cherian P, Gunson T, Borchard K et al. Oral antibiotics versus topical decolonization to prevent surgical site infection after Mohs micrographic surgery--a randomized, controlled trial. Dermatologic surgery 2013; 39: 1486-93.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

9:40 am - 9:50 am

11351 - Intralesional Tranexamic Acid Versus Platelet Rich Plasma in Melasma Treatment. A Split Face Comparative Study / Ahmed Abdelshafy, MBBch, MSc, MD

Background: Melasma is an acquired hypermelanosis characterized by light to dark-brown macules and patches on sun-exposed areas, especially on the face. Treatment of melasma is challenging because it is often recalcitrant to therapy, especially in the dermal type. Both intradermal injection of tranexamic acid (TA) and platelet rich plasma (PRP) in melasma are promising modalities of treatment.

Objective: To evaluate and compare the efficacy and safety of intradermal injection of TA and PRP in the the treatment of different types of melasma.

Materials and Methods: Twenty three melasma patients were included in this study. In all patients the right side of the face was treated by intradermal injection of TA and the left side of the face was treated by intradermal injection of PRP. The patients were received a session every month for 3 months. Evaluation of patients was done by photographing and modified MASI score.

Results: Both groups showed improvement of melasma but improvement was significantly higher in patients treated by intralesional TA. Side effects were minimal. There was no worsening of clinical response for 3 months of follow up.

Conclusions: In conclusion, this is the first study to compare intradermal injection of PRP versus TA in a split face manner for the treatment of melasma. The 2 modalities showed a promising efficacy and safety.

REFERENCES

1. Lee JH, Park JG, Lim SH, et al (2006): Localized intradermal micro injection of tranexamic acid for treatment of melasma in Asian patient: Apreliminary clinical trial. Dermatol surg; 32: 626-31.
2. Budamakuntla L, Loganathan E, Suresh H, et al (2013): A randomised, open-label, comparative study of tranexamic acid microinjections and tranexamic acid with microneedling in patients with melasma. J Cutan Aesthet Surg; 6(3): 139–43.
3. Saki N, Darayesh N and Heiran A (2018): Comparing the efficacy of topical hydroquinone 2% versus intradermal tranexamic acid microinjections in treating melasma: A split-face controlled trial. J Dermatolog Treat; 29(4): 405-10.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

9:50 am - 10:00 am

11259 - Safety and Efficacy of Nano-pulse Stimulation in the Treatment of Patients with Sebaceous Hyperplasia / Girish Munavalli, MD, MHS, FACMS

Background: The NPS system delivers a timed series of low energy, nanosecond pulses. This energy-based non-thermal technology targets cellular structures of the epidermis and dermis, such as sebaceous glands.

Demographics: 16 subjects were in this single-center subset, with a total of 47 lesions treated. Ages were 31-71 years, including Fitzpatrick classes II-IV. Some SH lesions failed previous treatment with other modalities, including: electrocautery, topical retinoids, and cryotherapy.

Methods: Subjects presented 2-5 SH lesions, with one designated as the control. After standardized and dermatoscopic photography, lesions received treatment with either a 1.5 x 1.5 or 2.5 x 2.5 mm treatment tip. Follow-up visits occurred on days 5, 30, and 60 days after 1st or 2nd treatment. Lesions were clinically assessed by the investigator on a 4-point global assessment scale. Any lesion(s) rated as partially cleared or not cleared at the 30-day visit were eligible for a second treatment.

Results: At 30-days post-treatment, 85.1% of lesions were rated cleared or mostly cleared. At 60-days 100% of lesions were rated cleared (91.5%) or mostly cleared (8.5%). 14.9% (n=7) and 8.5% (n=4) exhibited mild and moderate hyperpigmentation at 30-days, respectively. At day 60, 95.7% (n=45) showed no hyperpigmentation and 4.3% (n=2) showed mild hyperpigmentation. 12.8% (n=6) had mild surface volume loss at 60 days, which reduced to 6.4% at 90 days. 85% of patients were satisfied or mostly satisfied with their treatments.

REFERENCES

1. Kaufman DM, M., Jauregui, L., Ebbers, E., Nuccitelli, R., Knape, W.A., Uecker, D., Mehregan, D. A Dose-Response study of a novel method of selective tissue modification of cellular structures in the skin with Nano-Pulse Stimulation™. Lasers Surg Med 2019;in press.
2. Nuccitelli R, McDaniel A, Anand S, Cha J, Mallon Z, Berridge JC et al. Nano-Pulse Stimulation is a physical modality that can trigger immunogenic tumor cell death. Journal for immunotherapy of cancer 2017;5:32.
3. Skeate JG, Da Silva DM, Chavez-Juan E, Anand S, Nuccitelli R , Kast WM. Nano-Pulse Stimulation induces immunogenic cell death in human papillomavirus-transformed tumors and initiates an adaptive immune response. PloS one 2018;13:e0191311.
4. Ataş H, Gönül M. Evaluation of the Efficacy of Cryosurgery in Patients With Sebaceous Hyperplasia of the Face. J Cutan Med Surg. 2017;21(3):202-206.
5. Iacobelli J, Harvey NT, Wood BA. Sebaceous lesions of the skin. Pathology. 2017;49(7):688-697.
6. Simmons BJ, Griffith RD, Falto-Aizpurua LA, et al. Light and laser therapies for the treatment of sebaceous gland hyperplasia a review of the literature. J Eur Acad Dermatol Venereol. 2015;29(11):2080-2087.

7. Liu YS, Cheng YP, Liu CI, Yang CY. Presenile diffuse familial sebaceous hyperplasia successfully treated with low-dose isotretinoin: A report of two cases and review of the published work. J Dermatol. 2016;43(10):1205-1208.
8. Arif T. Salicylic acid as a peeling agent: a comprehensive review. Clin Cosmet Investig Dermatol. 2015;8:455-461.
9. Wang S-P, Chang Y-J, Chi C-C, Wang S-H, Tsai T-H. Using pulsed dye laser to treat sebaceous hyperplasia: comparison of short and long pulse-duration pulsed dye laser. In. Vol 37. Taiwan: Dermatologica Sinica; 2017:119 -123.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

10:00 am - 10:10 am

10071 - No Local Recurrence for Extramammary Paget's Disease (EMPD) Treated with Standard and Modified Mohs Micrographic Surgery (MMS) with Immunostaining for Cytokeratin-7: Methodology and report of 20 cases / Julie Bittar, BA

Introduction: Extramammary Paget Disease (EMPD) is a rare intraepithelial neoplasm with an incidence ranging from 0.6 to 0.11 per 100,000. Site directed surgery for EMPD has demonstrated significantly better outcomes compared to patients who undergo no intervention (HR for death 0.44). This retrospective cohort study aims to determine the local recurrence rate at our single-site center for patients with EMPD treated with Mohs Micrographic Surgery (MMS) and assess the impact of MMS for EMPD on quality of life.

Methods: From 2009 to 2016, twenty cases of EMPD in 19 patients were treated with MMS with immunostaining to CK-7 at the University of Pennsylvania and met all inclusion criteria for this study. Chart review and telephone calls were conducted to measure anatomic location, stages required for clearance, sections, follow-up time, and local recurrence for each of these patients. Patients were also asked to complete a survey measure impact of surgery on quality of life. Local recurrence was defined to be growth within the scar and/or graft where the primary tumor was excised.

Results: The majority of lesions were on the genitalia (18/20, 90%). Most lesions (13/20, 65%) were cleared with 1 surgical stage. Mean follow up time was 45.1 months and the median (range) was 37.5 (13- 93) months. No tumors (0/20, 0%) treated with standard MMS or modified MMS experienced local recurrence. The majority of EMPD patients reported satisfaction with their scar (17/19, 89%), no pain/discomfort (16/19, 84%), decreased sensation (14/19, 74%), tightness (14/19, 74%), or change in physical function (14/19, 74%).

Conclusion: Our cohort of patients with EMPD treated with MMS experienced no local recurrence with preserved function and high rates of satisfaction in the majority of patients.

REFERENCES

1.van der Zwan JM, Siesling S, Blokx WA, Pierie JP, Capocaccia R. Invasive extramammary Paget's disease and the risk for secondary tumours in Europe. European journal of surgical oncology : the journal of the European Society of Surgical Oncology and the British Association of Surgical Oncology. 2012;38(3):214-221.
2.Siesling S, Elferink MA, van Dijck JA, Pierie JP, Blokx WA. Epidemiology and treatment of extramammary Paget disease in the Netherlands. European journal of surgical oncology : the journal of the European Society of Surgical Oncology and the British Association of Surgical Oncology. 2007;33(8):951-955.
3.Karam A, Dorigo O. Treatment outcomes in a large cohort of patients with invasive Extramammary Paget's disease. Gynecologic oncology. 2012;125(2):346-351.

4.Lopes Filho LL, Lopes IM, Lopes LR, Enokihara MM, Michalany AO, Matsunaga N. Mammary and extramammary Paget's disease. Anais brasileiros de dermatologia. 2015;90(2):225-231.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

10:10 am - 10:20 am

10008 - Running Cutaneous Suture Spacing During Linear Wound Closures and the Effect on Wound Cosmesis of the Face and Neck: A randomized evaluator blind split-wound comparative effectiveness trial / Aunna Pourang, MD

Background: Surgeons have varying opinions on ideal cutaneous suture spacing for optimal cosmetic outcomes, and there are no previous studies concerning this topic. We conducted a split-wound, prospective, randomized, evaluator blind study to compare the outcome and wound cosmesis achieved with running cutaneous sutures spaced 2 mm versus 5 mm apart.

Methods: 50 surgical fusiform wounds resulting from a Mohs micrographic procedure or surgical excision, on the head or neck, with predicted closure lengths of at least 3 cm were randomized to running cuticular closure with 2 mm spacing on half and 5 mm spacing on the other half. At three months, the patient and 2 blinded observers evaluated each scar using the Patient and Observer Scar Assessment Scale (POSAS).

Results: The mean sum (SD) of the POSAS observer component scores was 10.7 (4.3) for the 2 mm interval side and 10.8 (3.5) for the 5 mm side at 3 months (P= 0.85). There mean sum (SD) of the patient component for POSAS score between the 2 mm interval side (10.2 [4.7]) and the 5 mm interval side (11.5 [6.4]) at 3 months (P= 0.24). No statistically significant difference was observed in mean (SD) scar width between the two intervention groups (2 mm side: 0.9 (0.6); 5 mm side 0.8 (0.4); P=0.15).

Conclusions and Relevance: No statistically significant difference in wound cosmesis or total complications were noted between running cuticular sutures spaced 2 mm vs 5 mm apart. Both suturing techniques resulted in similar cosmetic outcomes and complication rates.

REFERENCES

1. Thomsen TW, Barclay DA, Setnik GS. Videos in clinical medicine. Basic laceration repair. N Engl J Med. 2006;355(17):e18.
2. Moody BR, McCarthy JE, Linder J, Hruza GJ. Enhanced cosmetic outcome with running horizontal mattress sutures. Dermatol Surg. 2005;31(10):1313-1316.
3. Wang AS, Kleinerman R, Armstrong AW, et al. Set-back versus buried vertical mattress suturing: Results of a randomized blinded trial. Journal of the American Academy of Dermatology. 2014.
4. Custis T, Armstrong AW, King TH, Sharon VR, Eisen DB. Effect of Adhesive Strips and Dermal Sutures vs Dermal Sutures Only on Wound Closure: A Randomized Clinical Trial. JAMA Dermatol. 2015;151(8):862-867.
5. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)--a metadata-driven methodology and workflow process for providing translational research informatics support. J Biomed Inform. 2009;42(2):377-381.
6. Draaijers LJ, Tempelman FR, Botman YA, et al. The patient and observer scar assessment scale: a reliable and feasible tool for scar evaluation. Plast Reconstr Surg. 2004;113(7):1960-1965; discussion 1966-1967.

7. Alam M, Posten W, Martini MC, Wrone DA, Rademaker AW. Aesthetic and functional efficacy of subcuticular running epidermal closures of the trunk and extremity: a rater-blinded randomized control trial. Arch Dermatol. 2006;142(10):1272-1278.
8. Kappel S, Kleinerman R, King TH, et al. Does wound eversion improve cosmetic outcome?: Results of a randomized, split-scar, comparative trial. Journal of the American Academy of Dermatology. 2015.
9. Jina H, Simcock J. Median sternotomy scar assessment. N Z Med J. 2011;124(1346):57-62.
10. Mosterd K, Arits AH, Nelemans PJ, Kelleners-Smeets NW. Aesthetic evaluation after non-invasive treatment for superficial basal cell carcinoma. J Eur Acad Dermatol Venereol. 2013;27(5):647-650.
11. Eom JM, Ko JH, Choi JS, Hong JH, Lee JH. A comparative cross-sectional study on cosmetic outcomes after single port or conventional laparoscopic surgery. Eur J Obstet Gynecol Reprod Biol. 2013;167(1):104-109.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

10:20 am - 10:30 am

11152 - Successful Treatment of Vitiligo by Needling with Topical 5 Fluorouracil / Maya Vedamurthy, M.D (Derm) D.D. FRCP(Glasg) FRCP(Edin). MAMS

Background: Vitiligo is a common, acquired, progressive disorder characterized by depigmentation of the skin and mucous membrane. It often poses a therapeutic challenge to the concerned dermatologist due to its chronicity. Granting the availability of copious treatment options, a reliable therapeutic modality is yet to come forth because of the varying degrees of response.

Type of study: This study comprises a case series of fifteen patients with recalcitrant vitiligo that intents to evaluate the effectiveness of needling with topical 5 fluorouracil.

Methods: Fifteen patients with stable vitiligo who had been on other modalities of treatment for 2 to 3 years without much improvement were included in this study. These patients were subjected to needling using a sterile 26G needle followed by the application of 5 fluorouracil. The procedure was repeated every two weeks for three months, in addition to their ongoing therapy.

Results: All the patients, at the end of twelve weeks, showed more than 75% improvement in terms of repigmentation of the achromic patches.

Conclusion: Needling with 5 fluorouracil is a simple, safe, promising, cost-effective treatment with minimal side effects and greater patient satisfaction.

REFERENCES

1. Vedamurthy M, Moorthy A, Samuel S (2016) Successful Treatment of Vitiligo by Needling with Topical 5 Fluorouracil. Pigmentary Disorders 3:242. doi:10.4172/2376-0427.1000242
2. Santosh SK, Sushantika, Mohan L, Gupta AK, Mohammad A, Kumar N. Treatment of Vitiligo with 5-Fluorouracil after Microneedling of the lesion. Int J Sci Stud 2018;5(11):125-127.
3. Sethi S, Mahayan BB, Gupta RR, Ohri A (2007) Comparative evaluation of the therapeutic efficacy of dermabrasion, dermabrasion combined with topical 5% 5-fluorouracil cream and dermabrasion combined with topical placentrex gel in localized stable vitiligo. Int J Dermatol 46: 875-879.
4. Shashikiran AR, Gandhi S, Murugesh SB, Kusagur M, Sugareddy. Efficacy
of topical 5% fluorouracil needling in vitiligo. Indian J Dermatol Venereol
Leprol [Serial Online] 2018;84:203-5.
4. Waldorf DS, Engel ML, Van Scott EJ (1966). Inhibition of wound epithelialization by topical 5-fluorouracil. Arch Dermatol94: 786-789.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

10:30 am - 10:40 am

11249 - A Comparison of the Efficacy and Safety of Fractional CO2 Laser and Fractional Er:YAG Laser for the Treatment of Xanthelasma Palpebrarum : A multicenter randomized split-face controlled trial / Hisao Han Tuan, MD, MS

Objective: Xanthelasma palpebrarum (XP) is a form of cutaneous xanthoma that presents as collections of yellowish papules or plaques around the eyelids or canthus, affecting patients cosmetically. This study is a randomized split-face controlled trial that will compare the efficacy and safety of fractional CO2 laser to that of fractional Er:YAG laser.

Methods: Two centers recruited patients diagnosed with XP with symmetrical bilateral lesions. One side, chosen randomly, was assigned to group C treated with fractional CO2 laser while the other side was assigned to group E with fractional Er:YAG laser. All subjects received up to 5 treatments, with a 4-weeks interval . With a total of five follow-up visits; treatment efficacy, safety, and patient satisfaction were evaluated on follow-up visits. Treatment efficacy was determined by lesion clearance rate and evaluated with a 6-point grades: 0, worse; 1, 0–24% clearing; 2, 25–49% clearing; 3, 50–74% clearing; 4, 75–99% clearing; and 5, 100% clearing. Grade 0–1, 2–5 and 4–5 were defined as “No improvement”, “Improvement” and “Excellent improvement”, respectively.

Results: A total of 39 subjects（82 lesions）completed assessment. Efficacy evaluation based on the percentage of “Excellent Improvement” on the fifth, fourth and third follow-up for group C and group E, was 95.12% vs. 85.37% ,90.24% vs. 63.41%, and 60.98% vs. 39.02%, respectively $p<0.05$. There were two cases of hyperpigmentation (5%) and one case of mild hypopigmentation (2%) . There were two cases of recurring lesions at 6 and 9 months respectively.

Conclusion: Both fractional CO2 laser and fractional Er:Yag laser are effective and safe in treating XP, and provide excellent patient satisfaction. In this study trial, fractional CO2 laser therapy appears to superior since a fewer treatments are required for patients to show significant clinical improvement.

REFERENCES

1. Bolognia JL, Jorizzo JL, Schaffer JV. Dermatology, 3rd edn. Amsterdam: Elsevier, 2012.
2.Christoffersen M, Frikke-Schmidt R, Schnohr P, et al. Xanthelasmata, arcus corneae, and ischaemic vascular disease and death in general population: prospective cohort study. BMJ 2011; 343: 5497.
3. Christoffersen M, Frikke-Schmidt R, Schnohr P, et al. Visible age-related signs and risk of ischemic heart disease in the general population: a prospective cohort study. Circulation. 2014;129(9):990–8.
4. Jun Khee Heng, MRCP, Sze Hon Chua et al. J AM ACAD DERMATOL.2017. 77(4):728-734.

5. Rohrich RJ, Janis JE, Pownell PH. Xanthelasma palpebrarum: A review and current management principles. Plast Reconstr Surg. 2002;110:1310–4.
6. Zainab Laftah and Firas Al-Niaimi. Xanthelasma: An Update on Treatment Modalities. J Cutan Aesthet Surg. 2018 11(1): 1–6.
7. Austin H. Nguyen, Adam M. Vaudreuil, and Christopher J. Huerter. Systematic review of laser therapy in xanthelasma palpebrarum .International Journal of Dermatology 2017, 56, e47–e55.
8.Apfelberg DB, Maser MR, Lash H, et al. Treatment of xanthelasma palpebrarum with the carbon dioxide laser. J Dermatol Surg Oncol 1987; 13: 149–151.
9. Raulin C, Schoenermark MP, Werner S, et al. Xanthelasma palpebrarum: treatment with the ultrapulsed CO2 laser. Lasers Surg Med 1999; 24: 122–127.
10. Pathania V, Chatterjee M. Ultrapulse carbon dioxide laser ablation of xanthelasma palpebrarum: a case series. J Cutan Aesthet Surg 2015; 8: 46–49.
11.Yates B, Que SK, D'Souza L, et al. Laser treatment of periocular skin condition. J. Clinics in Dermatology.2015,33:197-206.
12.Abdelkader M, Alashry SE. Argon laser versus erbium: YAG laser in the treatment of xanthelasma palpebrarum. Saudi J Ophthalmol. Saudi Ophthalmological Society, King Saud University; 2015; 29: 116–120.
13. Pragya A Nair, Rochit Singhal. Xanthelasma palpebrarum – a brief review. Clinical, Cosmetic and Investigational Dermatology 2018:11 1–5.
14.Bogdan Allemann I, Kaufman J. Fractional photothermolysis--an update. Lasers Med Sci 2010; 25:137.
15.Hantash BM, Bedi VP, Chan KF, Zachary CB. Ex vivo histological characterization of a novel ablative fractional resurfacing device. Lasers Surg Med 2007; 39:87.
16. Esmat SM, Elramly AZ, Abdel Halim DM, et al. Fractional CO2 laser is an effective therapeutic modality for xanthelasma palpebrarum. Dermatol Surg. 2014; 40: 1349–1355.
17. Mendelson BC, Masson JK. Xanthelasma: follow-up on results after surgical excision. Plast Reconstr Surg 1976; 58: 535.
18. Lee HY, Jin US, Minn KW, et al. Outcomes of surgical management of xanthelasma palpebrarum. Arch Plast Surg. 2013;40(4):380-386.

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

10:40 am - 10:50 am

11362 - Two Randomized, Double-Blind, Placebo-Controlled, Phase 3, Trials of Collagenase Clostridium Histolyticum (CCH) for the Treatment of Cellulite (Edematous Fibrosclerotic Panniculopathy) / Joely Kaufman, MD

Background: Collagen-rich subdermal septae play a role in contour alterations associated with cellulite. CCH is in late-stage clinical development for the treatment of women with cellulite.

Type of Study: Two identically designed, randomized, double-blind, placebo-controlled, phase 3 trials (RELEASE-1/RELEASE-2)

Methods: Adult women with moderate/severe cellulite (score, 3-4 on Patient Reported Photonumeric Cellulite Severity Scale [PR-PCSS] and Clinician Reported PCSS [CR-PCSS]) on the buttocks received up to 3 treatment sessions (Days 1, 22, and 43) of subcutaneous CCH 0.84 mg or placebo per treatment area. The primary efficacy endpoint was the percentage of 2-level composite responders (≥2-level improvement from baseline in both PR-PCSS and CR-PCSS) at Day 71. Other patient-centric endpoints were also evaluated, including improvement in Subject Global Aesthetic Improvement Scale (S-GAIS).

Results: 843 women received ≥1 injection (CCH vs placebo: RELEASE-1, n=210 vs n=213; RELEASE-2, n=214 vs n=206). A greater percentage of women met the primary endpoint of response with CCH versus placebo in RELEASE-1 (P=0.006) and RELEASE-2 (P=0.002). Statistically significant improvements with CCH versus placebo were also observed for 8/8 (RELEASE-1) and 7/8 (RELEASE-2) secondary endpoints. More women had ≥1-level composite improvement (PR-PCSS and CR-PCSS) from baseline for CCH versus placebo in RELEASE-1 (P<0.001) and RELEASE-2 (P<0.001), and ≥1-level improvement from baseline in S-GAIS for RELEASE-1 (64.3% vs 38.5%; P<0.001) and RELEASE-2 (58.9% vs 22.3%; P<0.001). Most adverse events observed in the CCH group were mild/moderate and were injection-site related (bruising, pain, nodule, pruritus, erythema, and discoloration).

Conclusion: CCH significantly improved cellulite appearance and was generally well tolerated.

REFERENCES

N/A

F056 - Late-breaking Research: Procedural Dermatology

Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

10:50 am - 11:00 am

11151 - Fractional Photothermolysis Stimulates Hair Follicle Regrwoth in Alopecia Patients - A pilot study / Margit Juhasz, MD

Background: Fractional photothermolysis creates areas of microthermal injury. Subsequent wound healing stimulates dermal papillae, accelerating telogen to anagen change and transforming vellus to terminal hairs. The use of fractional photothermolysis for hair regrowth is controversial with varying demonstrations of efficacy in the literature. Current studies report using non-ablative and ablative wavelengths with 20% to 60% increase in hair density after 5 to 24 treatment sessions spaced one to six weeks apart.

Type of Study: A case series demonstrating fractional photothermolysis stimulates scalp hair regrowth in patients with alopecia.

Methods: Four patients with non-scarring and scarring alopecias received six sessions of non-ablative fractional photothermolysis (1550 nm erbium glass) over three months; after laser treatment was complete, patients were followed for two months. Hair regrowth was measured quantitatively using optical coherence tomography (OCT) and qualitatively using serial photography, dermoscopy, as well as physician and patient-reported scales.

Results: Patients demonstrate significant ($p<0.05$) increases in hair density during treatment as measured by OCT. On a 5-point quantitative scale from “worse” to “very much improved”, physicians and patients report hair growth is “improved” to “very improved”. Adjuvant therapy with topical finasteride clinically causes transformation from vellus to terminal hair. After laser therapy is discontinued, patients experience a decrease in hair density.

Conclusion: Fractional photothermolysis utilizing non-ablative wavelengths can stimulate scalp hair follicle regrowth. Low-energy, high-density treatment protocols may be effective for the treatment of non-scarring and scarring alopecias. Further studies need to be completed to optimize treatment spacing and total length of laser treatment.

REFERENCES

1. Wiedemeyeer K, Schill WB, LOser C. Diseases on hair follicles leading to hair loss part I: nonscarring alopecias. Skinmed. 2004 Jul-Aug 2004;3(4):209-214.
2. Wiedemeyer K, Schill WB, Löser C. Diseases on hair follicles leading to hair loss part II: scarring alopecias. Skinmed. 2004 Sep-Oct 2004;3(5):266-269; quiz 270-261.
3. Severi G, Sinclair R, Hopper JL, et al. Androgenetic alopecia in men aged 40-69 years: prevalence and risk factors. Br J Dermatol. Dec 2003;149(6):1207-1213.

4. Olsen EA. Current and novel methods for assessing efficacy of hair growth promoters in pattern hair loss. J Am Acad Dermatol. Feb 2003;48(2):253-262.
5. Olsen EA, Hordinsky M, Roberts JL, Whiting DA, Health DCfWs. Female pattern hair loss. J Am Acad Dermatol. Nov 2002;47(5):795.
6. Gilhar A, Etzioni A, Paus R. Alopecia areata. N Engl J Med. Apr 2012;366(16):1515-1525.
7. Chu SY, Chen YJ, Tseng WC, et al. Comorbidity profiles among patients with alopecia areata: the importance of onset age, a nationwide population-based study. J Am Acad Dermatol. Nov 2011;65(5):949-956.
8. Cash TF. The psychological effects of androgenetic alopecia in men. J Am Acad Dermatol. Jun 1992;26(6):926-931.
9. Cash TF, Price VH, Savin RC. Psychological effects of androgenetic alopecia on women: comparisons with balding men and with female control subjects. J Am Acad Dermatol. Oct 1993;29(4):568-575.
10. Kim WS, Lee HI, Lee JW, et al. Fractional photothermolysis laser treatment of male pattern hair loss. Dermatol Surg. Jan 2011;37(1):41-51.
11. Mlacker S, Aldahan AS, Simmons BJ, et al. A review on laser and light-based therapies for alopecia areata. J Cosmet Laser Ther. Apr 2017;19(2):93-99.
12. Gupta AK, Carviel J, Abramovits W. Treating Alopecia Areata: Current Practices Versus New Directions. Am J Clin Dermatol. Feb 2017;18(1):67-75.
13. Tierney EP, Kouba DJ, Hanke CW. Review of fractional photothermolysis: treatment indications and efficacy. Dermatol Surg. Oct 2009;35(10):1445-1461.
14. Yalici-Armagan B, Elcin G. The Effect of Neodymium: Yttrium Aluminum Garnet and Fractional Carbon Dioxide Lasers on Alopecia Areata: A Prospective Controlled Clinical Trial. Dermatol Surg. Apr 2016;42(4):500-506.
15. Sherling M, Friedman PM, Adrian R, et al. Consensus recommendations on the use of an erbium-doped 1,550-nm fractionated laser and its applications in dermatologic laser surgery. Dermatol Surg. Apr 2010;36(4):461-469.
16. Lee GY, Lee SJ, Kim WS. The effect of a 1550 nm fractional erbium-glass laser in female pattern hair loss. J Eur Acad Dermatol Venereol. Dec 2011;25(12):1450-1454.
17. Alsantali A. Alopecia areata: a new treatment plan. Clin Cosmet Investig Dermatol. 2011;4:107-115.
18. Wosicka H, Cal K. Targeting to the hair follicles: current status and potential. J Dermatol Sci. Feb 2010;57(2):83-89.
19. Huang Y, Zhuo F, Li L. Enhancing hair growth in male androgenetic alopecia by a combination of fractional CO2 laser therapy and hair growth factors. Lasers Med Sci. Nov 2017;32(8):1711-1718.
20. Ito M, Yang Z, Andl T, et al. Wnt-dependent de novo hair follicle regeneration in adult mouse skin after wounding. Nature. May 2007;447(7142):316-320.
21. Alajlan A, Shapiro J, Rivers JK, MacDonald N, Wiggin J, Lui H. Paradoxical hypertrichosis after laser epilation. J Am Acad Dermatol. Jul 2005;53(1):85-88.

22. Lolis MS, Marmur ES. Paradoxical effects of hair removal systems: a review. J Cosmet Dermatol. Dec 2006;5(4):274-276.
23. Patil UA, Dhami LD. Overview of lasers. Indian J Plast Surg. Oct 2008;41(Suppl):S101-113.
24. Desai S, Mahmoud BH, Bhatia AC, Hamzavi IH. Paradoxical hypertrichosis after laser therapy: a review. Dermatol Surg. Mar 2010;36(3):291-298.
25. Yoo KH, Kim MN, Kim BJ, Kim CW. Treatment of alopecia areata with fractional photothermolysis laser. Int J Dermatol. Jul 2010;49(7):845-847.
26. Wang S, Mi J, Li Q, Jin R, Dong J. Fractional microplasma radiofrequency technology for non-hypertrophic post-burn scars in Asians: A prospective study of 95 patients. Lasers Surg Med. Aug 2017;49(6):563-569.
27. Town G, Ash C, Dierickx C, Fritz K, Bjerring P, Haedersdal M. Guidelines on the safety of light-based home-use hair removal devices from the European Society for Laser Dermatology. J Eur Acad Dermatol Venereol. Jul 2012;26(7):799-811.
28. Thaysen-Petersen D, Bjerring P, Dierickx C, Nash JF, Town G, Haedersdal M. A systematic review of light-based home-use devices for hair removal and considerations on human safety. J Eur Acad Dermatol Venereol. May 2012;26(5):545-553.
29. Town G, Bjerring P. Is paradoxical hair growth caused by low-level radiant exposure by home-use laser and intense pulsed light devices? J Cosmet Laser Ther. Oct 2016;18(6):355-362.
30. Bae JM, Jung HM, Goo B, Park YM. Hair regrowth through wound healing process after ablative fractional laser treatment in a murine model. Lasers Surg Med. Jul 2015;47(5):433-440.
31. Howick JC, I.; Glasziou, P.; Greenhalgh, T.; Heneghan, C.; Liberati, A.; Moschetti, I.; Phillips, B.; Thornton, H. The 2011 Oxford CEBM Evidence Levels of Evidence (Introductory Document). 2011; http://www.cebm.net/index.aspx?o=5653.
32. Eckert M.M. GN, L., Crespo R.L. Alopecia Areata: Good Response to Treatment with Fractional Laser in 5 Cases. J Cosmo Trichol. 2016;2:108.
33. Heilmann S, Kiefer AK, Fricker N, et al. Androgenetic alopecia: identification of four genetic risk loci and evidence for the contribution of WNT signaling to its etiology. J Invest Dermatol. Jun 2013;133(6):1489-1496.
34. Bertin ACJ, Vilarinho A, Junqueira ALA. Fractional non-ablative laser-assisted drug delivery leads to improvement in male and female pattern hair loss. J Cosmet Laser Ther. Feb 2018:1-4.
35. Meephansan J, Ungpraphakorn N, Ponnikorn S, Suchonwanit P, Poovorawan Y. Efficacy of 1,550-nm Erbium-Glass Fractional Laser Treatment and Its Effect on the Expression of Insulin-Like Growth Factor 1 and Wnt/β-Catenin in Androgenetic Alopecia. Dermatol Surg. Oct 2018;44(10):1295-1303.
36. Cho S, Choi MJ, Zheng Z, Goo B, Kim DY, Cho SB. Clinical effects of non-ablative and ablative fractional lasers on various hair disorders: a case series of 17 patients. J Cosmet Laser Ther. Apr 2013;15(2):74-79.
37. Cho SB, . Zheng, Z., Kang, J.S., Kim, H.S. Therapeutic efficacy of 1,927-nm fractionated thulium laser energy and polydeoxyribonucleotide on pattern hair loss. Med Laser. 2016;5:22-28.

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Saturday, March 2 from 9:00 AM — 11:00 AM

Salon H

38. Cho SB, Goo BL, Zheng Z, Yoo KH, Kang JS, Kim H. Therapeutic efficacy and safety of a 1927-nm fractionated thulium laser on pattern hair loss: an evaluator-blinded, split-scalp study. Lasers Med Sci. May 2018;33(4):851-859.
39. Tsai YC. Alopecia areata treated with fractional photothermolysis laser: A case report. Journal of the American Academy of Dermatology. May 2016;74(5):Ab132-Ab132.
40. Lee WR, Shen SC, Al-Suwayeh SA, Yang HH, Li YC, Fang JY. Skin permeation of small-molecule drugs, macromolecules, and nanoparticles mediated by a fractional carbon dioxide laser: the role of hair follicles. Pharm Res. Mar 2013;30(3):792-802.
41. Lee WR, Shen SC, Aljuffali IA, Li YC, Fang JY. Erbium-yttrium-aluminum-garnet laser irradiation ameliorates skin permeation and follicular delivery of antialopecia drugs. J Pharm Sci. Nov 2014;103(11):3542-3552.
42. Lee WR, Shen SC, Chen WY, Aljuffali IA, Suen SY, Fang JY. Noninvasive delivery of siRNA and plasmid DNA into skin by fractional ablation: erbium:YAG laser versus CO(2) laser. Eur J Pharm Biopharm. Apr 2014;86(3):315-323.
43. Issa MC, Pires M, Silveira P, Xavier de Brito E, Sasajima C. Transepidermal drug delivery: a new treatment option for areata alopecia? J Cosmet Laser Ther. Feb 2015;17(1):37-40.