Abstract N°: ID-4

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

EXPERIENCE OF COMBINED USE OF ABLATIVE AND NON-ABLATIVE LASERS IN THE CORRECTION OF KELOID SCARS

Abdukadir Abdurashidov*[1], Nozima Abdukhamidova[2], Sevara Muminova[3]

[1]Center for the development of professional qualification of medical workers, Tashkent, Uzbekistan
[2]Tashkent State Medical University, Tashkent, Uzbekistan
[3]Republican Specialized Scientific and Practical Medical Center of Dermatovenereology and Cosmetology, Tashkent, Uzbekistan

Introduction

The widespread occurrence of keloid scars among the adult population is determined by multiple heterogeneous factors. The multicomponent nature of their pathogenesis limits the effectiveness of existing treatment methods and complicates the correction process. Therefore, the development of effective methods of high-intensity laser therapy (HILT), aimed at significantly reducing the volume and density of scar tissue while improving its microrelief, elasticity, and vascularization, remains an urgent task.

To evaluate the therapeutic effect of different combinations of high-intensity laser therapy (HILT) in patients with keloid scars.

Materials and Methods

A total of 21 patients with developing (n=9) and mature (n=12) keloid scars were examined. In patients with developing scars, selective angio-photothermolysis using yellow laser radiation (λ=578 nm) was applied. In patients with mature scars, a combination of laser angio-photothermolysis with high-intensity fractional ablative infrared laser (λ=10.6 μm) was used. Clinical, dermatoscopic, and instrumental assessment methods were employed to evaluate treatment efficacy.

Results

The procedures improved scar elasticity, reduced sensitivity, density, and thickness, as well as enhanced microrelief and vascularization parameters. In patients with developing keloid scars, selective angio-photothermolysis demonstrated a pronounced angio-destructive effect, whereas in patients with mature keloid scars, the combination of angio-photothermolysis and fractional ablative photothermolysis produced a marked defibrosing therapeutic effect.

Conclusions

The findings indicate the necessity of a tactical approach to keloid scar correction based on the sequential application of different methods of high-intensity laser therapy, taking into account the stage of scar formation.

Abstract N°: ID-15

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Microneedling and Chemical Peeling Combination vs Monotherapy in Acne Scarring

Julia Woźna*[1], Maksymilian Markwitz[1], Andrzej Bałoniak[2], Jan Stępka[2], Aleksandra Dańczak-Pazdrowska[1], Adriana Polańska[1], Ewa Mojs[3], Ryszard Żaba[1]

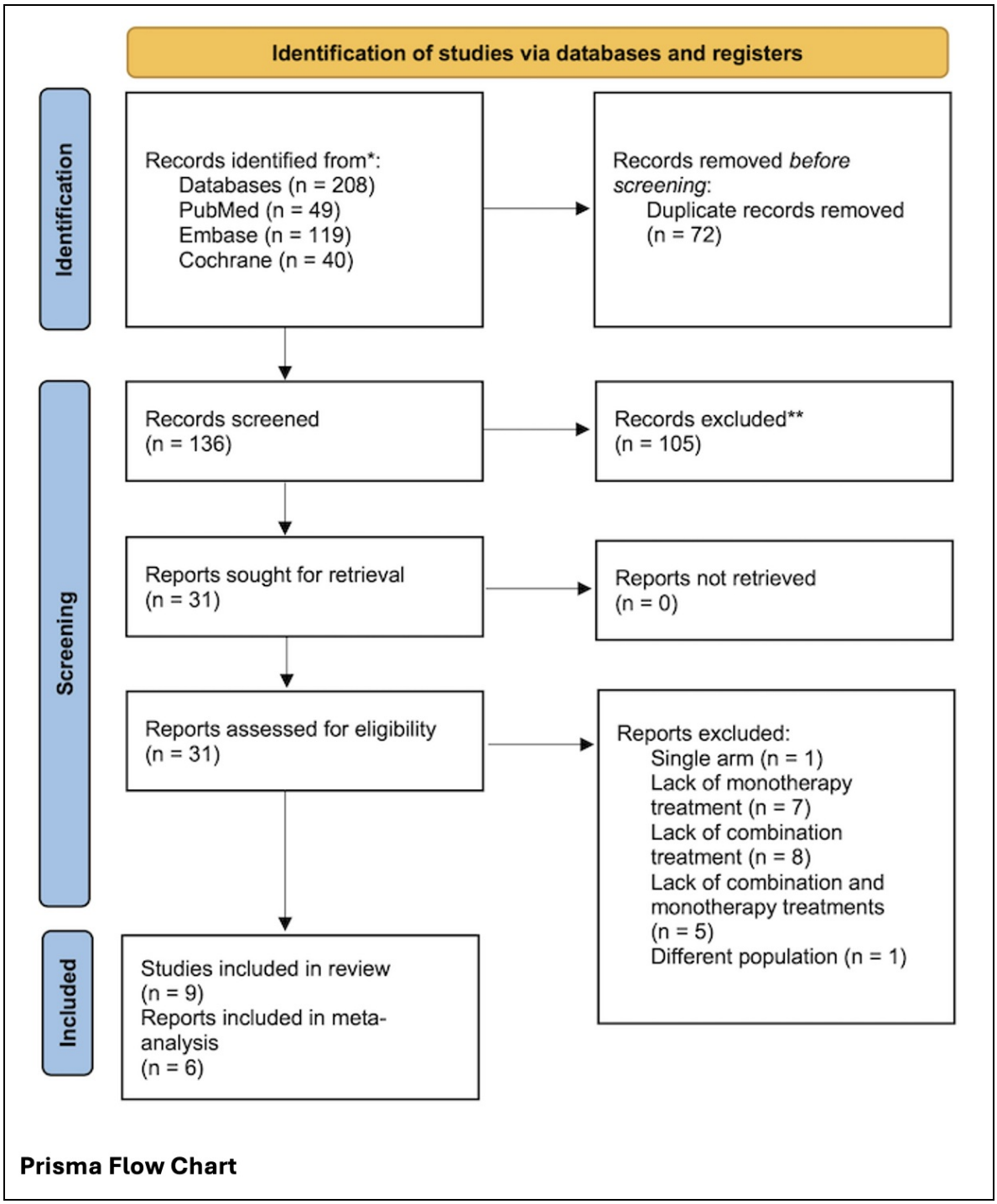
[1]Department of Dermatology and Venereology, Poznan University of Medical Sciences, Poznań, Poland
[2]Clinical Hospital of the Poznań University of Medical Sciences, Poznan University of Medical Sciences, Poznań, Poland
[3]Department of Clinical Psychology, Poznan University of Medical Sciences, Poznań, Poland

Introduction

Atrophic acne scars remain difficult to treat and significantly impair quality of life. Microneedling and chemical peeling are both established therapeutic options. In recent years, combining these two methods has gained interest as a way to potentially improve outcomes. The aim of this study was to evaluate whether combination therapy offers superior efficacy and patient-reported benefits compared with either technique used alone.

Materials and Methods

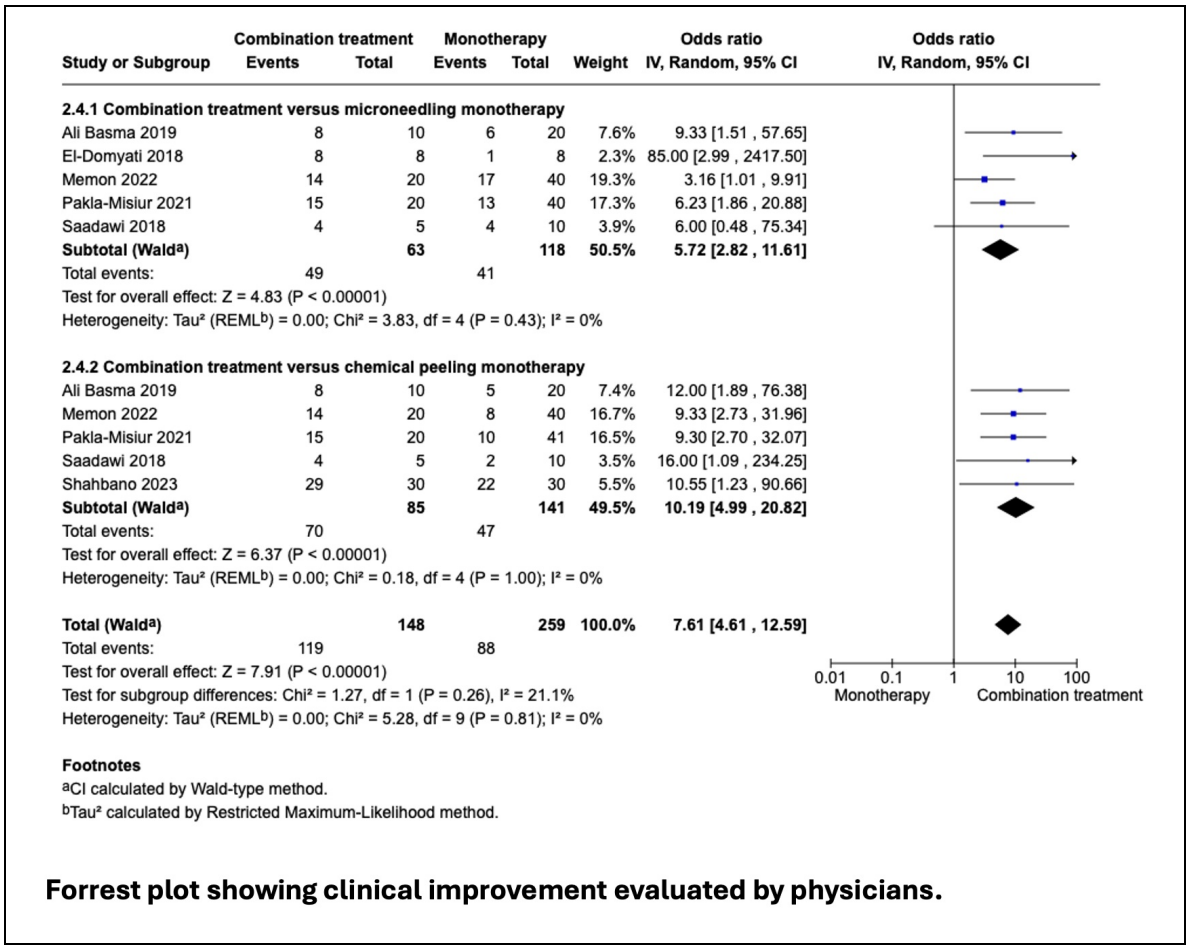
This systematic review and meta-analysis was conducted in accordance with PRISMA 2020 and was prospectively registered in PROSPERO (CRD420251082268). A comprehensive literature search was performed across PubMed (Medline), Embase, and the Cochrane Library from inception to 25 June 2025 to identify randomised and non-randomised studies comparing the combination of microneedling and chemical peeling with either treatment used alone. Extracted outcomes included clinical improvement, Échelle d'Évaluation Clinique des Cicatrices d'Acné (ECCA) scores, patient satisfaction, Dermatology Life Quality Index (DLQI), and adverse events.



Prisma Flow Chart

Results

Nine studies involving 566 participants were included, and six contributed to the meta-analysis. Across studies, the combined approach produced better clinical improvement than microneedling alone (OR 5.72, 95% CI: 2.82–11.61) and chemical peeling alone (OR 8.94, 95% CI: 4.72–16.95). Responder rates ≥75% were achieved in 40–50% of patients receiving the combined protocol versus ≤13% with monotherapy. Scores on the ECCA (Échelle d'Évaluation Clinique des Cicatrices d'Acné) scale showed greater improvement with the combined approach. Patient satisfaction and Dermatology Life Quality Index (DLQI) outcomes also consistently favoured the combination therapy. Reported side effects were mild and temporary, and no serious complications occurred.



Forrest plot showing clinical improvement evaluated by physicians.

Conclusions

Using microneedling together with chemical peeling is more effective than either method alone for atrophic acne scars, while remaining safe and well-tolerated. These findings support the combined protocol as a promising procedural option, although additional controlled trials are needed to define treatment guideliness.

Abstract N°: ID-24

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Association of phenol-croton oil peel in facial surgical treatments for more satisfactory full face rejuvenation

Marina Queiroz*[1]

[1]Fayy Health clinic, Dubai, United Arab Emirates

Introduction

Aging occurs throughout the face under the action of intrinsic and extrinsic factors. When only surgical treatments are performed, fixed wrinkles, elastosis and skin blemishes remain and the results of facial rejuvenation are insufficient. Despite facial surgical treatments being the best known treatments for a more pronounced rejuvenation of the face, blepharoplasty and facelifts are not capable of treating the skinand it is necessary to combine treatments. In this sense, phenol-croton peel is a treatment that greatly reduces wrinkles and elastosis , improving skin quality. The phenol-croton peel can be performed at the same time as facial plastic surgeries, bringing comfort to the patient and much more satisfactory facial rejuvenation.

Materials and Methods

The presentation demonstrates a series of cases of patients treated with phenol-croton peel of the entire face or localized areas of the face,simultaneously with oculoplastic surgery and facelift. In all treatments, the phenol-croton peel was carried out in sequence, with hetter's formulas, with concentrations ranging from 0.2 to 1.6% croton oil. The procedures were performed in the operating room, under sedation and cardiac monitoring, intravenous hydration and monitored by an anesthesiologist.

Results

The patient benefited from the combined treatment and presented very satisfactory results from full face rejuvenation. There were no complications nor complains.

Conclusions

The combination of treatments is necessary to obtain the best full face rejuvenation results. In this sense, the association of phenol-croton peel with facial plastic surgery brought very satisfactory results, in addition to providing more convenience and savings to the patient due to the possibility of being performed at the same surgical time. This association reduce the time away from their daily activities, considering that the patients recovers from both

procedures at the same time.

Abstract N°: ID-29

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Combined Poly-L-Lactic Acid and Polydeoxyribonucleotide Injectable Therapy for Atrophic Varicella Scars: A Case Series of 12 Patients

Fatemeh Moeineddin*[1]

[1]Medicoderma, Tehran, Iran

Introduction
Atrophic varicella scars are among the most challenging forms of post-inflammatory scarring. Traditional resurfacing and filler-based treatments often fail to achieve sufficient dermal remodeling. Poly-L-lactic acid (PLLA) acts as a collagen biostimulator, whereas polydeoxyribonucleotide (PDRN) enhances tissue repair and angiogenesis through activation of adenosine A2A receptors. The combination of these two injectables may yield synergistic regenerative effects, promoting both neocollagenesis and fibroblast regeneration.

Materials and Methods
Twelve patients (8 females, 4 males; mean age 28.7 ± 6.4 years) with stable atrophic varicella scars were treated with combined PLLA and PDRN injections. PLLA (150 mg reconstituted with sterile water and lidocaine) and PDRN (1.5 mL; 1.875 mg/mL) were administered intradermally/subdermally via fanning and serial puncture techniques. Three sessions were performed at 2-month intervals. Clinical improvement was assessed at baseline, 3, 6, and 12 months using standardized photographs, dermal ultrasound, and blinded Global Aesthetic Improvement Scale (GAIS) scoring.

Results
At 12-month follow-up, mean GAIS improvement was 3.8 ± 0.4, with 75% of patients rated as “marked” or “excellent.” Dermal ultrasound revealed significant increases in dermal thickness and elasticity ($p < 0.01$). No serious adverse events were observed; mild transient edema occurred in three cases and resolved spontaneously. Patient satisfaction was high (mean VAS = 8.9/10).

Conclusions
Combined injectable PLLA and PDRN therapy provides a synergistic bioregenerative approach for atrophic varicella scars, stimulating collagen synthesis and tissue repair with long-lasting clinical improvement up to one year. The treatment is safe, minimally invasive, and represents a promising alternative for patients with refractory atrophic scars.

Abstract N°: ID-31

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Herpes Zoster Opthalmicus Post-Botox Injection: A Case Report

Lenah Almarzouk*[1]

[1]Dammam Medical Complex, Dammam, Saudi Arabia

Introduction

Herpes zoster ophthalmicus (HZO) is a potentially sight-threatening condition caused by the reactivation of the varicella-zoster virus (VZV) within the ophthalmic branch of the trigeminal nerve. While the reactivation of this virus is commonly associated with advancing age or immunosuppression, rare triggers such as trauma, stress, or medical interventions have also been reported. Botulinum toxin injections, widely used for both cosmetic and therapeutic purposes, are generally considered safe with minimal adverse effects. A few studies have proposed a potential link between botulinum toxin injections and the reactivation of the VZV, with reports of VZV reactivation occurring in patients who received botulinum toxin injections for both cosmetic and medical treatments. We present a unique case of a 40-year-old medically free female who developed symptoms suggestive of HZO after receiving a botulinum toxin injection.

Materials and Methods

The patient presented with a burning sensation localized to the right side of the forehead, extending below the left eye and the temporal scalp region, which began five days after receiving a botulinum toxin type A injection. Despite initial treatment with azithromycin and ibuprofen, the symptoms persisted. Physical examination revealed an edematous, erythematous plaque with crusts over the ophthalmic dermatome, confirming a diagnosis of HZO.

Results

The patient was promptly started on oral acyclovir (800 mg, five times daily) along with topical acyclovir cream applied to the affected area. At a follow-up visit seven days later, the patient demonstrated significant clinical improvement and reported complete resolution of symptoms.

Conclusions

HZO is a rare but significant complication that can arise following botulinum toxin injections. While the precise mechanism linking botulinum toxin injection to VZV reactivation remains uncertain, factors such as local trauma and the neurotoxic effects of botulinum toxin may play a role in disrupting neuronal integrity, thereby facilitating viral reactivation. This case, along with previous reports, underscores the need for clinicians to be vigilant when evaluating patients presenting with symptoms suggestive of HZO after botulinum toxin injections. Early diagnosis and prompt antiviral therapy, as demonstrated in this case, are crucial for preventing serious ocular complications and ensuring favorable outcomes.

Abstract N°: ID-153

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

World's First m-health Application for Improving Compliance in Laser Hair Removal: Development and Pilot Evaluation in a Resource-Limited Setting

Ayesha Siraj*[1], Muneeza Rizwan[1]

[1]Fazaia Postgradute Medical Institute, Pakistan Air Force Hospital, Dermatology, Islamabad, Pakistan

Introduction
Laser hair removal is a widely performed dermatological procedure. In low- and middle-income countries, limited patient education and follow-up resources contribute to inconsistent compliance to treatment protocols and suboptimal outcomes, particularly in patients with skin of colour, where poor adherence increases the risk of hyperpigmentation, burns, and scarring. Digital health interventions may provide scalable and sustainable solutions, but evidence for their role in procedural dermatology is limited. This study evaluated the feasibility and usability of a purpose-designed m-health application for laser hair removal and its effectiveness in improving adherence to pre- and post-procedure instructions.

Materials and Methods
A prospective, parallel-group pilot study was conducted among 50 female patients undergoing facial laser hair removal. Participants were equally allocated to an intervention group (n = 25), using the m-health application "My Laser Care App", or a control group (n = 25), receiving standard care. The app provided educational content on lasers and hirsutism, structured pre- and post-procedure guidance, and automated reminders for care instructions and appointments. Usability was assessed using the System Usability Scale (SUS), an internationally validated tool and adherence with a 10-item internally validated compliance questionnaire (score range 0–40).

Results
The m-health application demonstrated excellent usability, reflected by a high mean System Usability Scale (SUS) score of 87.39 ± 10.41, indicating strong user acceptance and ease of use. Mean compliance scores were significantly higher in the application group than controls (34.7 ± 4.5 vs 24.2 ± 6.2), reflecting improved compliance to care instructions which was associated with fewer reported adverse effects and better treatment outcomes. Appointment attendance was higher among application users, reflecting better engagement with treatment schedules and follow-up care.

Conclusions
This preliminary pilot study demonstrates that a tailored m-health application for laser hair removal is practical, sustainable, user-friendly and effective in improving compliance. These findings support the potential role of digital health interventions in procedural dermatology and justify further evaluation in larger controlled studies.

Abstract N°: ID-195

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Pulsed Dye Laser with Compression for Treatment of Solar Lentigenes in an Asian Centre

Yong Kwang Tay*[1], Angelyn Lua[2], Wei Liang Koh[1]

[1]Changi General Hospital, Dermatology, Singapore, Singapore
[2]Singapore General Hospital, Dermatology, Singapore, Singapore

Introduction

Solar lentigines are a common cause of hyperpigmentation that can cause significant distress, especially on the face. Risk correlates directly with age and sun exposure. Traditionally, nanosecond (ns) or picosecond (ps) lasers have been used for removal of pigmented lesions, while pulsed dye laser (PDL) is used for vascular lesions. PDL therapy with skin compression removes blood from the treatment area, thus eliminating hemoglobin as a competing chromophore against melanin, the target in pigmented lesions. This minimises the risk of purpura, post inflammatory hyperpigmentation and increases the effectiveness.

Materials and Methods

We reviewed thirty patients who underwent PDL with compression for solar lentigines in the outpatient Dermatology department of an Asian medical centre.

Results

Twenty-one (70%) patients were female and nine (30%) were male, with an age range of 27 to 85 years and a mean age of 59 years. Twenty-eight (93%) were Chinese, one (3%) was Malay and one (3%) was Thai. Twenty-nine (97%) patients were treated for solar lentigines on the face, two (7%) for upper limbs lentigines and one (3%) for chest lentigines.

PDL with compression handpiece was performed for all patients with the following settings: spot size 7mm, fluence 9 to 10J/cm^2, pulse duration 1.5ms, 2 stacked pulses. Therapeutic end points were that of immediate darkening and mild redness. The average number of treatments required was 2.1 (range: 1-6). Of note, the patient who underwent treatment for arm lentigines required 5 treatments.

Twenty (67%) out of thirty patients were seen for follow up. All of these patients demonstrated 20-100% improvement in their solar lentigines. Fifteen (75%) out of twenty patients achieved at least 50% improvement.

The most common side effects experienced by patients following therapy were crusting (33%, n=10 patients) and redness (33%, n=10 patients). Other side effects reported were swelling (17%, n=5 patients), transient post-inflammatory hyperpigmentation which resolved within 3.5 weeks (13%, n=4 patients), peeling (7%, n=2 patient), burning pain (3%, n=1 patient) and post-inflammatory hypopigmentation (3%, n=1 patient). These were largely transient, lasting from 1 day to 3.5 weeks before resolving spontaneously. The only exception was the patient with post-inflammatory hypopigmentation, which took longer to resolve (3 months after the last PDL).

Twenty-five (83%) patients were treated concurrently with topical lightening agents, namely tretinoin 0.025%-0.05% cream, hydroquinone 4% cream, vitamin C cream, niacin cream and triple combination cream (fluocinolone acetonide 0.01%, hydroquinone 4%, tretinoin 0.05%). All patients were using Sun Protection Factor (SPF) 50 sunscreens. One patient was taking oral tranexamic acid.

Conclusions

PDL with compression can be used effectively for the treatment of solar lentigines with minimal transient side effects and low risk of post inflammatory dyspigmentation. This provides an attractive alternative to the traditional use of ns or ps laser therapy for pigmented lesions in the Asian skin.

Limitations include the small sample size and loss of follow up for some patients. More studies are needed to determine the optimal parameters using this technique for the treatment of solar lentigines.

Abstract N°: ID-337

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Efficacy and Safety of Hyaluronic Acid Fillers for Liquid Rhinoplasty in Ethnic Skin: A Structured Review

Emeka Okolo*[1]

[1]University of South Wales, Pontypridd, United Kingdom

Introduction
Liquid rhinoplasty using hyaluronic acid (HA) fillers is an increasingly utilised non-surgical alternative to surgical rhinoplasty. Its use has expanded among individuals with ethnic skin (Fitzpatrick skin types IV-VI), who exhibit distinct anatomical and pigmentary characteristics that may influence aesthetic outcomes and complication profiles. However, evidence specific to this population remains heterogenous, and procedural safety considerations are not well synthesised.

Materials and Methods
A structured literature review with a systematic approach was conducted across PubMed, Embase, Cochrane Library, Scopus, Web of Science, and Google Scholar. Studies published within the last 10 years assessing non-surgical rhinoplasty using HA fillers in individuals with Fitzpatrick skin types IV–VI were included. Outcomes assessed included aesthetic improvement, patient satisfaction, longevity of results, and reported complications. Study quality was appraised using the Critical Appraisal Skills Programme (CASP), and findings were synthesised narratively.

Results
The reviewed literature demonstrated consistent improvement in nasal contour and high levels of patient satisfaction following liquid rhinoplasty in ethnic skin. HA fillers were effective in achieving aesthetically acceptable outcomes while preserving ethnic nasal characteristics. Reported complications included ecchymosis, filler migration, delayed inflammatory reactions, vascular compromise, and post-inflammatory hyperpigmentation. Variability in complication rates was influenced by injection plane, filler rheology, anatomical considerations, and practitioner expertise. Deeper-plane and standardised injection techniques were associated with improved safety profiles.

Conclusions
Liquid rhinoplasty using hyaluronic acid fillers appears to be an effective and generally safe procedure in individuals with ethnic skin when tailored techniques are employed. Recognition of anatomical variation and pigment-related risks is essential to optimise outcomes and minimise complications. Further high-quality comparative studies are required to inform standardised best-practice guidelines for this population.

Abstract N°: ID-448

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

No Tox Tweakments: Miracle or Myth?

Phyo Zaw Aung*[1], Thamthiwat Nararatwanchai[1]

[1]Mae Fah Luang University, School of Anti-Aging and Regenerative Medicine, Department of Dermatology, Amphoe Mueang Chiang Rai, Thailand

Introduction

Aesthetic dermatology is progressively shifting from invasive corrective procedures toward preventive and noninvasive skin maintenance strategies. Within this evolving landscape, NoTox Tweakments have emerged as topical alternatives to injectable botulinum neurotoxin. NoTox Tweakments refer to noninjectable neuromodulating cosmeceutical interventions that aim to reduce the appearance of dynamic wrinkles through reversible modulation of neuromuscular signaling rather than muscle paralysis.

Materials and Methods

A narrative literature review was conducted focusing on neuromodulating peptides and botanicals commonly used in NoTox Tweakments. These included presynaptic neurotransmitter release inhibitors, postsynaptic acetylcholine receptor antagonists, calcium channel modulators, and sodium channel blocking compounds. Mechanisms of action, molecular characteristics, formulation challenges, and reported clinical outcomes were analyzed. In addition, a pilot clinical evaluation of a topical formulation containing 10 percent acetyl hexapeptide was performed over eight weeks. Outcomes were assessed using standardized facial imaging analysis to evaluate wrinkle severity, skin texture, pore appearance, and pigmentation.

Results

The literature review demonstrated that topical neuromodulating compounds used in NoTox Tweakments exert biologically plausible effects through partial inhibition of neuromuscular transmission. Reported clinical studies showed reductions in wrinkle severity ranging from approximately 20 to 60 percent depending on active compound concentration and delivery system. (Table 1) In the clinical evaluation, topical acetyl hexapeptide resulted in a 21.7 percent reduction in wrinkle score and a 33.3 percent improvement in skin texture after eight weeks of use. No significant improvement was observed in pore size or pigmentation parameters.

Name	Synonym	Source	Mechanism of Action	Clinical study findings
Argireline	Acetyl Hexapeptide-8	Synthetic peptide	Inhibits SNARE 3 complex assembly	Reduced wrinkle depth by up to **30%** after 30 days
Snap-8	Acetyl Octapeptide-3	Synthetic peptide	Extends Argireline action, inhibiting SNARE complex	Reduced wrinkle depth by up to **38%** after 28 days
Leuphasyl	Pentapeptide-18	Synthetic peptide	blocking calcium channels & ACh release	Reduced wrinkle depth by up to **24%** after 28 days
Vialox	Pentapeptide-3	Synthetic peptide	competitive antagonist at postsynaptic Ach receptors	Reduced skin roughness by **47%** and wrinkle depth by **49%** after 28 days
XEP-30 and XEP-018	μ-conotoxin CnIIIC	Animal derived	Blocks ACh release by targeting NaV1.4 4 sodium channels	Reduced wrinkle depth by up to **48%** after 30 days
Syn-Ake	Dipeptide Diaminobutyroyl Benzylamide Diacetate	Animal derived	Antagonizes muscle nAChRs 5 and modulates GABAA 6 receptors	Reduced wrinkle size by up to **52%** after 28 days
Myoxinol	*Hibiscus esculentus* extract	Plant based	interaction with GABA 7 receptors, enhancing GABAergic transmission	Reduced wrinkle depth by up to **26%** after 3 weeks

Table 1. Comparative Efficacy of Key NoTox Peptides

Conclusions

NoTox Tweakments represent a scientifically supported noninvasive approach for the prevention and reduction of dynamic facial wrinkles. While they do not replace injectable neuromodulators, their favorable safety profile and measurable clinical effects support their role as maintenance or early intervention strategies in aesthetic dermatology. Further controlled studies are required to optimize formulation delivery, assess long term outcomes, and define their comparative efficacy within comprehensive antiaging treatment protocols.

Abstract N°: ID-486

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Available Management for Foreign Body Granuloma due to Hyaluronic Acid Fillers: A Systematic Review

Khalid Alshareef*[1], Ahmed Almutairi[2], Maria Alsulami[3], Mulham Kalantan[4], Athoub Kadasa[4], Saud Alobaida[5]

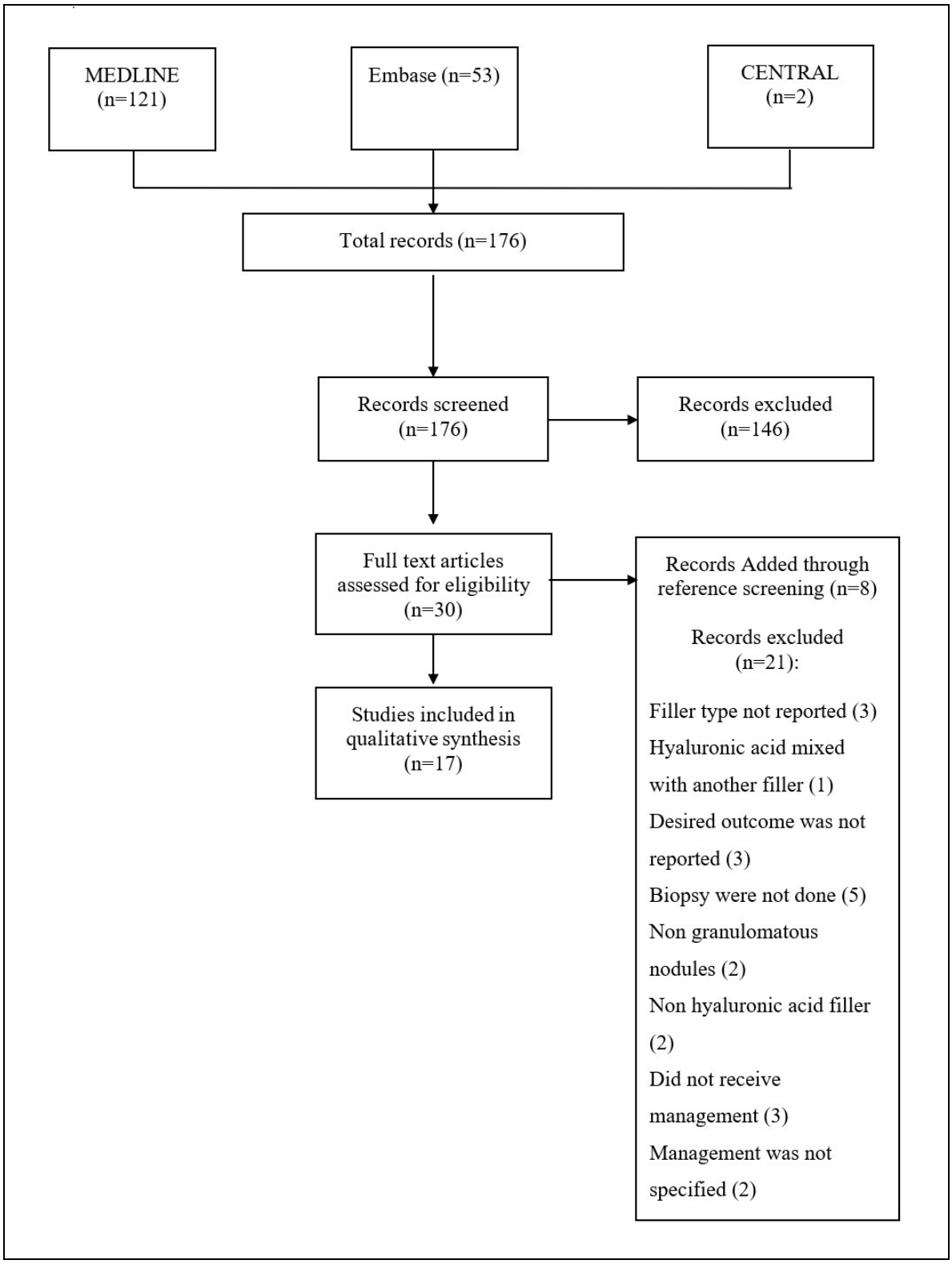
[1]Prince Sultan Military Medical City, Department of Dermatology, Riyadh, Saudi Arabia
[2]Saudi Commission for Health Specialties, Riyadh, Saudi Arabia
[3]Faculty of Medicine for Girls-Umm Al Qura University, Makkah, Saudi Arabia
[4]King Saud bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia
[5]King Faisal Specialist Hospital & Research Center, Dermatology, Riyadh, Saudi Arabia

Introduction

Dermal fillers composed of hyaluronic acid (HA) products are widely used in cosmetic medicine and are considered safe; however, literature has reported delayed granulomatous reactions that occurred after getting hyaluronic acid injections. The reported incidence ranged from 0.02% to 0.3%. [1,2] Foreign body granulomas present as persistent nodules that mimic infections or tumors. While treatments such as hyaluronidase, corticosteroids, and 5-fluorouracil are commonly used, no gold standard therapy has been established. [1] This review aims to summarize the management of foreign body granuloma due to HA filler emphasizing available in literature.

Materials and Methods

Medline, Embase, and Cochrane Central Register of Controlled Trials (CENTRAL) were searched (Figure 1). [3-19] The outcomes of interest were clinical improvement which can be classified as no, mild, moderate, complete resolution. Management was categorized into topical treatments, injectable treatments, oral treatments, combinational treaments, and surgical treatment. This systematic review protocol was registered at PROSPERO (CRD420251159592)



Prisma Flow Diagram

Results

Topical Treatments:

No studies reported usage of topical treatments for HA filler associated granuloma.

Injectable Treatments:

4 studies reported using hyaluronidase or intralesional corticosteroid, 3 patients had hyaluronidase alone with no improvement which necessitated adding other treatment option. 2 patients had intralesional corticosteroid 1 had only mild improvement while the other had it resolved within 6 months without any evidence of the granuloma.

Oral treatments:

3 studies used oral treatment alone where 4 patients had oral corticosteroid. 2 patients received 30mg prednisone with mild improvement, 1 patient had quick regression with prednisolone 1mg/kg but had to continue combinational therapy for complete resolution, 1 patient received methylprednisolone and had their lesion completely resolved.

Combination:

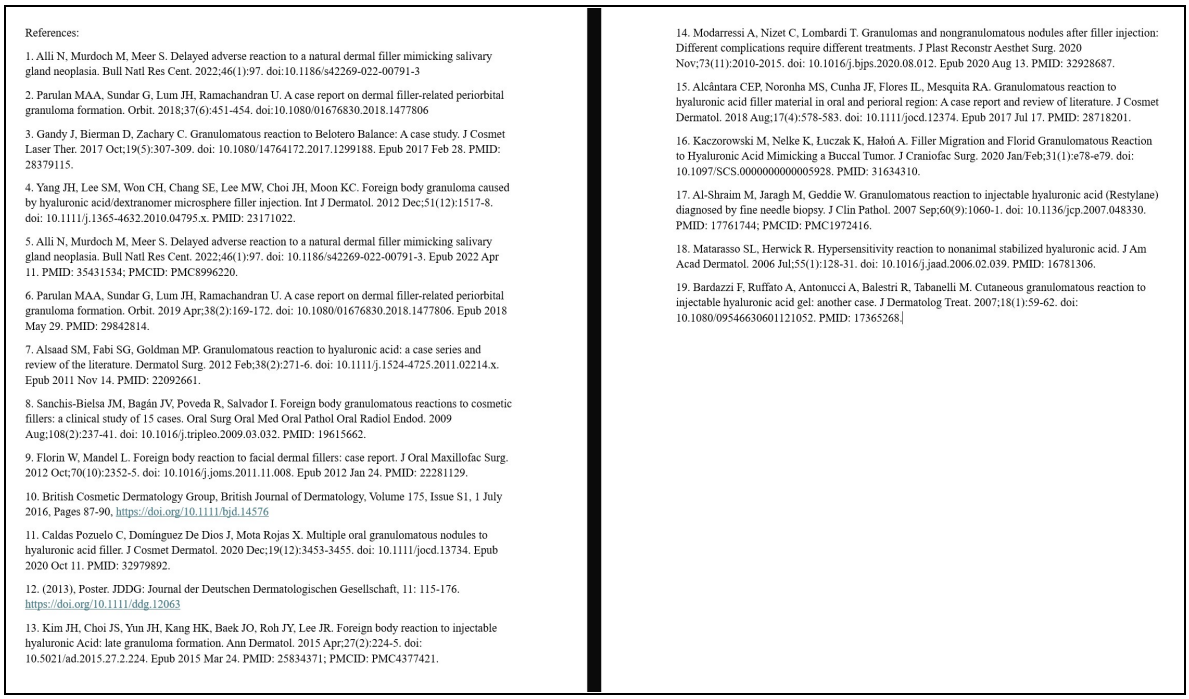
9 studies went with combinational treatments. 1 patient was given topical and intralesional betamethasone over 3 weeks for 2 months and had mild improvement and 1 year later the nodules have completely resided. 1 patient received a combination of intralesional hyaluronidase, betamethasone, 5- fluorouracil and achieved total clinical response within 11 months. 3 patients received a combination of intralesional hyaluronidase and intralesional corticosteroid which led to 1 having a moderate improvement and 2 having the lesion completely resolved. 1 patient had hyaluronidase alone with relapse so underwent intralesional corticosteroid with Fraxel rePair 135-µm beam diameter CO2 laser (1.77 kJ, 70 mJ,70%, 8 passes) achieving moderate improvement. 1 patient was given minocycline 100mg combined with intralesional corticosteroid and lesions were moderately improved within 8 weeks and was recovering. 1 patient had nodules that were tender and received oral corticosteroid combined with hyaluronidase and had improvement after 2 weeks.

Surgical:

5 studies have gone with surgical intervention with a total of 6 patients where 2 patient failed treatment on hyaluronidase and went with surgical excision, another patient had gone surgical excision, 1 patient had a 3mm incisional biopsy, and 1 patient underwent surgical biopsy with all patients having no recurrence. 1 patient underwent fine needle biopsy with partial removal of the nodule which led to the clearance of nodule without medical management.

Conclusions

Treatment of HA filler associated foreign body granulomas showed variable outcomes, with no evidence supporting topical therapy alone. Injectable treatments, particularly intralesional corticosteroids and hyaluronidase, demonstrated greater effectiveness, though hyaluronidase monotherapy was often insufficient. Oral corticosteroids provided partial to complete improvement. Combination treatments yielded the most favorable responses across studies. Surgical intervention achieved complete resolution in refractory cases without recurrence.



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Abstract N°: ID-495

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

A pilot Study on the Efficacy of Salmon-Derived Exosomes Delivered via Microneedling for the Treatment of Facial Hyperpigmentation

Karim Karray*[1], Diana Zemskova[2]

[1]Sechenov University, Dermatology and venerology, Moscow, Russian Federation
[2]Клиника Современной Трихологии, Moscow, Russian Federation

Introduction

Hyperpigmentation disorders remain a therapeutic challenge due to the limitations of existing modalities. Exosomes, particularly those derived from marine sources like salmon, possess a rich cargo of bioactive molecules with potential for regulating melanogenesis and skin repair. This study evaluates the novel use of salmon-derived exosomes, enhanced by microneedling delivery, for the treatment of recalcitrant hyperpigmentation.

Materials and Methods

In this prospective pilot study, five patients with clinically diagnosed facial hyperpigmentation were enrolled. Patients with chronic systemic diseases, autoimmune conditions, or a history of keloids were excluded. Diagnosis and lesion mapping were confirmed using a Dermlight 5 Wood's lamp dermoscopy. Each patient underwent a series of five treatment sessions at two-week intervals. Each session consisted of microneedling followed by immediate topical application of the salmon-derived exosome formulation. Clinical efficacy was assessed through standardized serial photography and Wood's lamp dermoscopic evaluation at baseline and four weeks post-final treatment.

Results

All five patients completed the treatment protocol with no significant adverse events, demonstrating excellent tolerability. Post-treatment evaluation revealed a clinically significant reduction in pigmentation intensity and lesion size across all patients. Dermoscopic analysis showed a marked decrease in epidermal melanin under Wood's light, correlating with improved skin homogeneity. High levels of patient satisfaction were reported.

Conclusions

The transdermal delivery of salmon-derived exosomes via microneedling, in a series of five treatments, is a safe and promising therapeutic strategy for hyperpigmentation. The microneedling technique appears to enhance the bioavailability and efficacy of the exosomes. These preliminary results support the need for expanded, randomized controlled trials to establish definitive efficacy and optimal treatment parameters.

Abstract N°: ID-614

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Peptides, Caffeine, and Jasminum sambac for Periocular Rejuvenation

Mariana Lima[1], Laura Fagundes[1], Ingrid Alexandrino[1], Nathalia Costa[1], Estela Brumatti[1], Joziane Santos[1], Tatiana Rocha[1], Ramila Neves[1], Vitor Seixas[1], Beatriz Vieira[1], Felipe Mota Soares*[1], Matheus Mota Soares[1], Alcinea Balliana Da Mota[1]

[1]ADCOS Group, Serra, Brazil

Introduction

Progressive collagen degradation and reduced elasticity are central factors in periocular aging, often associated with wrinkles, sagging, puffiness, and changes in skin tone. The objective of this study was to investigate the effects of a topical formulation containing biomimetic collagen peptides (tri-, tetra-, penta-, and hexapeptides), combined with caffeine and *Jasminum sambac* extract, on reducing signs of aging in the periocular region.

Materials and Methods

In a preclinical study, human fibroblasts were incubated for 48 hours with the formula, and collagen I and III levels were quantified by ELISA. In the double-blind clinical study, 34 volunteers with wrinkles, sagging, and/or periocular puffiness applied the formula twice daily. On days 7, 28, and 56, assessments included suborbital hyperpigmentation and wrinkle depth (image analysis), firmness, elasticity, and deep hydration (cutometry), as well as perceived efficacy and ophthalmological safety.

Results

The preclinical study showed increases of 143.3% and 119.9% in type I and III collagen, respectively ($p<0.001$). Clinically, after the first night, firmness, elasticity, and hydration increased by 7.1%, 9.6%, and 11.3%, while TEWL decreased by 7.3% ($p<0.05$). Progressive improvements were observed at days 7, 28, and 56 in firmness (+10.8%, +13.1%, +15.7%), elasticity (+12.0%, +17.9%, +22.1%), hydration (+13.4%, +17.5%, +20.4%), and TEWL reduction (–8.8%, –12.1%, –15.3%; $p<0.05$). Volunteers reported improved skin condition upon waking and visible reduction in aging signs.

Conclusions

The formulation containing peptides, caffeine, and Jasminum sambac stimulated collagen synthesis in vitro and promoted significant, progressive improvements in periocular aging signs. These results support its potential as a safe and effective topical strategy for managing aging around the eyes.

Abstract N°: ID-619

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Multimodal Assessment of a Topical Antioxidant Formula in Reducing Oxidative Stress and Signs of Skin Aging

Mariana Lima[1], Laura Fagundes[1], Ingrid Alexandrino[1], Nathalia Costa[1], Estela Brumatti[1], Joziane Santos[1], Tatiana Rocha[1], Ramila Neves[1], Vitor Seixas[1], Beatriz Vieira[1], Felipe Mota Soares*[1], Matheus Mota Soares[1], Alcinea Balliana Da Mota[1]

[1]ADCOS Group, Serra, Brazil

Introduction
Excess free radicals cause cellular damage and accelerate skin aging. This study evaluated the efficacy of a formula with eight antioxidants, including 20% vitamin C, in neutralizing free radicals induced by oxidative stress and reducing skin aging.

Materials and Methods

Human fibroblasts were exposed to UV radiation (4 J/cm²/48h) and divided into three groups: A (exposed), B (exposed + formula), and control. Reactive oxygen species (ROS) were measured using a fluorescent probe, and beta-galactosidase was assessed by cytochemical assay. Human skin fragments were incubated with the formula for 72h, and collagen I and III were quantified by immunofluorescence. Clinically, 36 volunteers applied the formula for 56 days. Hydration, firmness, and elasticity were evaluated by cutometry on days 7, 28, and 56, along with a perception questionnaire. In another study, 30 volunteers were assessed for safety after 30 days of use combined with 1064 nm Nd:YAG laser treatment, using dermatological examination.

Results

Group B showed a 61.1% ($p<0.001$) and 51.1% ($p<0.01$) reduction in ROS and beta-galactosidase, respectively, versus group A, indicating protective and preventive effects on cellular aging. Collagen I and III increased by 27.3% and 24.1% ($p<0.05$). Clinically, progressive improvements were observed: firmness (+7.6%, +14.6%, +20.5%), elasticity (+7.4%, +15.1%, +18.8%), and deep hydration (+8.3%, +18.1%, +27.3%) at 7, 28, and 56 days ($p<0.05$). Volunteers reported fewer wrinkles and greater luminosity. The combination with laser therapy was safe and well tolerated.

Conclusions
The formula demonstrated antioxidant efficacy, preventing oxidative stress, providing continuous clinical improvement in skin aging parameters.

Abstract N°: ID-624

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

From Botox or Hyaluronic Acid to Combined Aesthetic Medicine: The Role of Lasers in Achieving Low-Volume, High-Impact Results

Daniela Bucur*[1]

[1]Medispa clinic, Cluj-Napoca, Romania

Introduction

Injectable treatments such as botulinum toxin and hyaluronic acid fillers have revolutionized aesthetic dermatology, offering safe and predictable correction of wrinkles and volume loss. However, repeated high-volume filler use is increasingly linked to adverse long-term changes — including tissue stretching, edema, fibrosis, and the emerging clinical phenomenon of *filler fatigue*. These insights have led to a paradigm shift toward regenerative, combination-based strategies emphasizing natural and sustainable results.

Materials and Methods

Our objective is to evaluate the scientific and clinical evidence supporting the integration of laser and ultrasound technologies with minimal injectable use, aiming for *low-volume, high-impact* rejuvenation.

Method: an evidence-based literature review encompassing histologic, clinical, and patient-reported data on injectables (botulinum toxin, hyaluronic acid fillers, biostimulators, and skinboosters) and energy-based devices (ultrasound, vascular, pigment, and fractional lasers). Mechanisms of action, synergistic effects, safety profiles, and patient outcomes were analyzed.

Results

Neuromodulators remain effective for dynamic wrinkles, while fillers restore structure and hydration. However, excessive use contributes to *filler fatigue* and loss of natural facial harmony (*Rzany et al., 2021; de Almeida, 2019*). Laser and ultrasound technologies stimulate neocollagenesis and dermal remodeling (*Fabi et al., 2019; Waibel et al., 2016*), improving skin quality and reducing filler dependency. The *low-volume, high-impact* model demonstrates superior longevity and patient satisfaction.

Conclusions

Current evidence supports a transition from filler-dominant correction to biologically regenerative approaches. Lasers and ultrasound enable tissue renewal and structural support, achieving natural, long-lasting, and safer results while minimizing the risks of filler fatigue and overcorrection.

Abstract N°: ID-677

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Ultrasonographic Assessment of Filler-Related Complications: Clinical–Imaging Correlation and Diagnostic Value

Büşra Özgül*[1], Zekayi Kutlubay[2]

[1]Istanbul University-Cerrahpasa, Cerrahpasa Medical Faculty, Dermatology Clinic, Department of Dermatology and Venereology, İstanbul, Türkiye
[2]Istanbul University-Cerrahpasa, Cerrahpasa Medical Faculty, Dermatology Clinic, Department of Dermatology and Venereology, istanbul, Türkiye

Introduction

Soft tissue fillers are widely used in aesthetic dermatology; however, an increasing number of complications have been reported, particularly delayed-onset reactions that may present months or years after injection. Clinical examination alone may be insufficient to accurately characterize these complications, as palpable lesions can represent heterogeneous underlying pathologies such as granulomatous reactions or abscess formation. Ultrasonography has emerged as a valuable imaging modality for the evaluation of filler-related complications, providing real-time visualization of soft tissue changes and injected materials. This study aimed to evaluate the clinical, anatomical, and temporal characteristics of filler-related complications and to assess the additive diagnostic and management value of ultrasonography.

Materials and Methods

This retrospective study included 19 patients presenting with filler-related complications. Demographic data, filler materials, anatomical localization, time to symptom onset, clinical findings, ultrasonographic features, previous treatments, management strategies, and treatment response were recorded. Anatomical sites were grouped into upper face, mid-face, and lower face regions. Clinical findings included nodules, edema, abscess, hyperpigmentation, and scarring. Ultrasonographic findings comprised abscess, inflammation, granuloma, silicone-related patterns, cysts, and scarring. Ultrasonography was accepted as the reference standard for lesion characterization. Treatment approaches were individualized and included intralesional therapies, enzymatic treatment, systemic medications, ultrasound-guided procedures, and surgery.

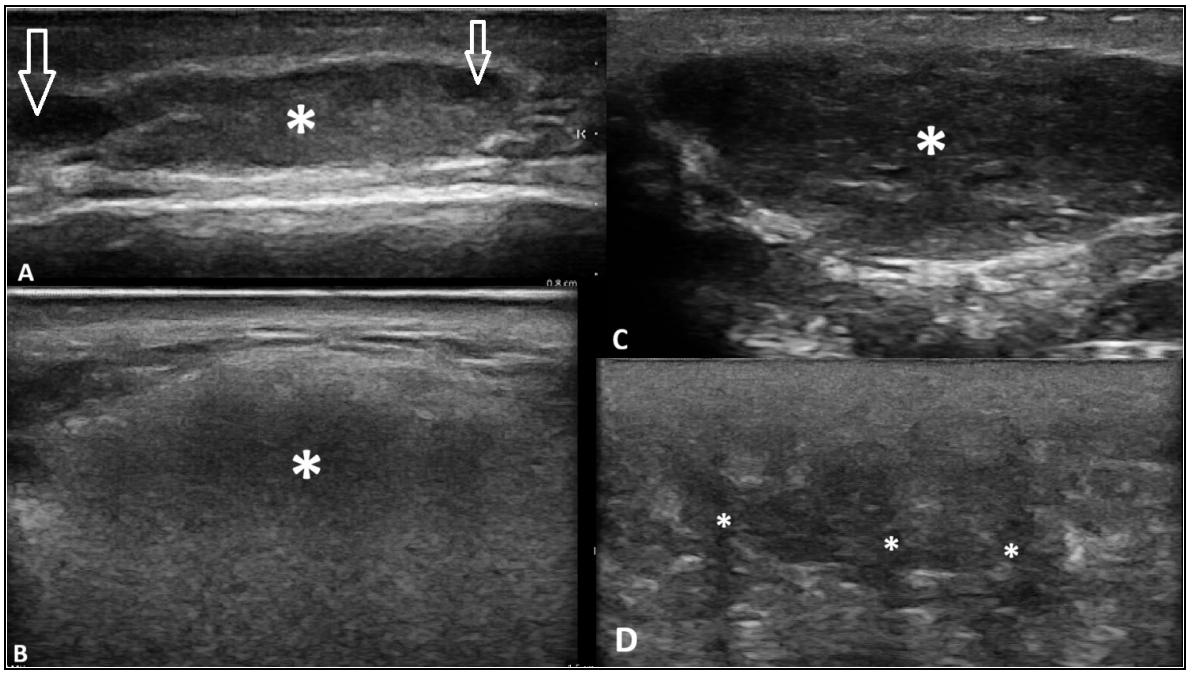


Figure 1. Representative ultrasonographic images of filler-related complications (A) Ultrasound image obtained 12 months after hyaluronic acid injection to the glabellar region, demonstrating a nodular granulomatous lesion with a central hyperechoic component (asterisk) and surrounding hypoechoic to anechoic foci corresponding to residual hyaluronic acid deposits (arrows). (B) Ultrasound image of silicone filler in the zygomatic region showing a hypoechoic nodular lesion (asterisk) with a characteristic “snowstorm” pattern, consistent with silicone. (C) Ultrasound image acquired 11 years after mid-face hyaluronic acid injection, demonstrating a heterogeneous hypoechoic lesion (asterisk) compatible with abscess formation. (D) Ultrasound image obtained five months after calcium hydroxylapatite (CaHA) injection to the zygomatic region, demonstrating diffuse edema and inflammatory changes with characteristic hypoechoic acoustic shadowing(asterisk) columns secondary to calcium deposits.

Results

The median age was 43 years (IQR: 34.5–45.5), and 94.7% of patients were female. Hyaluronic acid was the most frequently used filler (63.2%), followed by silicone (21.1%) and calcium hydroxylapatite (15.8%). The mid-face was the most commonly involved anatomical region (63.2%). Complications predominantly showed a delayed-onset pattern, with a median symptom onset of 30 months (IQR: 9.25–54); 61.1% occurred more than 12 months after injection. Clinically, nodules (89.5%) and edema (73.7%) were the most common findings, while abscess formation was less frequent (10.5%). Ultrasonography revealed significant diagnostic discrepancies: 60% of abscesses were detected only by ultrasonography, and in two patients with clinically palpable nodules, ultrasonography excluded granuloma and instead identified abscess formation. Prior to referral, 52.6% of patients had received repeated hyaluronidase treatments. At our center, combined intralesional 5-fluorouracil and corticosteroid therapy was the most common treatment (84.2%), requiring multiple sessions. Overall treatment response was achieved in 73.7% of patients.

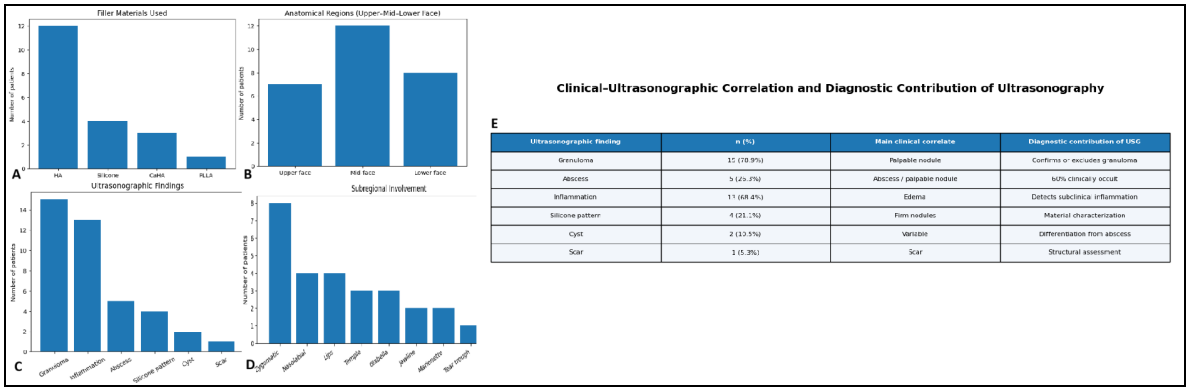


Figure 2. Distribution of filler materials (A), anatomical regions (B), ultrasonographic findings (C), and

subregional involvement (D) clinical–ultrasonographic correlation and diagnostic contribution of ultrasonography in filler-related complications (E) in patients with filler-related complications.

Conclusions

Filler-related complications predominantly present as delayed-onset conditions and often require repeated, multimodal treatment strategies. Ultrasonography provides substantial diagnostic and therapeutic added value by detecting clinically occult abscesses and by accurately distinguishing granulomatous reactions from abscesses in clinically ambiguous nodular lesions. Incorporation of ultrasonography into routine evaluation and management algorithms may significantly improve diagnostic accuracy and guide appropriate treatment selection in patients with filler-related complications.

Abstract N°: ID-742

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Normal Saline Injection for Corticosteroid-Induced Cutaneous Atrophy: A Systematic Review

Jia Qi Adam Bai[1], Jennifer Tran[2], Harry Chaocheng Liu*[3]

[1]University of Ottawa, Faculty of Medicine, Ottawa, Canada
[2]Western University, Schulich School of Medicine and Dentistry, London, Canada
[3]University of British Columbia, Department of Dermatology and Skin Science, Vancouver, Canada

Introduction
Corticosteroid-induced cutaneous atrophy is a frequent iatrogenic complication of intralesional and intramuscular corticosteroid administration, characterized by dermal thinning, lipoatrophy, and contour deformities that may be cosmetically distressing and slow to resolve. Despite its prevalence, evidence-based treatment options remain limited. Intralesional normal saline (NS) injection has emerged as a simple, low-cost, and minimally invasive therapeutic approach; however, its efficacy and safety have not been comprehensively evaluated. This systematic review aimed to synthesize the available evidence on the clinical outcomes of NS injections for corticosteroid-induced cutaneous atrophy.

Materials and Methods
This systematic review was conducted in accordance with PRISMA guidelines and registered prospectively (CRD420251274107). MEDLINE, Embase, Web of Science, and CENTRAL were searched from inception using predefined keywords. Two reviewers independently screened studies and extracted data. Study quality was assessed using the Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence, and risk of bias was evaluated using the Joanna Briggs Institute appraisal tools.

Results
Sixteen studies comprising 41 patients with 48 atrophic lesions were included. The mean patient age was 20.2 years (range: 1.9-53.0), and 58.5% were female. The most frequently implicated corticosteroid was triamcinolone acetonide (85.3%), administered primarily via intralesional or intramuscular injection, followed by dexamethasone (11.8%), and hydrocortisone (2.9%). Mean time from corticosteroid exposure to onset of atrophy was 10.3 weeks (range: 1.0-52.0). Atrophy presentations included lipoatrophy (61.0%), dermal atrophy (12.2%), and mixed atrophy (26.8%), with the buttocks being the most commonly affected site. All patients received intralesional 0.9% NS injections. The mean injection volume per session was 12.9 mL (range: 1.0-100.0), with a mean of 4.2 treatment sessions administered over 8.2 weeks. Complete resolution was achieved in 83.3% of lesions, partial improvement in 8.3%, and no response in 8.3%. Among patients with associated hypopigmentation, 90.9% demonstrated pigment improvement following treatment. Adverse events were rare and mild, consisting of one (2.4%) patient reporting transient injection-site discomfort and ecchymosis. No recurrence was reported during a mean follow-up duration of 3.7 months.

Conclusions
Intralesional normal saline injection appears to be a safe, accessible, and effective treatment for corticosteroid-induced cutaneous atrophy, with high rates of lesion resolution and minimal adverse effects. Given its low cost, ease of administration, and favorable safety profile, NS injection represents a practical therapeutic option in both dermatologic and non-dermatologic clinical settings. While current evidence is limited by study heterogeneity and potential reporting bias, these findings warrant further prospective studies to establish standardized treatment protocols and evaluate long-term outcomes.

Abstract N°: ID-747

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

FRACTIOAL ABLATIVE LASERS AND ETHNIC SKIN: PRECISION PROTOCOLS FOR OPTIMAL OUTCOMES

Maria M. Tsoukas*[1], Ishita Aggarwal[2]

[1]University of Illinois, Chicago, Dermatology and Skin Surgery, Dermatology, Chicago, United States
[2]University of Illinois, Chicago, Chicago, United States

Introduction

Fractional laser resurfacing represents a widely used treatment method in dermatology aiming at enhancing skin tone, scar improvement, texture, and pigmentation. The existing literature is understudied in ethnic skin patients and demonstrates variability in outcomes. The primary aim of this review is to discern the efficacy and safety profiles of fractional ablative lasers for treating common dermatologic conditions in patients with skin types IV-VI, while minimizing adverse events, particularly post-inflammatory hyperpigmentation (PIH).

Materials and Methods

A PubMed/MEDLINE search was conducted for studies on fractional ablative lasers in skin of color patients. Data on demographics, laser types, outcomes, and adverse events were extracted. Studies lacking individual outcomes were excluded. Inclusion criteria were: a) Clinical studies (following or assessing therapeutic benefit), b) Studies limited to human subjects and English language, c) Fitzpatrick skin types IV, V, and VI, d) Studies involving non-caucasian identifying patients, e) Use of fractional ablative lasers (10,600nm fractional CO2 lasers, 2940nm fractional Er:YAG lasers, 1790nm fractional Er:YSGG lasers) for any dermatologic condition. Exclusion criteria included: a) Review articles, commentaries, guidelines, b)Studies done on non-human subjects and not in the English language, c) Fitzpatrick skin types I-III only, d) Studies that did not specify skin type, race, or ethnicity, e) Microneedling and radio frequency treatments, f) Traditional lasers, Non-ablative fractional lasers (IPL, PDL, 1320nm and 1064nm Nd:YAG, diode, 1540nm/1550nm Er:Glass) for any dermatologic condition.

Results

1,036 studies were initially identified, of which 56 met the inclusion criteria. Among the 618 patients of skin-of-color (SPT IV: 516, V: 85, VI: 17), the majority were treated with ablative fractional CO_2 lasers (approximately 70%), followed by Er:YAG lasers (25%), with combined/other modalities accounting for 5%. Indications included atrophic/acne scars (66%), skin rejuvenation (11%), benign conditions (12%), striae (6%), and melasma/hyperpigmentation (5%). Complete resolution was reported in two cases (milia, pearly penile papules), while most studies noted significant but incomplete improvement. In studies with available denominators (n = 288), PIH was the most common adverse event, affecting approximately 32% of patients. Other common transient effects included erythema, edema, and pain. Scarring was rare, occurring in isolated instances.

Conclusions

Ablative fractional lasers, especially CO_2 and Er:YAG, show significant benefits for atrophic/acne scars and skin rejuvenation in ethnic skin. PIH remains the primary limiting factor. The available evidence of fractional ablative laser resurfacing in patients with darker SPT suggests that it can be used effectively across multiple indications, with the

strongest support for the treatment of atrophic and acne scars. For striae distensae and skin rejuvenation, fractional ablative lasers appear to provide clinically meaningful improvement, although outcomes are comparable to alternative energy-based modalities. In melasma, benefits are less consistent and largely short term, supporting the role of fractional ablative lasers as adjunctive rather than primary therapy. Across use-cases, PIH remains the most common adverse event, while scarring and permanent dyspigmentation are uncommon but clinically significant when they occur. Optimization of parameters with emphasis on decreased fractional density followed by reduced energy settings are highlighted. Future studies should focus on adequately powered randomized clinical trials with standardized outcome measure, long-term follow-up, and recruitment of diverse skin types to better define optimal parameters and establish evidence-based guidelines. Addressing these gaps is vital to improving the safety, efficacy, and equity of laser resurfacing practices for ethnic skin.

Abstract N°: ID-801

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Combined hyaluronic acid-based injectables and microneedling RF for post-acne scars: a case series with instrumental skin assessment

Galina Menshchikova*[1], Dmitry Petrunin[2], Anastasia Miagkova[3]

[1]Elegiya Clinic, Moscow, Russian Federation
[2]Federal State Budgetary Institution of Continuing Professional Education “Central State Medical Academy” of the Administrative Department of the President of the Russian Federation, Moscow, Russian Federation
[3]I.M. Sechenov First Moscow State Medical University, Moscow, Russian Federation

Introduction
Atrophic post-acne scars represent a frequent and therapeutically challenging complication of acne, often requiring multimodal approaches targeting dermal remodeling, skin texture irregularities, and post-inflammatory changes. Combination strategies integrating injectable hyaluronic acid (HA) formulations with energy-based devices are increasingly used in aesthetic dermatology. However, real-world data with objective instrumental assessment remain limited. This case series aims to describe clinical outcomes and objective skin quality parameters in short-term observation, as well as tolerability and adverse event profile following a combined treatment protocol using microneedling radiofrequency (RF) and hyaluronic acid-based injectables in patients with post-acne scars.

Materials and Methods
The study included five female patients (29-35 years; mean age 33 years) with atrophic post-acne scars. All patients received a standardized 94-day combined treatment protocol integrating injectable hyaluronic acid and microneedling RF procedures.
The protocol comprised sequential intradermal injections of auto-cross-linked HA followed by sessions of microneedling RF, and a final stage combining auto-cross-linked and multi-cross-linked HA. The cumulative volume of injected hyaluronic acid per participant ranged from 3 to 6 mL of auto-cross-linked HA and 1 to 2 mL of multi-cross-linked HA over the full treatment course. Clinical photography was performed at baseline (day 0) and at follow-up (day 94) in all cases. Quantitative three-dimensional skin analysis was available for two patients who completed full instrumental follow-up. The assessed parameters included skin texture, surface roughness, maximum height, wrinkles, pigmentation, and erythema.

Results
Clinical improvement in skin texture, scar appearance, and overall skin quality was observed in all five patients. Objective assessment in two patients demonstrated consistent improvement in skin topography. Surface roughness parameters (Ra and Rq) decreased by approximately 15-37%, while the maximum height of the skin profile was reduced by approximately 16-21%. Texture scores improved by 16-46%. The overall wrinkle score decreased from 14 to 8 and from 28 to 2, respectively. Reductions in wrinkle length ranged from 33% to 94%, while reductions in maximum wrinkle depth ranged from 26% to 40%. Furthermore, a decrease in pigmentation and post-inflammatory erythema was observed. Pigmentation-related parameters showed reductions of approximately 10-22%, while erythema-related parameters decreased by approximately 9-24%. All procedures were well tolerated, with no major adverse effects and minimal recovery time.

Conclusions

These results suggest that a combined protocol of microneedling RF and hyaluronic acid-based injectables may provide objective improvement in skin texture and atrophic post-acne scars over short-term follow-up. Instrumental 3D analysis supports clinical observations and highlights the potential of this combined approach. However, given the observational nature of this study and the limited sample size, further large randomized controlled trials are needed to quantitatively confirm the benefits, optimize treatment regimens and sequences, and develop protocols that take into account scar phenotype, skin phototype and individual treatment goals.

Abstract N°: ID-844

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Atrophic scarring of the nasal alar complex following long-pulsed 1064-nm Nd:YAG laser: a dual-centre safety analysis of cooling modality

Xiaozhun Hang*[1], Davin Lim[2]

[1]Mowbray Park Medical and Dermatology, Dermatology, East Brisbane, Australia
[2]Cutis Clinic, Dermatology, Indooroopilly, Australia

Introduction

Atrophic scarring following long-pulsed 1064-nm Nd:YAG laser treatment for vascular lesions is uncommon but potentially permanent. In clinical practice, the nasal alar complex appears to represent a particularly vulnerable anatomical region. This dual-centre study evaluated cases of atrophic scarring following treatment of nasal alar and perialar telangiectasia, aiming to identify contributing factors and inform strategies to improve procedural safety.

Materials and Methods

We conducted a retrospective review of consecutive patients treated for nasal alar and perialar telangiectasia between January 2020 and September 2025 using long-pulsed 1064-nm Nd:YAG laser systems. A total of 513 patients underwent 578 treatment sessions across four devices. Cases of permanent atrophic scarring were identified through chart review and standardized photographic documentation. Permanent scarring was defined as persistence beyond ≥6 months, assessed through in-person clinical review with standardized photography, with available follow-up ranging approximately from 6-12 months. Treatments were stratified by cooling modality: integrated contact gel-based cooling versus cryogen spray cooling.

Results

Three cases of permanent atrophic scarring were identified (3/578 procedures, 0.52%, 95% CI 0.11-1.51%). All occurred following treatment with contact-cooled devices (3/195 procedures, 1.54%, 95% CI 0.32-4.43%), whereas no scarring events were observed with cryogen spray cooling (0/383 procedures; 0%, 95% CI 0-0.96%)(Table 1). This difference was statistically significant (Fisher's exact test, p=0.04).

Cooling modality	Procedures (n)	Scarring cases (n)	Scarring rate % (95% Confidence interval)
Contact cooling	195	3	1.54 (0.32-4.43)
Cryogen cooling	383	0	0.00 (0-0.96)
Total	**578**	**3**	**0.52 (0.11-1.51)**

Table 1. Frequency of atrophic scarring following long-pulsed 1064-nm Nd:YAG laser treatment of the nasal alar region, stratified by epidermal cooling modality. Values represent number of procedures with atrophic scarring relative to total procedures performed for each cooling modality.

Conclusions

Atrophic scarring of the nasal alar region appears related to the complex three-dimensional anatomy of this area, which may impair consistent plate-gel-skin contact and compromise epidermal cooling when contact-based systems are used. Inadequate cooling likely increases susceptibility to thermal injury and subsequent scarring. Cryogen spray cooling may therefore provide a wider safety margin for treatment of the nasal alar complex and potentially other anatomically complex facial regions. These findings underscore the importance of anatomical risk stratification and cooling modality selection to minimize serious laser-related adverse events in routine dermatologic practice.

Abstract N°: ID-846

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Reducing post-inflammatory hyperpigmentation after fractional CO_2 laser in darker skin types using a novel adjunctive depigmenting regimen: a randomized evaluator-blinded study

Xiaozhun Hang*[1], Davin Lim[2]

[1]Mowbray Park Medical and Dermatology, Dermatology, East Brisbane, Australia
[2]Cutis Clinic, Dermatology, Indooroopilly, Australia

Introduction
Fractional carbon dioxide (CO_2) laser resurfacing is an effective treatment for atrophic acne scarring but is associated with a high risk of post-inflammatory hyperpigmentation (PIH), particularly in patients with darker skin types (Fitzpatrick III-V). This risk limits access to highly effective laser treatments and contributes to inequities in dermatologic care. Strategies that reduce PIH without compromising scar outcomes are therefore needed to improve both safety and treatment equity.

Materials and Methods
This prospective, randomized, evaluator-blinded study included 29 patients with Fitzpatrick skin types III-V undergoing fractional CO_2 laser resurfacing for atrophic acne scars. Participants were randomized to receive an adjunctive pre- and post-treatment depigmenting peel containing azelaic acid, tranexamic acid, niacinamide, glycolic/lactic acids, salicylic acid and retinol n=15), or standard care alone (n=14). The primary outcome was PIH severity at Week 6, assessed using the Post-Inflammatory Hyperpigmentation Area and Severity Index (PIHASI). Secondary outcomes included time to re-epithelialization and change in acne scar severity using the Goodman and Baron scale.

Results
At Week 6, the adjunctive regimen group demonstrated a lower median PIHASI score compared with controls (0.0 [IQR 0.0-0.2] vs 0.2 [IQR 0.2-0.4], p=0.02). Re-epithelialization time was comparable between groups (mean 6.4 vs 6.2 days). Improvement in acne scar severity did not differ significantly (mean scar grade reduction 1.27 ± 0.59 vs 1.36 ± 0.63, p=0.69). No serious adverse events were observed.

Conclusions
Adjunctive use of a standardized depigmenting regimen before and after fractional CO_2 laser resurfacing significantly reduced PIH severity in patients with darker skin types without compromising healing or scar improvement. By mitigating a key treatment-limiting adverse effect, this approach may expand access to effective laser resurfacing for patients at higher risk of pigmentary complications and represents a practical strategy to improve procedural safety and equity in dermatologic care.

Abstract N°: ID-890

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Isolated Diplopia Revealing Seropositive Ocular Myasthenia Gravis After Cosmetic Botulinum Toxin Injection

Maria Theresa Gebrael*[1], Jean EL Hajj[1], Claudia Chidiac[1], Riam Hijazi[1], Farid Stephan[1]

[1]Hotel Dieu De France Clinic, Dermatology, Achrafieh, Lebanon

Introduction

Myasthenia gravis (MG) is an autoimmune disorder of the neuromuscular junction, frequently presenting with fluctuating ocular symptoms. Cosmetic botulinum toxin type A (BoNT-A) injections are widely performed and generally safe; however, rare cases suggest that BoNT-A may unmask subclinical neuromuscular junction disorders. Distinguishing early ocular MG from toxin diffusion–related adverse effects remains clinically challenging.

Materials and Methods

We report a 40-year-old woman who developed recurrent, fluctuating diplopia following cosmetic OnabotulinumtoxinA injections administered over a seven-year period. Diplopia occurred after two separate injection sessions and resolved spontaneously. Neurological examination was normal. Serologic testing revealed elevated acetylcholine receptor antibodies (2.3 nmol/L). Repetitive nerve stimulation and electromyography showed no pathological decrement. Despite normal electrophysiological findings, the combination of seropositivity and fluctuating ocular symptoms supported the diagnosis of seropositive ocular myasthenia gravis. The patient was treated with pyridostigmine, resulting in clinical improvement. Imaging excluded thymoma.

Results

This case represents the third reported instance of isolated diplopia as the sole presenting manifestation of MG following cosmetic BoNT-A injection. Unlike toxin diffusion–related diplopia, the symptoms were fluctuating and associated with serologic autoimmunity. Normal electromyography did not exclude the diagnosis.

Conclusions

Recurrent or fluctuating ocular symptoms after cosmetic botulinum toxin injections should prompt evaluation for underlying myasthenia gravis. BoNT-A may act as a physiological stressor revealing latent neuromuscular junction dysfunction rather than causing a direct adverse effect. Early recognition is essential to prevent misdiagnosis, inappropriate retreatment, and disease progression, particularly as ocular MG may present with normal electrophysiological studies.

Abstract N°: ID-903

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

THE SIGNIFICANCE OF OXIDATIVE STRESS AND MOLECULAR MARKERS IN SKIN PHOTOAGING AND CORRECTION METHODS

Marguba Nazarova*[1]

[1]Republican Specialized Scientific-Practical Medical Center of Dermatovenereology and Cosmetology, Tashkent, Uzbekistan., Tashkent, Uzbekistan

Introduction
Today, studying the molecular mechanisms of oxidative stress-induced skin photoaging is a pressing issue not only in genetics but also in dermatocosmetology. This study examines the diagnostic evaluation and role of markers such as 8-OHdG and MMP-1. Using comparative economic and statistical analysis, the study demonstrates the cost-effectiveness of early molecular correction strategies compared to later-stage hardware-based cosmetology, offering a rationale for optimizing therapeutic protocols in aesthetic medicine.

Objective of the study The research aims to investigate molecular marker dynamics during photoaging and conduct a comparative analysis of the economic and clinical efficacy of correction methods to optimize treatment protocols and minimize patient financial burdens.

Materials and Methods
The study utilized a systematic review of clinical data and a retrospective meta-analysis involving 120 patients with varying degrees of photoaging (Glogau types I-IV). Molecular analysis included the evaluation of 8-hydroxy-2'-deoxyguanosine (8-OHdG) levels and matrix metalloproteinase-1 (MMP-1) activity in skin biopsy homogenates using enzyme-linked immunosorbent assay (ELISA). Economic efficiency was assessed using Cost-Effectiveness Analysis (CEA) and by calculating the Incremental Cost-Effectiveness Ratio (ICER). Market prices for cosmetic procedures (antioxidant therapy versus fractional laser photothermolysis) were analyzed based on 2024-2025 data from aesthetic clinics. Statistical processing was performed using SPSS 26.0, with differences considered significant at $p<0.05$.

Results
The analysis of molecular markers revealed that UV exposure significantly alters skin homeostasis. In patients with pronounced photoaging, MMP-1 expression increased by 3.5 times compared to the control group, leading to accelerated degradation of type I and III collagen fibers . The level of 8-OHdG, a marker of DNA damage, was 42% higher in photoaged skin, correlating with reduced regenerative potential.

The economic-statistical analysis highlighted a substantial disparity in treatment costs. The annual cost of preventative antioxidant therapy (using L-ascorbic acid and tocopherol) was found to be 4.5 times lower than a complete course of laser resurfacing required for advanced photoaging. When evaluating the Cost-Effectiveness Ratio, early-stage molecular correction yielded a higher return on investment: a 3-month course of peptide therapy (e.g., palmitoyl pentapeptide-4) increased procollagen synthesis by 100-327% and improved skin elasticity by 25-30% . Conversely, while laser procedures offered rapid results, they were associated with a 15-20% increase in indirect costs due to the required rehabilitation period and temporary loss of labor capacity.

Furthermore, a combined therapeutic approach (systemic antioxidants + topical retinoids) demonstrated a 60% higher clinical efficacy in restoring skin microrelief compared to monotherapy. Long-term economic projections indicate that

using collagen stimulators (e.g., poly-L-lactic acid) is 1.8 times more financially beneficial than hyaluronic acid-based fillers over a 24-month period due to the prolonged duration of the effect

Conclusions

Skin photoaging is a molecularly driven process where oxidative stress plays a pivotal role. The timely detection of markers such as 8-OHdG and MMP-1 allows for the implementation of targeted pathogenetic therapy. The study confirms that preventative strategies and early molecular correction are not only clinically superior but also economically advantageous. Transitioning from reactive treatments to predictive protocols based on molecular diagnostics can significantly reduce the financial burden on patients while enhancing the quality of aesthetic outcomes.

Abstract N°: ID-1068

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Pulsed Dye Laser for Port-Wine Stains in Skin of Color: Real-World Outcomes from a Resource-Limited Setting

Elisha Shrestha*[1]

[1]Dhulikhel Hospital Kathmandu University Hospital, Dhulikhel Hospital, Dermatology, Dhulikhel, Nepal

Introduction
Port-wine stains (PWS), also known as nevus flammeus, are congenital capillary malformations characterized by ectatic dermal blood vessels, clinically presenting as pink to violaceous macules that may darken, thicken, and develop nodularity over time if untreated. The 595-nm pulsed dye laser (PDL) is considered the gold-standard treatment for PWS which works on the principle of selective photothermolysis. Treatment of PWS in darker skin types is challenging due to increased epidermal melanin, which competes with hemoglobin as a chromophore and may increase the risk of pigmentary adverse effects. Given the scarcity of published data from Nepal and similar settings, this study aims to evaluate the efficacy and safety of 595-nm PDL in Fitzpatrick skin type IV patients treated for PWS at a tertiary dermatology center in Nepal.

Materials and Methods
A retrospective case series of patients with PWS treated with 595-nm PDL between July 2022 and December 2024 was conducted. Treatment response was assessed using the Physician Global Assessment (PGA), and adverse effects were recorded.

Results
Twenty-five patients (mean age 26.1 ± 10.0 years) were included. All had Fitzpatrick skin type IV. After a mean of 5.5 treatment sessions, 20 (80%) achieved moderate to significant improvement, while near-complete clearance was seen in 2 (8%). Post-inflammatory hyperpigmentation occurred in 3(12%) and resolved with conservative management. No scarring or permanent pigmentary change was observed.

Conclusions
PDL is a safe and effective treatment for PWS in Fitzpatrick skin type IV patients. This study adds important real-world evidence from Nepal and supports the use of PDL in skin of color when appropriate parameters are used.

Abstract N°: ID-1270

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Synergistic antioxidant effects of a propolis polyphenol delivery system combined with a stable vitamin C derivative and vitamin E: Effects on skin protection

Eleni Panagiotidou[1], Sophia Athanasopoulou[1], Maria Gkika[1], Woodys Lenga[2], Andrea Cavagnino[2], Konstantinos Gardikis*[1, 3]

[1]APIVITA S.A., Research and Development, Athens, Greece
[2]OxiProteomics SAS, Creteil, France
[3]Frederick University, Department of Pharmacy, Nicosia, Cyprus

Introduction

L-ascorbic acid (vitamin C) and vitamin E are well-established antioxidants known to mitigate skin aging, particularly under environmental stress conditions such as ultraviolet (UV) exposure. Both compounds effectively neutralize reactive oxygen species (ROS), helping skin protection from oxidative damage. When combined, vitamins C and E (Vit C/E) act synergistically, resulting in enhanced antioxidant efficacy. In the present study, we sought to further potentiate this synergistic effect through the incorporation of a propolis polyphenols delivery system (PPDS). This system is based on an advanced encapsulation technology using liposomes and cyclodextrins to encapsulate and stabilize propolis polyphenols[1]. A cosmetic serum formulation combining 3-O-ethyl ascorbic acid (a stable vitamin C derivative), vitamin E, and PPDS (Vit C/E-PPDS) was developed with the aim of reinforcing cutaneous antioxidant defenses and improving skin resilience against oxidative stress.

Materials and Methods

A preclinical study was performed using human skin explants to evaluate the contribution of propolis extract to a serum formulation containing Vit C/E. Explants were treated with the serum either with or without PPDS and subsequently exposed to environmental stressors, namely particulate matter (PM10) combined with UV-A radiation. Levels of expression of collagen IV, elastin, and the ROS levels were quantified *in situ* using immunodetection assays. In parallel, a clinical study was conducted involving 32 female volunteers (mean age: 53.5 ± 8.8 years). Participants applied the serum containing all three active ingredients (Vit C/E-PPDS) twice daily for 56 days. Evaluations were performed at baseline (T0), day 28, and day 56. More specifically, skin radiance was assessed by spectrophotometry, while skin profilometry—including wrinkle depth at the crow's feet and nasolabial folds—were quantitatively analyzed using skin imaging techniques. Finally, skin antioxidant potential is assessed by the evaluation of the antioxidants in the first skin layers (stratum corneum). Stratum corneum samples were collected by tape stripping using Corneofix® foils. Strips were analyzed for total antioxidant capacity using the FRAP assay, based on the reduction of the Fe(III)–TPTZ complex and absorbance measurement at 595 nm.

Results

Preclinical results showed that the incorporation of PPDS in the Vit C/E serum significantly enhanced its protective effects by reducing stress-induced ROS production and preventing the stress-related reduction of collagen IV and elastin. These protective effects were more pronounced than those observed with the formulation lacking PPDS. Clinically, the serum Vit C/E-PPDS led to improved skin radiance and a statistically significant reduction, compared with baseline, in wrinkle depth at the crow's feet and nasolabial areas at both day 28 and day 56. Moreover, it was observed a statistically significant increase of Fe2+ μM vs T0 by +41.3% and +52.1%, respectively at T28, and T56.

Conclusions

Our data highlight the added value of PPDS to the cosmetic formulation of Vit C/E. The formulation not only preserved key extracellular matrix components—collagen IV and elastin— under stress conditions, but also improved visible signs of skin aging, including radiance and wrinkle depth, while increasing skin's antioxidant capability. These findings support the efficacy of this multi-antioxidant complex as a potent strategy for protecting the skin from environmental aggressors and promoting a more youthful appearance.

Abstract N°: ID-1288

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Topical Melatonin as an Anti-Aging Strategy: A Double-Blind Randomized Controlled Trial on Wrinkle Reduction and Skin Hydration Enhancement

Andi Nurul Fasty Batari*[1], Christy Angelia Budiono[1], Anis Irawan Anwar[1], Asnawi Madjid[1], Widya Widita[1]

[1]Faculty of Medicine Hasanuddin University, Dr. Wahidin Sudirohusodo Hospital, Dermatology and Venereology Department, Makassar, Indonesia

Introduction

Skin aging is a physiological process characterized by wrinkle formation and decreased skin hydration resulting from oxidative stress and environmental exposure. There are several treatments to prevent skin aging, one of which is the use of antioxidants. Antioxidants act as reducers that can alleviate skin aging by neutralizing Reactive Oxygen Species (ROS). Melatonin (MT) is called the hormone of darkness because it is produced in response to darkness. Melatonin in the skin is a potent antioxidant that protects mitochondrial and cellular function. Some studies indicate that MT is a molecule capable of scavenging free radicals, exhibits anti-inflammatory effect, and protects skin from UV-induced damage. It can penetrate skin's lipid barrier, reduce oxidative stress, modify mitochondrial function, and influence the expression of certain genes. Fischer et al. noted that for clinical dermatology applications, exogenous melatonin should be used topically rather than orally because oral administration of melatonin appears at low levels in the blood due to prominent first-pass degradation in liver, limiting its access to the skin. The The aim of this study is to investigate the effectiveness of topical melatonin on the improvement of wrinkle indices, and skin hydration as an anti-aging treatment.

Materials and Methods

This study employed a true-experimental double blind randomized controlled trial with pre- and post-treatment. A total of 40 female subjects aged 45–60 years with Glogau grade III skin aging were randomly assigned to a treatment group receiving 0.1% topical melatonin cream and a control group receiving placebo cream. The cream was applied twice daily for 12 weeks. Wrinkle index was assessed using a skin analyser, and skin hydration was measured using a corneometer at the forehead, right cheek, and left cheek at weeks 0 to 12.

Results

The topical melatonin group demonstrated a significant reduction in wrinkle index from week 4 to week 12, with a mean decrease of 3.55 ± 8.12 at the end of the study, while the placebo group showed no significant improvement ($p<0.05$). Skin hydration in the treatment group increased significantly in all assessed areas, with the greatest improvement observed on the forehead (16.80 ± 15.77 AU) at week 12 compared with baseline ($p<0.05$), whereas the placebo group showed a decrease or fluctuation in skin hydration during the observation period.

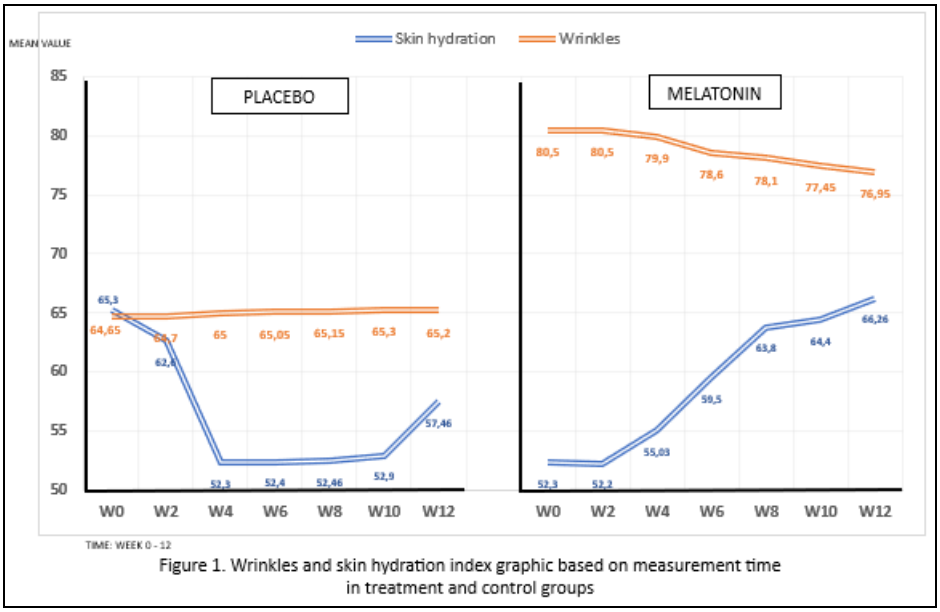


Figure 1. Wrinkles and skin hydration index graphic based on measurement time in treatment and control groups

Wrinkles and skin hydration index graphic based on measurement time in treatment and control group

Conclusions

Topical melatonin 0.1% is effective in improving wrinkle index and increasing skin hydration, and therefore has potential as an anti-aging agent.

Abstract N°: ID-1289

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Hypovascular hypopigmentation After Pulsed Dye Laser for Rosacea: An Underreported Complication and a Novel Therapeutic Approach

Evangelia Vetsiou[1], Saqib Bashir*[1]

[1]King's College Hospital, Dermatology, London, United Kingdom

Introduction

Pulsed dye laser (PDL) is widely used in dermatology to treat facial erythema, rosacea, and vascular lesions. While PDL is generally considered safe and effective, it can cause adverse effects, including pigmentary changes. Reports indicate that hypopigmentation occurs in approximately 1-5% of patients undergoing PDL treatment which is a rare but distressing complication that often proves resistant to further interventions and may result in cosmetic disfigurement. This report presents a complex case of laser-induced hypovascular hypopigmentation following PDL in a patient with concurrent acne and rosacea, and details a successful multimodal laser approach for repigmentation.

Materials and Methods

A 38-year-old female project manager with a history of acne and rosacea involving both cheeks and the glabella presented with persistent facial erythema. Her acne was well managed with topical agents and oral spironolactone (initially 75 mg daily). She had previously undergone multiple sessions of Intense Pulsed Light (IPL) therapy (vascular filter) without improvement in erythema. Subsequently, she received five sessions of PDL (7mm spot size, 7J/cm^2 fluence, 10ms ms pulse width) from another provider, after which she developed well-demarcated hypovascular hypopigmented macules in a honeycomb pattern, most prominent on the right cheek.

The lesions remained stable and became particularly noticeable during rosacea flares, leading to psychological distress and hesitancy to pursue additional treatment. The patient consistently avoided sun exposure, excluding post-inflammatory tanning as a contributing factor. Clinical examination revealed reticulated vascular markings surrounding the hypopigmented macules, consistent with laser-induced vascular pallor.

After counseling and discussion of the limited therapeutic options for laser-induced hypopigmentation, a customized laser protocol was implemented. The regimen included PDL at a 10 mm spot size, 7.5 J/cm^2 fluence, and 6 ms pulse width, combined with Nd:YAG laser at a 3 mm spot size, 135 J/cm^2 fluence, and 10 ms pulse width. Treatment was initially performed on one cheek to assess safety and efficacy before proceeding to full-face application.

Results

Over five sessions, the hypovascular hypopigmented areas showed complete resolution, with visible blending of skin tone and repigmentation. No adverse effects occurred with this dual approach, and the patient has not experienced recurrence of hypopigmentation.

Conclusions

This case emphasizes hypovascular hypopigmentation as a significant yet underreported adverse effect of PDL therapy, particularly among patients treated for facial erythema and rosacea. The precise pathophysiology remains uncertain; however, proposed mechanisms include insufficient pulse overlap creating untreated skip areas and repeated high-fluence exposure causing superficial vascular compromise, local ischemia, or melanocyte dysfunction.

Therapeutic options for laser-induced hypovascular hypopigmentation remain limited and frequently yield unsatisfactory results. Nevertheless, this case demonstrates that a cautious, individualized protocol combining low-fluence PDL with a deeper-penetrating Nd:YAG laser can achieve clinically meaningful repigmentation. The Nd:YAG component likely facilitates dermal remodeling and vascular normalization, whereas low-fluence PDL may promote melanocyte reactivation through subclinical thermal stimulation. Furthermore, we hypothesize that employing a larger spot size at comparable fluence enhances treatment efficacy by more effectively targeting residual vascular areas, producing a more uniform clinical appearance.

In summary, this case highlights the importance of increased awareness and early recognition of this complication in aesthetic practice. Although prevention through conservative laser settings and appropriate patient selection remains essential, dual-wavelength laser therapy may offer a promising management strategy.

Abstract N°: ID-1290

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Durable Clearance of Extensive Actinic Keratoses and Bowen's Disease Using Photodynamic Therapy and Laser

Evangelia Vetsiou[1], Saqib Bashir*[1]

[1]King's College Hospital, Dermatology, London, United Kingdom

Introduction

Actinic keratoses (AKs) and Bowen's disease commonly result from chronic ultraviolet exposure and can manifest as extensive field cancerisation of the scalp. Although photodynamic therapy (PDT) is an established treatment, its use may be limited by pain and poor tolerability. Alternative or adjunctive laser-based modalities may provide effective treatment with improved tolerability in selected patients.

Materials and Methods

A male patient with extensive sun-damaged scalp, a history of severe childhood sunburn, prior basal cell carcinoma, Bowen's disease, and previous skin grafting to the left parietal scalp was evaluated. Clinical examination identified a 14-mm bleeding, scaling lesion on the left temporal scalp consistent with Bowen's disease, hyperkeratotic AKs on the vertex scalp, and additional AKs at other anatomical sites. The patient received two sessions of PDT in March and April 2024 for Bowen's disease and one session of PDT to the remaining scalp. Due to significant treatment-related pain, further PDT was not tolerated. The treatment approach was subsequently modified to include laser therapy using a 1940-nm non-ablative fractional laser to the scalp (30% fractionation, 4 passes),, and a single session of CO_2 laser for Bowen's disease.

Results

Diffuse application of the 1940 nm diode laser to the scalp led to rapid skin smoothing and resolution of extensive actinic keratoses and field cancerisation. The CO_2 laser was highly effective in treating ulcerated Bowen's disease, resulting in complete clinical remission.

Conclusions

This case demonstrates the effectiveness of fractional non-ablative and ablative laser modalities for managing extensive actinic keratoses and Bowen's disease when conventional PDT is poorly tolerated. The combined approach facilitates effective and faster field treatment by addressing both clinical and subclinical disease, enhancing efficacy in hyperkeratotic or extensive scalp involvement, and reducing the need for repeated, painful PDT sessions. Compared with topical therapies, cryotherapy, PDT alone, or laser monotherapy, this strategy provides a balanced and pragmatic option that maximizes treatment efficacy and durability while minimizing treatment burden. Durable clearance with favorable cosmetic outcomes was achieved, supporting the role of laser-assisted approaches in challenging cases of scalp field cancerisation.

Abstract N°: ID-1327

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

A Systematic Review and Meta-Analysis of the Comparison Between Lasers and Other Therapeutic Modalities in Skin Rejuvenation and Resurfacing

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Skin rejuvenation has become a prominent concern, particularly among middle-aged and elderly individuals. Several methods, including laser treatments, have been employed to address photoaging and skin wrinkles. Despite the prevalence of laser-based treatments, there is a need for systematic evaluation comparing lasers with other rejuvenation techniques to determine their relative efficacy. This study aims to systematically review and compare the effectiveness of lasers in skin rejuvenation and resurfacing compared to other treatment modalities.

Materials and Methods
This systematic review and meta-analysis adhered to PRISMA guidelines and included randomized clinical trials (RCTs) conducted from January 1, 2010, to August 9, 2025. The included studies compared laser modalities with other methods for improving rhytids and skin rejuvenation. Data extraction and quality assessment were conducted independently by two reviewers, and discrepancies were resolved by a third investigator. The primary outcome was the effectiveness of the treatments, categorized as excellent, good, fair, poor, or no change. Six studies with 497 patients were included in the meta-analysis, which was performed using a random-effects model.

Results
The pooled analysis revealed that Erbium YAG lasers showed superior results in the "excellent" response category, with 18% of patients exhibiting excellent responsiveness. Radiofrequency treatments demonstrated the highest percentage of "good" responses (39%), while intense pulsed light (IPL) showed better results in the "fair" category, with 39% of patients reporting fair outcomes. The analysis also highlighted the safety and effectiveness of both Erbium YAG lasers and radiofrequency treatments, with minimal side effects such as erythema and transient pain. Statistical heterogeneity was assessed using I2, and the findings indicated significant variability between the groups ($p = 0.000$).

Conclusions
Erbium YAG lasers and radiofrequency treatments emerged as the most effective modalities for skin rejuvenation, surpassing other treatments in both the "excellent" and "good" response categories. While IPL treatment had superior outcomes in the "fair" group, the combination of Erbium YAG laser and radiofrequency offers a promising approach for skin rejuvenation in clinical practice. The study emphasizes the need for further research with larger, standardized trials to confirm these findings and refine treatment protocols.

Abstract N°: ID-1330

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Evaluating the Effectiveness and Safety of Pulsed Dye Laser Alone, Pulsed Dye Laser Combined with Botulinum Toxin A, and Pulsed Dye Laser Combined with Triamcinolone Injection in the Treatment of Hypertrophic Scars and Keloids: A Randomized Controlled Clinical Trial

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Hypertrophic scars and keloids are common dermatological conditions characterized by excessive collagen production and abnormal scar tissue growth, leading to raised, red, and sometimes painful scars. Traditional treatment modalities include pulsed dye laser (PDL), corticosteroid injections, and botulinum toxin A (BTA). This study aims to evaluate the efficacy and safety of PDL alone, PDL combined with BTA injection, and PDL combined with triamcinolone injection in the treatment of hypertrophic scars and keloids.

Materials and Methods
A single-blind, three-arm, randomized controlled clinical trial was conducted with 10 adult patients. Each patient had at least three hypertrophic scars or keloids, with lesions measuring at least 10×10 cm. The lesions were randomly assigned to one of three treatments: PDL, PDL combined with BTA injection (2 units/cm^2), or PDL combined with triamcinolone injection (20 mg/ml). All treatments were repeated over three sessions, and one follow-up visit took place one month after the final session. A blinded dermatologist assessed the treatment effectiveness using the Vancouver Scar Scale (VSS) and physician global assessment (PGA) scores.

Results
At the end of the study, the PDL–BTA and PDL–Triamcinolone groups showed significantly greater improvements in pliability, vascularity, and height compared to the PDL-only group ($P < 0.001$). The PDL–BTA group showed the greatest improvement in pliability ($P < 0.001$), while the PDL–Triamcinolone group showed significant improvements in vascularity and scar height ($P = 0.01$ and $P = 0.001$, respectively). No significant differences were found in pigmentation scores between the groups ($P = 0.92$). Patient satisfaction levels in the PDL–BTA and PDL–Triamcinolone groups were significantly higher than in the PDL-only group ($P = 0.004$), with no major side effects reported.

Conclusions

Combination treatments with PDL–BTA and PDL–Triamcinolone offer superior results for hypertrophic scars and keloids compared to PDL alone. Specifically, PDL–BTA improved pliability, while PDL–Triamcinolone demonstrated better outcomes in vascularity and height. Both combination therapies are safe, effective, and well-tolerated, providing a promising alternative to single treatment approaches for scar management.

Abstract N°: ID-1348

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Comparative Efficacy of Ablative and Non-Ablative Lasers for Atrophic, Hypertrophic, and Keloid Scars: A Systematic Review

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Scar formation is a common outcome of wound healing, often leading to atrophic, hypertrophic, and keloid scars. These scars can significantly impair the quality of life. Laser therapies, both ablative and non-ablative, have emerged as key treatments for these scars. This review comprehensively evaluates the efficacy, safety, and patient satisfaction associated with various laser treatments for different types of scars.

Materials and Methods
A systematic review was conducted according to PRISMA guidelines, including studies published from January 2010 to February 2024. Relevant clinical trials were retrieved from PubMed, Scopus, Web of Science, and Embase. The studies were selected based on comparative outcomes of ablative versus non-ablative laser therapies in scar treatment. Data were extracted on efficacy, safety, pain scores, and patient satisfaction. Risk of bias was assessed using the Cochrane ROB2 tool.

Results
Out of 5951 records, 39 studies involving 1262 participants met the inclusion criteria. The majority of studies focused on atrophic scars, particularly acne scars (48.7%), with treatment sessions typically involving three sessions at 4-week intervals. Ablative lasers, such as CO2 and Er: YAG, were more effective for atrophic scars but were associated with higher pain and downtime. For hypertrophic and keloid scars, both ablative and non-ablative lasers demonstrated comparable efficacy, particularly when used in combination therapies. Patient skin type was a significant factor influencing treatment choice due to the risk of hyperpigmentation.

Conclusions
Both ablative and non-ablative lasers are effective in treating various types of scars. Ablative lasers, particularly for atrophic scars, provide higher efficacy but with increased pain and downtime. Non-ablative lasers offer a safer option for hypertrophic and keloid scars, with combination therapies enhancing treatment outcomes. Personalized approaches based on skin type are crucial to minimizing adverse effects and improving overall results. Further research is required to standardize treatment protocols and evaluate long-term outcomes.

Abstract N°: ID-1362

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Comparison of Pulsed Dye Laser and Ablative Fractional Lasers in the Treatment of Hypertrophic Scars: A Systematic Review

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Hypertrophic scars, often resulting from burns, surgeries, and trauma, can significantly impact patients' aesthetic appearance and quality of life. Laser therapy, specifically pulsed dye laser (PDL) and ablative fractional lasers, such as CO2 and Erbium-YAG lasers, has been explored as a treatment for hypertrophic scars. This systematic review aims to compare the efficacy of these laser treatments and evaluate the potential benefits of combining them.

Materials and Methods
A thorough search was conducted in databases such as PubMed, ScienceDirect, Web of Science, and Google Scholar, covering clinical trials and studies published until December 2025. The inclusion criteria focused on studies that evaluated the effectiveness of PDL and fractional ablative lasers for hypertrophic scars. Data extracted included the type of scar, treatment modalities, number of sessions, efficacy outcomes, safety profiles, and patient satisfaction scores.

Results
The review included 29 studies, with 727 patients and 976 lesions. Of these, 18 were randomized controlled trials, 8 were single-arm trials, and 3 were non-randomized studies. Both PDL and fractional ablative lasers showed significant improvement in hypertrophic scars. PDL treatments had an average of 3.68 sessions, while ablative fractional laser treatments had an average of 3.43 sessions. The combination of both lasers demonstrated superior results compared to either modality used alone, particularly in improving scar height, pigmentation, and pliability. However, the difference in efficacy between PDL and fractional lasers was not statistically significant. Side effects were mild, including erythema, pigmentation changes, and pain, with no severe adverse events reported.

Conclusions

Both PDL and ablative fractional lasers are effective treatments for hypertrophic scars, with no significant difference in their individual effectiveness. However, combining these laser treatments may lead to better clinical outcomes, particularly in terms of scar texture and pliability. Future research with larger, high-quality trials is recommended to further evaluate the combined use of these lasers and confirm their long-term efficacy and safety.

Abstract N°: ID-1368

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Evaluation of the Efficacy, Safety, and Satisfaction Rate of Topical Latanoprost in Patients with Hypopigmented Burn Scars Treated with Fractional CO2 Laser: A Double-Blind Randomized Controlled Clinical Trial

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Burn scars, particularly hypopigmented lesions, present significant aesthetic challenges for patients and can negatively impact psychological well-being. While various treatments such as corticosteroid injections, platelet-rich plasma, and fractional CO2 laser therapy are employed for scar treatment, the management of hypopigmented scars remains a significant clinical challenge. This study evaluates the use of topical latanoprost, a prostaglandin analog, combined with fractional CO2 laser therapy to promote repigmentation in hypopigmented burn scars.

Materials and Methods

A double-blind randomized controlled clinical trial was conducted involving 14 patients with hypopigmented burn scars. Patients were divided into two groups: one received fractional CO2 laser treatment combined with 0.005% latanoprost eye drops, while the other group received fractional CO2 laser treatment combined with a placebo (normal saline). The treatment was administered for 6 months, and patients were assessed at baseline and during three follow-up sessions at three-month intervals. Efficacy was measured using the Subject Global Aesthetic Improvement Scale (SGAIS) and patient satisfaction was evaluated using a Grade scale. Side effects were also monitored during the study.

Results
The results revealed a significant difference in improvement between the two groups. In the latanoprost group, 85.7% of patients achieved significant repigmentation (Grade 4: 50-74% improvement), compared to 0% in the placebo group. Patient satisfaction scores were significantly higher in the latanoprost group (8.50±0.65) compared to the placebo group (4.64±1.00), with a statistically significant difference (P=0.0001). No severe side effects were reported in either group.

Conclusions
The combination of fractional CO2 laser and topical latanoprost significantly improves the repigmentation of hypopigmented burn scars. This combination therapy not only enhances the laser's efficacy but also contributes to better patient satisfaction compared to laser treatment alone. Given the positive results, further studies with larger sample sizes and extended follow-up periods are recommended to confirm the long-term benefits and safety of this treatment approach.

Abstract N°: ID-1374

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Impact of Pentoxifylline on the Efficacy, Safety, Tolerability, and Patient Satisfaction of Fractional CO2 Laser in Patients with Hypertrophic and Keloid Burn Scars: A Pilot Blinded Randomized Controlled Trial

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Burn scars, particularly hypertrophic and keloid scars, often result from thermal injuries and pose significant cosmetic and functional challenges. Laser treatments, such as fractional CO2 lasers, have demonstrated efficacy in improving scar outcomes. However, the combination of laser therapy with adjunct treatments like Pentoxifylline, an anti-fibrotic and anti-inflammatory agent, has not been thoroughly studied. This trial aims to assess the impact of Pentoxifylline on the efficacy and patient satisfaction of fractional CO2 laser treatment for hypertrophic and keloid burn scars.

Materials and Methods
This pilot, assessor- and analyst-blinded randomized controlled trial was conducted with 22 patients diagnosed with hypertrophic or keloidal burn scars. The patients were divided into two groups: one group received fractional CO2 laser treatment alone, and the other received fractional CO2 laser treatment combined with oral Pentoxifylline (400 mg twice daily for four months). Scar improvement was assessed using the modified Vancouver Scar Scale (mVSS) at baseline, one month, and two months after treatment. Patient satisfaction and treatment tolerability were evaluated through self-reported questionnaires.

Results
Both groups demonstrated significant improvements in mVSS scores. The laser-only group showed a reduction in mVSS scores from 7.73 to 4.73, while the combination therapy group showed a decrease from 7.36 to 3.91 ($p<0.001$ for both). However, no statistically significant difference was observed between the groups ($p=0.39$). The combination group exhibited more pronounced improvements in pigmentation and higher patient satisfaction rates ($p=0.01$). No adverse effects were reported, and both treatments were well-tolerated.

Conclusions
Fractional CO2 laser therapy, with or without Pentoxifylline, is an effective and safe option for treating hypertrophic and keloid burn scars. While no significant difference in overall scar improvement was found between the two treatment regimens, the combination therapy improved pigmentation and led to higher patient satisfaction. Further studies with larger cohorts and longer follow-up periods are needed to confirm these findings and assess the long-term benefits of adding Pentoxifylline to laser therapy.

Abstract N°: ID-1412

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

The First Systematic Review and Meta-Analysis of Pharmacological and Nonpharmacological Procedural Treatments of Dark Eye Circles (Periorbital Hyperpigmentations)

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Dark eye circles, or periorbital hyperpigmentation (POH), are a common cosmetic concern with multiple contributing factors, including melanin deposition, vascular congestion, and skin laxity. This systematic review and meta-analysis aim to assess the efficacy, safety, and patient satisfaction associated with various pharmacological and procedural treatments for POH, helping to identify the most effective treatment modalities.

Materials and Methods
A systematic search was conducted across major databases up to 2023. Studies evaluating pharmacological or nonpharmacological treatments for POH were included. The included treatments were lasers, chemical peels, platelet-rich plasma (PRP), carboxytherapy, fillers, microneedling, and combination therapies. Clinical improvements, patient satisfaction, and adverse events were extracted and analyzed using meta-analysis.

Results
A total of 33 studies involving 1,320 patients were included. The meta-analysis showed that lasers (fractional CO2 and Nd:YAG) and combination therapies (microneedling with chemical peels or fillers with lasers) demonstrated the highest efficacy, with 82% and 75% of patients reporting over 50% improvement, respectively. Chemical peels, carboxytherapy, and PRP were less effective, benefiting 63%, 54%, and 44% of patients, respectively. Lasers and combination treatments also achieved the highest patient satisfaction rates (82% and 75%). Adverse events were generally mild and transient, including erythema, pain, and mild bruising. The most common side effects for lasers were transient burning and erythema, while Q-switched lasers were associated with higher post-inflammatory hyperpigmentation.

Conclusions
Lasers and combination therapies are the most effective and satisfactory treatments for POH, with minimal and transient adverse events. However, further studies with larger sample sizes, multiple-arm designs, and longer follow-ups are needed for more robust comparisons and to refine treatment strategies for POH.

Abstract N°: ID-1423

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Evaluation of the Efficacy, Safety, and Satisfaction Rates of Platelet-Rich Plasma, Non-Cross-Linked Hyaluronic Acid, and the Combination of Platelet-Rich Plasma and Non-Cross-Linked Hyaluronic Acid in Patients with Burn Scars Treated with Fractional CO2 Laser: A Randomized Controlled Clinical Trial

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Burn scars, including hypertrophic and atrophic scars, significantly impact a patient's quality of life. Traditional treatments such as corticosteroid injections, laser therapies, and regenerative medicine techniques, such as Platelet-Rich Plasma (PRP), have shown variable results. Hyaluronic acid-based products are known for their skin hydration and anti-aging properties. This study aimed to compare the efficacy, safety, and satisfaction rates of PRP, non-cross-linked hyaluronic acid, and their combination in treating burn scars, in conjunction with fractional CO2 laser treatment.

Materials and Methods
This was a double-blind, randomized controlled clinical trial conducted from 2022 to 2023 with 10 patients aged 25–55 years. All patients had burn scars of at least 6 months' duration, and the scars were treated with fractional CO2 laser followed by PRP, non-cross-linked hyaluronic acid, or a combination of both. The evaluation methods included the Vancouver Scar Scale (VSS), biometric assessments, and ultrasound measurements. Treatment efficacy was assessed at baseline, 1 month after the first session, and 3 months after the initial treatment.

Results
The combination of PRP and non-cross-linked hyaluronic acid exhibited the most significant improvements across multiple parameters, including the VSS, erythema index, and melanin index ($p<0.05$). PRP treatment also showed notable improvements, while non-cross-linked hyaluronic acid alone had moderate efficacy. Dermal thickness did not show significant improvement in any of the treatment groups ($p=0.07$). Satisfaction scores for both patients and physicians were highest in the PRP-non-cross-linked hyaluronic acid combination group, with 100% of patients rating their treatment response as "excellent."PRP combined with non-cross-linked hyaluronic acid was the most effective treatment for burn scars, significantly improving scar appearance and patient satisfaction compared to other treatments. The combination therapy also provided superior clinical outcomes, highlighting its potential as a promising treatment for burn scars. Future studies with larger sample sizes are recommended to confirm these findings.

Conclusions
PRP combined with non-cross-linked hyaluronic acid was the most effective treatment for burn scars, significantly improving scar appearance and patient satisfaction compared to other treatments. The combination therapy also provided superior clinical outcomes, highlighting its potential as a promising treatment for burn scars. Future studies with larger sample sizes are recommended to confirm these findings.

Abstract N°: ID-1425

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

The Efficacy, Satisfaction, and Safety of Carbon Dioxide (CO2) Fractional Laser in Combination with Pulsed Dye Laser (PDL) versus Each One Alone in the Treatment of Hypertrophic Burn Scars: A Single-Blinded Randomized Controlled Trial

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Hypertrophic and keloid scars, often resulting from burn injuries, can cause significant functional and aesthetic issues for patients. Laser therapies, including Pulsed Dye Laser (PDL) and Ablative Fractional CO2 Laser (AFCL), have shown effectiveness in improving scar characteristics. This study aims to compare the efficacy, satisfaction, and safety of PDL, AFCL, and their combination in treating hypertrophic burn scars.

Materials and Methods
This single-blinded randomized controlled trial was conducted on patients with hypertrophic or keloid burn scars. Patients were randomly assigned to receive either PDL, AFCL, or a combination of both. Treatment efficacy was evaluated based on the Vancouver Scar Scale (VSS), scar color, vascularity, height, pliability, and overall scar appearance. The follow-up period lasted 40 days post-treatment, and patient satisfaction was assessed through a standardized satisfaction scale.

Results
All three treatment modalities showed significant improvement in scar characteristics, including reduction in scar height, improved pliability, and enhanced vascularity. However, the combination therapy group (PDL + AFCL) showed the highest improvement, particularly in vascularity and pliability. While the combined therapy did not achieve statistically significant superiority over individual treatments, its clinical relevance was emphasized by the higher rate of improvement and patient satisfaction in the combined group. The effectiveness of treatments was more pronounced in immature scars compared to mature scars, with the combination therapy proving especially beneficial for immature hypertrophic scars.

Conclusions
Both PDL and AFCL are effective in treating hypertrophic burn scars, but their combination offers enhanced clinical results, particularly in terms of vascularity and pliability, and provides higher patient satisfaction. This combination treatment is particularly effective for immature scars, showing potential for improved therapeutic outcomes in burn scar management. Further studies with larger sample sizes and longer follow-ups are recommended to confirm the findings and refine treatment protocols.

Abstract N°: ID-1430

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Beyond Cosmetic Correction: Comparative Therapeutic Impact of Medium-Depth Chemical Peeling in Acanthosis Nigricans- A Randomised Controlled Evaluation of 50% Glycolic Acid Versus 20% Trichloroacetic Acid

Thayasre Babu*[1]

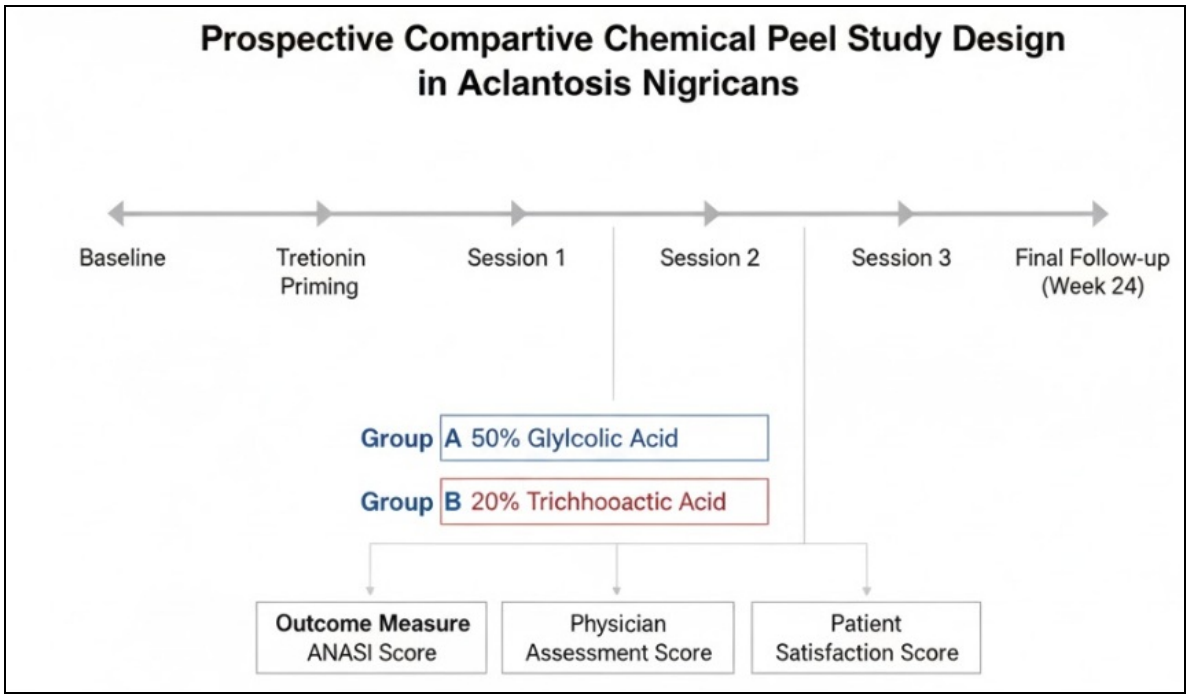
[1]Saveetha University, DEPARTMENT OF DERMATOLOGY,VENEREOLOGY,LEPROSY, Sriperumbudur, India

Introduction

Acanthosis nigricans (AN) is a common pigmentary dermatosis characterised by hyperpigmented, velvety plaques most frequently involving intertriginous sites such as the neck. It is strongly associated with insulin resistance and metabolic dysregulation, resulting in significant cosmetic distress and reduced quality of life. Chemical peeling has emerged as a cost-effective adjunctive therapeutic modality targeting epidermal hyperkeratosis and pigmentary alteration. However, comparative prospective data evaluating medium-depth peeling agents in AN remain limited. This study aimed to compare the efficacy, safety, and patient satisfaction between 50% glycolic acid (GA) and 20% trichloroacetic acid (TCA) in the treatment of neck acanthosis nigricans.

Materials and Methods

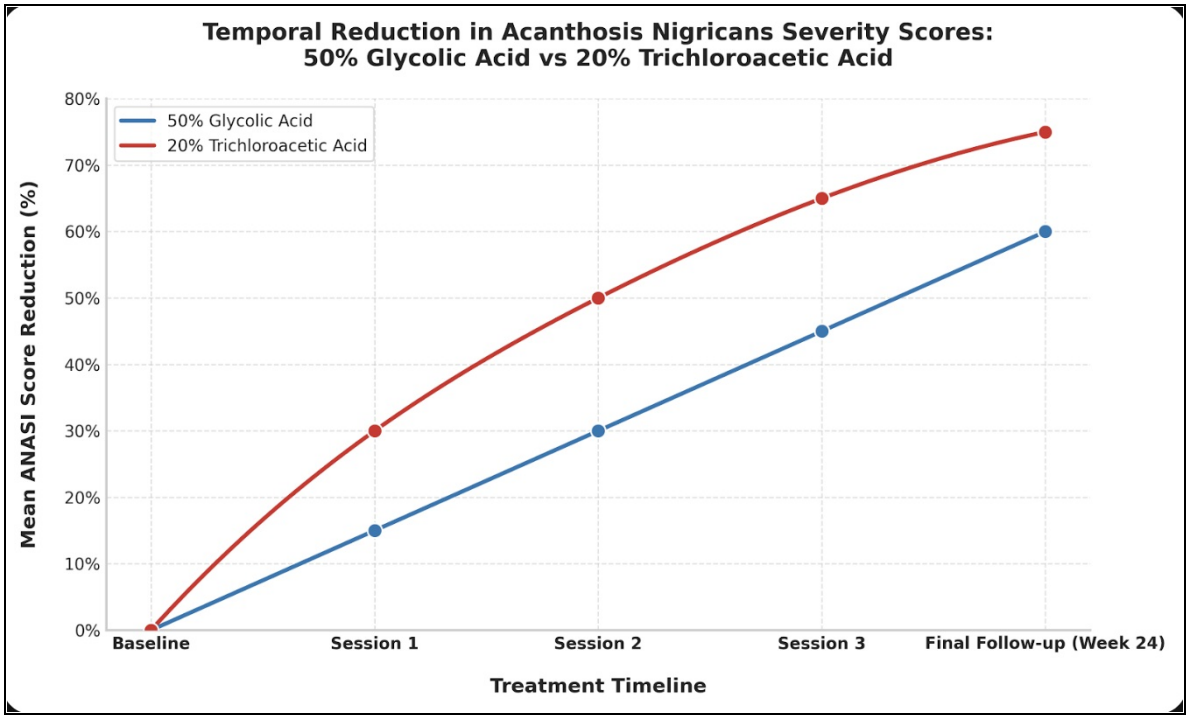
This prospective, randomised, comparative interventional study included 30 patients aged 25–45 years with clinically diagnosed acanthosis nigricans of the neck. Patients were randomised into two equal groups. Group A received 50% glycolic acid peel and Group B received 20% trichloroacetic acid peel. Peels were performed at 4-week intervals for three sessions. All participants were primed with topical 0.05% tretinoin for four weeks prior to initiation, which was discontinued one week before and after each peeling session. Clinical evaluation was performed using Acanthosis Nigricans Area and Severity Index (ANASI), Physician Assessment Score (PAS), and Patient Satisfaction Score (PSS). Adverse effects and tolerability were documented. Patients were followed for 12 weeks after the final peel session. Final data analysis was performed after completion of the last follow-up visit (Week 24 from baseline), ensuring assessment of sustained clinical response and delayed adverse effects.



Study Timeline and Outcome Assessment Framework for Comparative Chemical Peel Therapy in Acanthosis Nigricans

Results

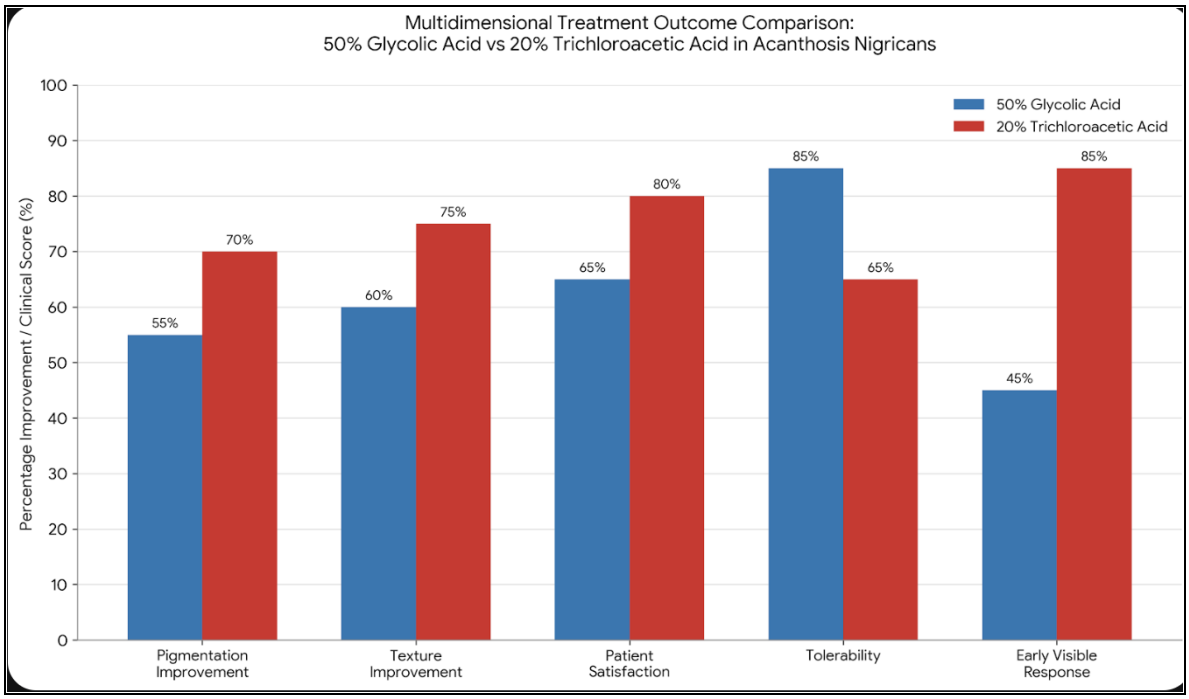
Both treatment groups demonstrated statistically significant improvement from baseline in pigmentation, texture, and thickness. The TCA group demonstrated earlier visible clinical improvement, with greater reduction in ANASI scores by Session 2 compared to the GA group. At final analysis, mean ANASI reduction was higher in the TCA group, correlating with higher PAS and patient satisfaction scores. GA demonstrated gradual but steady improvement with superior tolerability profile. Mild transient erythema, burning sensation, and post-procedure desquamation were noted in both groups, with no permanent adverse events. Patient-reported satisfaction was higher in the TCA group due to faster visible cosmetic response, while GA was preferred in patients prioritising tolerability. No treatment discontinuations occurred.



Comparative temporal reduction in ANASI scores showing faster early improvement with 20% TCA and gradual sustained improvement with 50% glycolic acid across treatment sessions and follow-up.

Conclusions

Both 50% glycolic acid and 20% trichloroacetic acid peels are effective and safe therapeutic options for acanthosis nigricans of the neck. However, 20% TCA demonstrates faster clinical response and higher early patient satisfaction, making it a strong option for patients seeking rapid visible improvement. Glycolic acid remains a well-tolerated alternative for gradual pigment reduction. These findings support incorporation of medium-depth chemical peeling as an accessible and effective adjunct in the management of acanthosis nigricans, particularly in cosmetically sensitive anatomical sites.



Comparative Multidimensional Clinical Outcomes of 50% Glycolic Acid versus 20% Trichloroacetic Acid in Acanthosis Nigric

Abstract N°: ID-1434

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Evaluation of the Efficacy, Safety, and Satisfaction Rates of Platelet-Rich Plasma, Non-Cross-Linked Hyaluronic Acid, and their Combination in Patients with Acne Scars Treated with Fractional CO2 Laser: A Randomized, Double-Blind, Split-Face Comparative Study

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Acne scars, especially atrophic scars, significantly affect the quality of life of patients. Various treatments have been proposed, including fractional CO2 laser, platelet-rich plasma (PRP), and hyaluronic acid injections. This study aims to compare the efficacy, safety, and patient satisfaction of PRP, non-cross-linked hyaluronic acid (HA), and their combination, in the treatment of acne scars treated with fractional CO2 laser.

Materials and Methods
A double-blind, randomized clinical trial was conducted with 15 patients (aged 18-65 years) with atrophic acne scars. Patients received either PRP alone, non-cross-linked HA alone, or a combination of both on one side of the face, with the opposite side receiving a placebo (normal saline). Treatments were performed in two sessions, and assessments were made at baseline, one month, and three months post-treatment using biometric and ultrasound measurements to evaluate the treatment's effectiveness.

Results
Biometric assessments showed no significant differences between the treatment groups in colorimetry, corneometry, and tewametry. However, the PRP group showed higher erythema and melanin indices compared to the combination group at the three-month evaluation ($p=0.03$). In terms of satisfaction, both patients and physicians rated the combination of PRP and HA as the most satisfactory treatment compared to the other groups ($p<0.001$).

Conclusions

The combination of PRP and non-cross-linked hyaluronic acid demonstrated significant improvement in patient and physician satisfaction and improved biometric outcomes in acne scar treatment when compared to individual treatments. Further studies with larger sample sizes are necessary to confirm these findings and refine treatment protocols.

Abstract N°: ID-1441

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Efficacy of Fractional CO2 Laser in Combination with Stromal Vascular Fraction (SVF) in the Treatment of Burn Scars: A Randomized Controlled Clinical Trial

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Burn scars are one of the most common types of skin scars, often leading to deformities, itching, hyperemia, and limited mobility, negatively impacting the quality of life. Current treatments include silicone gel, corticosteroid injections, and surgery; however, novel treatments are required for better results. This study aims to evaluate the efficacy of combining fractional CO2 laser treatment with stromal vascular fraction (SVF) injection in treating burn scars compared to the use of fractional CO2 laser alone.

Materials and Methods
This double-blind randomized clinical trial was conducted on ten patients with burn scars. Each patient had at least two burn scars, and one area received the CO2 laser alone while the other received CO2 laser with SVF injection. The treatment was performed in three sessions, spaced a month apart. The outcomes were measured using the Vancouver Scar Scale (VSS), biometric assessments (including cutometry and sonography), and patient and physician satisfaction ratings. Data were analyzed using SPSS, and a p-value of <0.05 was considered significant.

Results

The results indicated that both treatments (CO2 laser alone and CO2 laser combined with SVF) significantly improved burn scars. However, the combined treatment showed superior results. Significant improvements were noted in the VSS, epidermal thickness, skin density, and cutometry R7 scores in the SVF + CO2 laser group. Additionally, patient and physician satisfaction was higher in the group treated with SVF injection. The combination of SVF with CO2 laser provided better scar healing compared to CO2 laser alone.

Conclusions
The study confirms that combining fractional CO2 laser treatment with SVF injection significantly enhances the efficacy of burn scar treatment. This combined approach can be considered a more effective alternative to traditional treatments for burn scars. Further studies with larger sample sizes are recommended to validate these findings.

Abstract N°: ID-1534

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Durability over Clearance: High Density CO2 Laser as a Field Modifying Therapy for Actinic Keratoses

Kashika Sareen*[1], Lourdes Gizeer[2], Grace Xiong[3], Abdalaziz Almokhaizem[3], Rahul Shukla[3], Dusan Sajic[3, 4]

[1]University of British Columbia, Vancouver, Canada
[2]University College Dublin, Dublin, Ireland
[3]McMaster University, Department of Surgery, Hamilton, Canada
[4]deRMA Skin Institute, Guelph, Canada

Introduction

Actinic keratosis (AK) is a clinical manifestation of ultraviolet-induced field cancerization arising from clonally mutated keratinocytes and a senescent dermal microenvironment that promotes persistence and relapse. While established field-directed therapies, such as topical 5-fluorouracil (5-FU), photodynamic therapy (PDT), and low-density fractional CO_2 laser, achieve effective short-term clearance, long-term durability remains limited, often necessitating repeated treatment cycles. Energy-based ablative laser therapies provide a mechanistically distinct approach by delivering depth-dependent thermal and ablative injury capable of remodeling both epidermal and dermal compartments. High-density CO_2 laser, which delivers greater energy per unit area and achieves deeper fractional ablation, may therefore produce more durable biological modification of the actinic field.

Materials and Methods

We conducted a retrospective longitudinal analysis of real-world clinical data comparing high-density CO_2 laser, low-density CO_2 laser, 5-FU (Efudex), and PDT with methyl aminolevulinate (Metvix). Treatment episodes were analyzed independently, with outcomes assessed at 6 and 30 months post-treatment using complementary measures of field disease control: (1) absolute lesion burden, defined as the cumulative number of liquid nitrogen treated and biopsied lesions within standardized follow-up windows, and (2) responder-based outcomes defined by proportional reduction from baseline (≥40%, ≥75%, and ≥90%). Non-parametric statistical methods were used for between-modality comparisons, with effect sizes quantified using Cliff's delta and adjustment for multiple testing.

Results

At 6 months, all treatment modalities achieved clinically meaningful reductions in AK burden, with overlapping confidence intervals and no statistically significant between-group differences ($p = 0.51$), consistent with comparable short-term efficacy. By 30 months, however, a pronounced divergence in durability emerged ($p = 0.001$). High-density CO_2 laser maintained a large and sustained reduction in lesion burden (mean change −17.9 lesions; 95% CI −21.8 to −13.9), whereas low-density CO_2 laser showed attenuation of benefit with rebound toward baseline (mean +3.1; 95% CI −7.5 to 13.7). Efudex (−3.1; 95% CI −11.7 to 5.5) and PDT (−7.2; 95% CI −12.6 to −1.8) demonstrated intermediate effects but failed to maintain durable suppression of lesion burden. Planned pairwise comparisons confirmed significantly greater long-term lesion reduction with high-density CO_2 laser compared with low-density CO_2 laser ($p = 0.0014$; $\delta = -0.72$), Efudex ($p = 0.0013$; $\delta = -0.57$), and PDT ($p = 0.0023$; $\delta = -0.47$). Responder-based analyses reinforced these findings: while response rates were similar across modalities at early follow-up, high-density CO_2 laser uniquely sustained high ≥75% and ≥90% clearance rates at 30 months, whereas responder proportions declined substantially for all comparator therapies.

Conclusions

This delayed emergence of treatment separation suggests that the principal advantage of high-density CO_2 laser lies not in enhanced short-term clearance, but in durable field modification consistent with depth-dependent energy delivery, removal of senescent and mutation-rich niches, and restoration of a more regenerative dermal-epidermal microenvironment. These findings position high-density CO_2 laser as a field-modifying, biologically transformative intervention within energy-based medicine and support its use for durable long-term management of actinic keratosis and ultraviolet-damaged skin.

Abstract N°: ID-1592

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Ultrasound-Guided Median–Ulnar Block Strategy for Palmar Botulinum Toxin Pain Control: A Within-Patient Proof-of-Concept

Ahmet Tecik[1], İsmail Ünal*[1], Anıl Tuna[1], Nedim Uysal[1], Ender Sir[1], Aysenur Botsali[1]

[1]Gülhane Eğitim Ve Araştırma Hastanesi, Dermatovenereology, Keçiören, Türkiye

Introduction
Palmar botulinum toxin injections are effective for palmar hyperhidrosis but are often limited by substantial procedural pain. Although regional anesthesia is increasingly used, the optimal blockade strategy for reliable palm analgesia remains unclear. We aimed to evaluate a practical ultrasound-guided median–ulnar block approach and to compare two ulnar blockade levels within the same patient.

Materials and Methods
A 19-year-old woman with palmar hyperhidrosis underwent first-session bilateral palmar botulinum toxin treatment. Before injections, ultrasound-guided median and ulnar nerve blocks were performed using local anesthetic. On the right side, the ulnar block was placed at a more distal level, while the median block was performed at a standard level. On the left side, both blocks were placed more proximally, with the ulnar block approximately 1–2 cm distal to the antecubital fossa. Pain was assessed using a numerical rating scale (NRS; 0–10). The patient rated pain separately for median- and ulnar-innervated palmar territories during injections and also rated needle pain during nerve block placement.

Results
During palmar botulinum toxin injections, the right (distal ulnar block) ulnar territory pain score was 8/10, while the right median territory pain was 2/10. On the left (proximal ulnar block), ulnar territory pain was 0/10 and median territory pain was 3/10. Needle pain during block placement was 7/10. This within-patient comparison suggests that a more proximal ulnar block may provide more complete analgesic coverage of ulnar-innervated palmar regions than a distal approach.

Conclusions
Ultrasound-guided median-ulnar blockade can substantially improve tolerability of palmar botulinum toxin injections. In this proof-of-concept case, proximal ulnar blockade (near the antecubital level) showed better analgesic performance than distal ulnar blockade for palmar injection pain. Interdisciplinary dermatology–pain medicine collaboration may improve procedural comfort and feasibility in painful dermatologic interventions.

Abstract N°: ID-1609

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

Regenerative Medicine for Atrophic Scars: A Systematic Review of Extracellular Vesicles, Conditioned Media, Stromal Vascular Fraction, and Mesenchymal Stem Cells

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction

Atrophic scars, caused by insufficient collagen deposition and ECM production during wound healing, significantly affect patients' quality of life. Conventional treatments often fail to achieve complete skin regeneration, prompting interest in regenerative medicine. This review evaluates the efficacy and safety of emerging regenerative therapies, including extracellular vesicles, conditioned media, stromal vascular fraction, and mesenchymal stem cells, in improving atrophic scars.

Materials and Methods

A systematic search was conducted on PubMed, Scopus, and Web of Science up to November 23, 2024. Relevant keywords, including "conditioned media," "Secretome," "extracellular vesicles," "atrophic scar," "rejuvenation," and "lightening," were used to identify studies. Articles meeting inclusion criteria underwent data extraction focusing on study design, population characteristics (mean and range), intervention details (including duration), comparison groups, clinical outcomes with statistical results, and reported adverse effects, ensuring comprehensive analysis and adherence to PRISMA guidelines.

Results

Out of 186 initially identified articles, 11 studies involving 177 participants (89 females, 59 males, and 29 undefined, mean age 31.52 years) were reviewed, focusing on treatments for acne scars (82%) and striae distensae (18%). These studies evaluated stromal vascular fraction (SVF), cell-conditioned medium (CM), mesenchymal stem cells (MSC), and extracellular vesicles (EV). Significant improvements were observed with various treatments, including a 32.5% decrease in ECCA scores with adipose tissue stem cell exosome (ASCE) treatment, and greater acne scar improvements with Fractional CO_2 Laser combined with platelet-rich plasma compared to stem cell-conditioned medium (SC-CM). Other promising results included enhanced skin elasticity and collagen density with ADSC-CM and a 28.5% reduction in scar volume with HSCM combined with FCL. SVF treatments, including gel and Subcision, demonstrated notable improvements in striae distensae and acne scars, with significant reductions in scar volume, area, and depth. Intradermal bone marrow stem cell injections also led to significant acne scar improvements, highlighting the potential of stem cell-based and exosome treatments for skin regeneration.

Conclusions

The evaluated studies indicate promising efficacy for regenerative treatments such as SVF, CM, EV, and MSC in improving acne scars and striae distensae. Significant enhancements in scar appearance, skin hydration, and patient satisfaction were observed across various combination therapies compared to controls. While these advancements offer new hope for patients with

moderate to severe skin conditions, further research is needed to establish standardized protocols and long-term efficacy. The minimal reported adverse effects highlight the safety of these regenerative interventions, suggesting that their integration into dermatological practice could improve treatment outcomes for skin texture and appearance.

Abstract N°: ID-1618

Topic: Corrective, aesthetic and cosmetic dermatology, lasers

A systematic review of the safety and effectiveness of laser and light therapies for the treatment of pigmented purpuric dermatoses

Alireza Jafarzadeh*[1]

[1]Iran University of Medical Sciences, Tehran, Iran

Introduction
Pigmented purpuric dermatoses (PPD) represent a group of chronic skin disorders characterized by small hemorrhagic spots and changes in pigmentation. These conditions often resist standard therapies such as topical corticosteroids and systemic drugs. This systematic review evaluates the safety and effectiveness of light and laser treatments for patients with various types of pigmented purpuric dermatoses.

Materials and Methods
We searched the PubMed, Scopus, and Web of Science databases on 18 March 2025, following PRISMA guidelines. Studies that utilized light therapy and laser therapy for different types of pigmented purpuric dermatoses were included. Data were analyzed based on the treatment modality, and study quality was evaluated using appropriate assessment tools.

Results
Our initial search yielded 98 studies, of which 30 met our inclusion criteria, encompassing 98 cases. Various treatments were evaluated, including NB-UVB, PUVA, IPL, PDT, and lasers such as PDL, fractional (non-ablative 1540 nm erbium glass laser), and excimer lasers. NB-UVB was the most commonly used treatment and showed consistent efficacy in improving pigmentation and pruritus across different PPD subgroups. PUVA also demonstrated significant clinical benefits. Among the laser treatments, PDL was particularly effective for targeting vascular lesions, while fractional and excimer lasers achieved good lesion clearance with minimal side effects.

Conclusions
Light and laser treatments have demonstrated effective results in treating various types of pigmented purpuric dermatoses, especially in challenging cases. NB-UVB, PUVA, PDL, fractional laser, and excimer laser have shown satisfactory outcomes with minimal side effects. Despite these promising results, larger clinical trials are necessary to confirm the efficacy and safety of these treatments. The findings of this study can guide future research on light- and laser-based therapies for pigmented purpuric dermatoses.