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 been 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**
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**

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 (diluted 1:1) 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**
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**
**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 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**

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
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
F056 - Late-breaking Research: Procedural Dermatology
Saturday, March 2 from 9:00 AM — 11:00 AM
Salon H

**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**
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 intends 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**
**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**

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 Photonic 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
10:50 am - 11:00 am

11151 - Fractional Photothermolysis Stimulates Hair Follicle Regrowth 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**
F056 - Late-breaking Research: Procedural Dermatology
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