

BIODERMA

CONGRESS REPORTS

Bioderma Congress Reports IMCAS 2024

Reports written by Dr. Kim Blakely (Dermatologist, Canada) and Dr. Marta García-Legaz (Dermatologist, Spain)

MELASMA

Speakers: Pr. Passeron (France), Pr. Gonzalez Ardila (Colombia), Dr. Kaniowski (Poland), Pr. Benmously Mlika (Tunisia), Dr. Lim (Malaysia), Dr. Pillai (India), Dr. Perez Willis (Peru), Dr. Y Yoo (United States), Dr. Khatri (United States), Dr. Nishikawa (Japan), Dr. Houshmand (United States).

Report written by Dr. Kim Blakely (Canada)

This session put a lot of focus on the patho-mechanisms of melasma and emphasized the importance of multiple cell types in the development of melasma. Several cell types in addition to melanocytes were highlighted including mast cells, endothelial cells, fibroblasts and sebocytes. Novel patho-mechanisms discussed included increased solar elastosis, basement membrane disruption as well as increased dermal blood vessels, infiltration of mast cells and subclinical inflammation. In essence, the pigmentation is a protection mechanism to the damage below and only one part of the larger picture.

The vascularization that occurs in melasma was a major emphasis of these talks. This is a relatively new paradigm and is shifting the way we think about melasma treatment.

In terms of photoprotection, general advice included seeking shade, using hats, as well as using sun protective clothing and glasses. With respect to sunscreens, the emphasis was on protection against long-wave UVA (UVA1) as well as visible light. It was also emphasized that UVA (unlike UVB) can penetrate windows, etc and thus application even when remaining indoors can be vital to preventing and treating melasma.

The concerns are: blue light from screens was discussed. As per Dr. Thierry Passeron, there is minimal impact on melasma from screens as the results depend on the intensity of the light (i.e., intensity from a screen is minimal as compared to the sun).

In terms of management, the speakers discussed the critical importance of photoprotection, with sunscreens covering UVB, UVA and visible light. In terms of treatment, it was suggested that triple combination therapy remains the gold standard for management (although there was some disagreement on this, and hydroquinone is a banned substance in the EU). As triple combination therapy can lead to irritation/desquamation/allergy and long-term corticosteroid use can worsen the

vascular component of melasma discussed above, other topicals were also mentioned including azelaic acid, kojic acid, niacinamide, salicylic acid, arbutin, and ascorbic acid.

Other treatments discussed include the use of PDL and IPL to target the vascular component of melasma. This has been shown to work well in lighter skin phototypes but runs the risk of post-inflammatory hyperpigmentation in skin types III-VI. Other lasers include the thulium laser and the picosecond laser.

In terms of oral treatment, oral *tranexamic acid* (thought to act on the vascularization aspect of melasma) was discussed. Ideal dosing was controversial, but the literature supports the use of 250 mg 2-3x per day x 3 months (often started in the spring/April to prevent relapse). This is an off-label use and contraindicated in patients at risk for thromboembolic events. Topical tranexamic acid does not appear to be superior to placebo when evaluated in multiple uncontrolled studies. The thought is that it cannot penetrate and reach the dermis to have meaningful effects on the dermal vasculature.

Dr. Thierry Passeron discussed a new triple combination cream that studies have shown to be superior to the original that was published in 1975. This was an isobutylamido-thiazolyl-resorcinol 0.1% + retinoic acid 0.1% and dexamethasone 0.1% combination (though ultimately suggested to reduce the retinoic acid concentration to 0.05% to improve tolerability). He advised to use this combination at intervals for 3 months on, 3 months off.

As mentioned above, the pigment is in response to skin damage. Thus, if one only targets the pigmentation, many patients (up to 80%) will often relapse after a seemingly successful treatment. Patient education is important, and patients should be educated that melasma is a chronic condition like many things in dermatology and must be maintained!

In conclusion, many speakers emphasized the importance of sun protection. They urged companies to develop chemical compounds with better protection to visible light induced pigmentation as well as more colour tones for tinted sunscreens to better serve the spectrum of patient skin phototypes.

WOUND HEALING

Speakers: Pr. Turkevych (Ukraine), Dr. Laubach (France), Dr. Casoli (France), Dr. Puyat (Philippines).

Report written by Dr. Kim Blakely (Canada)

Emphasis on time as the best treatment for scars. Everything else we do is just help. This was a mention that the microbiome of the skin influences how scars healed, but details were not discussed.

On speaker reviewed their ideal treatments for scars including polynucleotides (reduces contractures, prepares the skin for treatment with lasers), exosomes, IPL, yellow lasers, CO₂, picosecond lasers, erbium YAG and RF microneedling.

Another speaker discussed their own personal experience testing silicone gel for wound healing immediately applied after fractional ablative photothermolysis. They commented that in their hands, the application of silicone immediately applied after fractional ablative photothermolysis significantly reduced the inflammatory response post fractional ablative laser. This was evaluated using a device that measures facial erythema as well as histological evaluations (photo).

Another speaker discussed the use of a silicone + collagen synthetic polymer to aid wound healing. In his experience, this technology works very well as it can help to regenerate the collagen layer in a non-healing wound. Once that process is complete, you remove the silicone layer and place your skin graft.

Lastly, the final speaker discussed keloids and hypertrophic scars which result due to a combination of genetics, systemic conditions, and local wound conditions. In terms of the pathophysiology, platelet dysregulation was discussed as one of the drivers of scar formation: platelet dysregulation is responsible for the release and activation of potent cytokines which serve as chemotactic agents for macrophages, neutrophils, and fibroblasts. With keloids, excessive scar formation results from dysfunction of the underlying regulatory mechanisms of scar formation, leading to persistent inflammation, excessive collagen production and deficient matrix degradation and remodelling.

Current treatments for keloids and hypertrophic scars include adhesive tapes, silicone-based products, pressure therapy, surgical excision, cryotherapy, radiation, ILK, 5FU, imiquimod, and lasers. Some emerging treatments include the use of interferon, bleomycin, mitomycin C, botulinum toxin A, tamoxifen, growth factors, ACE inhibitors, calcium channel blockers, and stem cell therapy.

SUN SHIELD: THE VITAL IMPORTANCE OF PHOTOPROTECTION

Speakers: Dr. Bucay (United States), Dr. K Farris (United States), Dr. Bernerd (France), Mr Yamaki (Japan).

Report written by Dr. Kim Blakely (Canada)

Dr. Vivian Bucay reviewed the importance of sunscreens as a to prevent skin cancer, delay or prevent the signs of photodamage, and delay or prevent the signs of aging. She touches on the idea that long wave UVA (UVA1) is a major focus in sunscreens at the moment.

She briefly touched on several sunscreen trends:

- Adding additional value to sunscreens with the addition of antioxidants, growth factors and DNA repair enzymes,
- Superfluids as a vehicle for actives,
- The importance of complete photoprotection (UVB, UVA, visible light, IR),
- Customization for skin of colour.

She discussed messaging to patients and emphasized daily use of higher SPF sunscreens for increased protection against cumulative UV radiation. In terms of messaging, instead of saying that an SPF 30 blocks 96.5% of UVB, word it that an SPF 30 still allows 3.3% of UVB radiation to be transmitted to your skin.

She also touched on the importance of photoprotection according to skin phototype and underlying dermatoses. It was emphasized that all skin phototypes will benefit from daily sun protection, but that the type of photoprotection should be adapted to skin phototype, but also latitude and altitude. Tinted sunscreens containing pigments, particularly iron oxide, have a greater photoprotection against visible (blue) light and are recommended for the prevention and treatment of disorders of hyperpigmentation.

- For lighter skin types, SPF 50+ and an SPF/UVA-PF ratio of <3 is recommended.
- For darker skin types, SPF 30+ and an SPF/UVA-PF ratio of <1.5 is recommended.

Dr. Patricia Farris discussed some of the data on the safety of sunscreens. She reviewed that in the US, unlike many other countries, UV filters are considered OTC drugs because they affect the structure and function of the skin. As such, they are under the regulation of the FDA.

In terms of systemic absorption, studies have shown that several organic filters (e.g., avobenzene, oxybenzone, octocrylene, and ecamsule) resulted in plasma concentration levels that exceeded the threshold established by the FDA for potentially waiving non-clinical toxicology studies. As such, currently the US FDA is demanding more testing on the UV filters available given there are concerns around systemic absorption but did state "these results do not indicate that individuals should refrain from the use of sunscreens". As well, real world usage has not identified health risks of using organic filters in commercially available sunscreen.

In terms of environmental safety, data are still evolving. In terms of exposure, sunscreens make their way into our environment through usage as well as manufacturing. As waste treatment does not effectively remove organic filters, they are easily expelled into freshwater streams and rivers. However,

whether this is having a negative effect on the coral reefs is more complex. Although in vitro studies have shown that oxybenzone can bleach and kill coral, these studies used concentrations 1000x higher than found in the natural environment. Despite this, organic UV filters have been banned in several locations IBNLT Hawaii, US Virgin Islands, Key West, and Aruba.

WHAT'S NEW IN SKIN AGING

Speakers: Dr. Haddad (Brazil), Pr. Firooz (Iran), Pr. D Alessio (France), Dr Banila (United Kingdom), Dr Bianchini (United States)

Report written by Dr. Kim Blakely (Canada)

There was a focus on dermatogenetics, and the movement towards understanding the genes that control aging, and how these can be influenced. The speaker discussed that this is being studied using a biological age test (saliva test) as well as by studying people that live in the world's "Blue Zones": the areas where people live the longest. It has been determined that it not only depends on an individual's genetics, but also their lifestyle. Our cells need to eat, drink and breath. There was also an emphasis on mitochondrial health and a reduction of glycation. Institute Esthederm Age Proteome was displayed on the screen as an example of a product that can help to achieve this:

ACTIVE ACNE

Speakers: Dr. Rocha (Brazil), Pr. Dreno (France), Dr. Rashed (Egypt), Dr. Massa (Portugal), Dr. De Felipe Y Garate (Spain), Dr. Seoudy (Egtppt), Dr. Lain (United States), Pr. J Goldberg (United States), Dr. Shelkovitz (Israel).

Report written by Dr. Kim Blakely (Canada)

Dr. Marco Alexandre Rocha discussed the microbiome in the development of acne and the use of antibiotics. There are now known to be over 100 types of *C. acnes* bacterial strains.

Dysbiosis of the gut can lead to inflammation and can lead to the increased release of substance P, increased release of interleukin 1 alpha, and the decreased production and release of free radicals. Antibiotics can worsen this dysbiosis and worsen acne. He presented one small study which showed improved acne clearance when patients were using a *adapalene/BPO* topical in combination with oral probiotics versus the topical alone. This obviously needs a lot more research before broad recommendations can be made.

Pr. Brigitte Dreno discussed the use of topical retinoids and acne scarring. She began by discussing the crucial role of sebaceous glands in the duration and the severity of inflammation around the pilosebaceous unit. She also discussed the interactions between the microbiome and scar formation.

In terms of topical treatment of acne scarring, there is minimal evidence to support the use of *tretinoin* alone for acne scarring. Only a single patient report of benefit in the literature. On the other hand, *adapalene* daily application resulted in improvement of skin texture and atrophic scars in 50% and 80% of patients, respectively. *Tazarotene* has also been shown to be effective for acne scarring over a 4-month period. Fixed combinations, specifically adapalene 0.1%/BPO 2.5% has shown superior results in split-faced studies. This was also shown with the higher percentage fixed combination: *adapalene* 0.3%/BPO 2.5%. And lastly, *triferotene*, a 4th generation retinoid that is specific for the retinoic acid receptor gamma, was also evaluated using split-face studies. *Triferotene* was statistically significant at improving scarring. Most studies were evaluated at 24 weeks (6 months).

Dr. Antonio Massa discussed the rising prevalence of adult female acne. This was divided into three categories:

- Persistent acne (a continuation of the disease from adolescence),
- Relapsing acne,
- Late onset.

There was a lot of discussion re: counselling patients that this can be a chronic, relapsing skin disease and is often challenging to treat. Stress also aggravates acne, and these feed each other. Skin picking and excoriations can also worsen acne as it is an inflammatory disease.

Throughout all the talks, there was a major discussion about moving away from antibiotic use due to increased risks for inflammatory diseases like Crohn's disease or colitis, induction of resistance to antibiotics, increased risks for cancer, and the recurrence of acne after finishing treatment.

Drs. Edward Lain and David Goldberg discussed the use of energy-based devices for the treatment of acne. This was mainly focused on the 1726 nm laser devices which are newly available to treat acne. This is a very specific wavelength that has a 2:1 absorption of sebum over water and represents the best wavelength to selectively target this gland. These devices can also be combined with gold-plated microparticles to improve targeting to the sebaceous glands. Monotherapy results at 3, 6 and 12 months were reported: 80%, 87% and 92% saw inflammatory lesion count improvement of 50%. Was shown you could use in every acne severity and skin type. This can also be used to treat sebaceous hyperplasia and rosacea (when combined with a vascular laser).

Finally, Dr. Tzachi Shelkovitz spoke about the risks of skin treatments while patients are using *isotretinoin*. In summary, several consensus papers have concluded that there is insufficient evidence to justify delaying treatment with superficial chemical peels, non-ablative lasers and non-ablative fractional devices for patients currently on or recently exposed to isotretinoin.

Finally, and important comment was made by one of the speakers: if you've successfully treated a patient's acne, and all they have left is post-inflammatory erythema, you're not done! This is what causes much of the scarring, so you need to continue to treat. And it was again expressed that the most evidence for scar prevention/treatment from a topical agent is likely *triferotene*.

NEXT GEN – CLINICAL DERMATOLOGY

Speakers: Dr. Damiani (Italy), Dr. Wolkerstorfer (Netherlands), Pr. Feldmeyer (Switzerland), Pr. Richard (France).

Report written by Dr. Kim Blakely (Canada)

The first talk was on nail psoriasis and how to manage it in 2024:

- Topical corticosteroids, retinoids or *cyclosporin*
- Intralesional corticosteroids, *MTX*, *cyclosporin*
- New innovative devices include medicated patches with modified release of drugs (not currently on market)
- Topical *tofacitinib*: OD x 16 weeks may be emerging as a new treatment.

The second talk was on hypo and hyperpigmentation and whether to laser:

- Café au lait: 1/3 will get a good result, 1/3 with okay response, and 1/3 with no response.
- Nevus spilus: same as above.
- Nevus of Ota: very good response; good duration: Q switch ruby alexandrite or Nd:YAG
- Hori's nevus as above.
- Melasma: controversial, can be responsive but can also worsen it or cause post-inflammatory hyperpigmentation.

The third talk was on oral mucosal diseases, and what you need to know: this was a brief quiz on several diseases that can have oral mucosal lesions including lichen planus, syphilis, pemphigus, mucous membrane pemphigoid, lupus, white sponge nevus, and HIV.

The final talk was on a differential diagnosis of red faces: a combination of facial erythema and flushing (episodic or constant), although the talk mostly focused on the treatments for rosacea. She stated the best evidence was for topical azelaic acid, topical *ivermectin*, *brimonidine*, *doxycycline* and *isotretinoin*. She emphasized the importance of sunscreen. Avoidance of steroids.

COSMECEUTICALS AND NUTRACEUTICALS

Speakers: Dr. Suwanchinda (Thailand), Dr. Castilla (United States), Dr. Goldberg (Canada), Dr. Marchal (Belgium), Dr. Damree (United Kingdom), Dr. Rossi (Italy), Dr. Gousopoulos (Switzerland), Dr. Polena (France), Dr. Gieracz Majchrowska (Poland), Dr. Kerob (France).

Report written by Dr. Kim Blakely (Canada)

Dr. Atchima Suwanchinda discussed the effects of hemp seed extract in cosmetic dermatology. Hemp seed extract contains high concentrations of cannabinoids, terpenes, flavonoids, carotenoids, and phytosterols. These agents have been shown to improve the skin barrier function, relieve itch and reduce inflammation.

Dr. Carmen Castilla discussed supplements in dermatology, mainly in the context of acne.

- High dose vitamin A (up to 300,000 IU daily): all trials have shown benefit, though facial > truncal, though side effect profile is the same as with *isotretinoin* (including possible teratogenic effects)
- Vitamin B5 (Pantothenic acid): this vitamin gets converted to CoA and can help to regulate epidermal barrier function. One small 12-week RCT that showed benefit for acne.
- Vitamin D: patients with acne are more likely to be vitamin D deficient; two RCTs show mild benefit.
- Green tea: one RCT over 4 weeks did see a decrease in inflammatory lesions, but otherwise did not decrease total lesions counts or disability scores.
- Zinc: likely the most studied; known to decrease inflammation, decrease sebum production, and known to have antimicrobial properties.
 - Recommended daily doses vary:
 - Males: 11 mg,
 - Non-pregnant females: 8 mg,
 - Pregnant females: 11 mg,
 - Lactating females: 12 mg,
 - 15 RCTs: high dose is better than low dose; but high doses can lead to copper deficiency as well as side effects: nausea, diarrhea, abdominal pain

Dr. Shameema Damree discussed the role of exosomes in skincare. Exosomes can be derived from several sources and are considered to be regenerative, anti-inflammatory and immune modulatory when applied to the skin and hair.

- There are different sources from which we can derive exosomes: human derived stem cells, plant derived stem cells, lactobacillus-derived, or milk derived exosomes.
- Stem cell exosomes are able to be absorbed through the skin because they are <500 daltons, lipophilic, and is a nano-particle.
- Preliminary studies show promising results, but more studies are required.

Dr. Helena Polena discussed a new photoprotective repairing cream. I found this talk a little confusing and it jumped right into data on wound repair, moisturization, and cutaneous microbiome diversity, but didn't start with the basics on the "photoprotective properties" that is in the title or what the intended purpose of the cream was. Once the final data was presented on the non-ablative resurfaced skin it became slightly clearer.

Finally, Dr. Katarzyna Gieracz-Majchrowska discussed rejuvenation at the mitochondrial level. Mitochondria play a large role in rejuvenation: they play a role in programmed cell death as well as reducing oxidative stress. Molecules known as mitoceutics, specifically glutathione, can support mitochondrial functions. They discussed the role of NAC in increasing glutathione levels in the body. They also discussed the role of nicotinamide adenine dinucleotide (NMN) in supporting mitochondrial function and anti-aging. She was cut off for time and did not finish this presentation, not cannot comment on the quality of the data supporting this.

NEXT-GENERATION FILLERS AND TOXINS

Speakers: Dr Stefania Guida (Milan, Italy), Dr Rami Abadi (Dubai, UAE), Dr Sabrina Shah Desai (London, UK) and Dr Oman Haroon (Zurich, Switzerland).

Report written by Dr. Marta García-Legaz (Murcia, Spain)

Dr Stefania Guida (Milan, Italy) - Cutaneous ageing and skin quality

Ninety-six percent of people surveyed admit to having a problem with or being concerned about the appearance of their face. While it is true that ageing is part of life (chrono-ageing), many factors such as sun exposure (photo-ageing) also play a role.

There are two types of cutaneous **ageing**:

- **Atrophic** - telangiectasias, dull complexion, seborrhoeic keratosis, increased risk of cancer;
- **Hypertrophic** - wrinkles, solar elastosis.

To assess skin quality: we examine various factors such as elasticity, pigmentation, wrinkles, erythema, etc., and we establish a classification with regard to firmness, surface, tone and radiance.

1. Skin firmness should be measured:

- **Elasticity (snap test) - fillers, biostimulators;**
- **Tension (skin fold test, cutometer) - fillers, biostimulators;**
- **Hydration (corneometer) - HA.**

It is important to palpate our patients' skin and improve it without transforming it. Dr Guida makes extensive use of calcium hydroxyapatite. Biostimulation increases the amount of collagen and elastin in the skin compared with hyaluronic acid.

That being said, hyaluronic acid also stimulates collagen (as supported by articles). Calcium hydroxyapatite and HA can be used not only on the face, but also on the hands, décolleté, neck, etc.

2. Skin surface uniformity

- Pores, acne scars: VISIA,
- Blemishes, hair: VISIA,
- Wrinkles, clarity: VISIA, photographs.

3. Complexion evenness

4. Skin radiance:

- How can we measure it? This is difficult. Mexameter (clinical scales).
- How should it be treated? Calcium hydroxyapatite, HA, Botox

Conclusion: cutaneous ageing and skin quality are related. There are various methods for assessing skin quality. This quality can be improved with injectable products.

We should always start by evaluating the patient's motivations, their idea of treatment, and their desire for improvement. We should then provide them with information.

We should always evaluate the patient's medical history, including any psychological history (this is very important in aesthetic medicine), and we should explain what we are going to do. It is essential to manage expectations properly, and then draw up a treatment and pre-treatment plan (preparing the patient). It is necessary to evaluate and study what the patient is looking for: beautification, improvement, correction, transformation, or positive ageing. **This doctor follows the MD Codes of Mauricio de Maio (nomenclature).**

Step 1: for full-face treatment, always start with the foundations (support).

- He first injects 3 boluses of 0.1 ml into **Ck1** (lateral cheek) using a needle to support the middle third.
- He then moves to the **Ck4** area using a cannula (below the previous point).
- He treats the **Ck2** area (middle cheek) with a 0.5 ml cannula.

Step 2: contour creation

- **Temporal** using a bone needle (temporal fossa), 'gunshot' technique 1 cm from the temporal crest and 1 cm from the eyebrow (risk point, aspirate).
- **Chin** as well: treat men and women differently to avoid giving women an overly masculine appearance. Inject at a central point in women (C5 only in men).
- **Jaw**: points Jw1 (deep bolus using a bone needle, 0.5 ml), Jw2 with a cannula, Jw3 with a cannula (risk at the facial artery; 0.5 ml subcutaneously), and lastly Jw4 and Jw5.

Step 3: refine.

- **Forehead, dark circles** (very deep), **glabella** (stay on the surface), **nasolabial fold** (favour cannulas).
- **Lips**: he makes points on the lower lip and works more on the contour of the upper lip (contouring). If more volume is desired, use the column technique from the same point (Russian technique).

Conclusion...

- Comply with standard guidelines and practices.
- Be sure to manage patient expectations.
- Refer to the MD Codes, always using your best judgement.
- Apply the technique that best suits us and our patient.
- The most important thing: safety!!!

Dr Sabrina Shah Desai (London, UK) - Periorbital rejuvenation

Dark circles appear from an early age, depending on ethnic origin and history. Some children look sad and tired because of their dark circles.

Dark circles are concavities, due to a reduction in overall volume, with orbital elongation. Initially, there is a concavity, which potentially becomes a convexity if there is puffiness (an important genetic component). Never inject into areas of puffiness: treatment is always surgical. Dark circles with furrows: there is loss of volume.

Grade I, Grade II, Grade III (inject first into the cheekbone, then under the eye).

It is possible to improve skin quality: with polynucleotides and cocktails.

Patients may present with a pre-septal trough (hollow dark circles), but there may also be loss of volume in the area of suborbital fat (the treatment is different).

If there is puffiness, remember that treatment is surgical. In the event of oedema or malar festoons, do not perform injections.

Patients may also have hyperpigmented dark circles; this is heavily influenced by ethnic origin (Asian/Hispanic patients). Other possible causes: post-inflammatory hyperpigmentation, allergic dermatitis, contact dermatitis.

Fillers: never completely correct dark circles with HA, to avoid problems. Always under-correct with HA fillers and go very **deep** to avoid complications. It is possible to use a cannula or needle (cannulas cause more oedema, but are safer; needles seem easier to use, but this is very personal. However, they cause more bruising).

Ideal patient for an HA filler: with a hollow, tight tissue and thick skin.

Patient not compatible with HA fillers: sagging tissue, large areas of puffiness, malar bags, thin skin, unrealistic expectations.

Periocular rejuvenation aimed at improving skin thickness, elasticity, texture and colour can be performed using polynucleotides, PRP, mesotherapy, laser therapy, radiofrequency or microneedling, but that's not all!

Polynucleotides improve fine lines in this area, as well as skin texture and quality; they also partially improve volume loss. They are injected much more superficially than HA, using a needle or cannula.

Dr Oman Haroon (Zurich, Switzerland) - Skin rejuvenation: a bridge between aesthetic dermatology and plastic surgery

Dr Haroon stressed the importance of always combining surgical techniques with aesthetic dermatological techniques to achieve the best results.

Skin rejuvenation should also be integrated into any surgical approach to the face, for example using RF microneedling, skin boosters, collagen stimulators, exosomes, PRP, or CO2 lasers.

It is important to recognise which patients require surgery. Distinguish between patients who will obtain results with aesthetic dermatology, volume work and improvement of skin quality (generally younger patients), and those for whom surgery (facelift) is more suitable, in combination with biostimulators, volumisers and improvement of skin quality (generally older patients with sagging skin), always as part of a comprehensive management approach.

Examples: at subcutaneous level, Dr Haroon uses collagen biostimulators and skin boosters.

Subcutaneously and below the SMAS: collagen biostimulators.

For fillers, he uses a technique that consists of first treating laterally with firming collagen stimulators: start in the temporal area, but more laterally towards the hair (do not use a bolus to avoid creating alopecia in this area); move on to the malar area, then finish at the jawline to simulate the lifting effect associated with fillers. The area around the chin is also important.

NEXT GENERATION - TOP PRIZES IN DERMATOLOGY

Speakers: Dr Rawaa Almukhtar (Detroit, US)

Report written by Dr. Marta García-Legaz (Murcia, Spain)

Combining IPL and non-ablative laser for facial rejuvenation

The signs of ageing include wrinkles, hyperpigmentation, and telangiectasias. If we improve all the above, is treatment a success? To find out, IPL treatment (redness and pigmentation) and non-ablative lasers (fine lines) have been evaluated. IPL can create oedema and increase the water chromophore before the non-ablative laser. That is why a study combining IPL and a 1440 nm diode (non-ablative fractional) laser for facial rejuvenation was carried out on 40 patients and the results were evaluated.

The patients were divided into two groups: 1) 20 patients with IPL on one half of the face and IPL + non-ablative fractional laser on the other half of the face; and 2) 20 patients with non-ablative fractional laser on one half of the face and NAFL + IPL on the other half of the face.

- Results in terms of wrinkles: improvement was greater with non-ablative fractional laser alone or in combination with IPL.
- Results in terms of pigmentation: better results with IPL used alone or in combination.
- Results in terms of telangiectasias: better results when the two treatments were combined.
- Safety: adverse effects - erythema, oedema, pigmentation, haematoma.
- Satisfaction was higher in the group combining the two treatments.
- Conclusion: the combination of **IPL and a 1440 nm non-ablative fractional diode laser** is safe, as it causes only mild adverse effects (oedema, erythema). There is virtually no recovery time. This combination is effective against wrinkles, pigmentation and telangiectasias. Patient satisfaction is also high.

ACNE SCARS

Speakers : Dr Ofir Artzi (Tel Aviv, Israel), Prof. Merete Haedersdal, Dr Anjali Mahto (London, UK), Prof. Carlos Gustavo Wambier (South Kingston, USA), Dr Ray Jalian (Los Angeles, USA), Dr Irina Poleva (Rome, Italy), Dr Ofir Artzi (Tel Aviv, Israel), Dr Cyril Maire (Arras, France), Dr Brunilda Bardhi (Tirana, Albania), Dr Christine Diericks (Luxembourg, Luxembourg), Dr Jong Seo Kim (Gangnam, South Korea), Dr Alvaro Andres Luque Acevedo (Bogota, Colombia), Dr Jill S. Waibel (Miami, USA), Dr Oksana Blyshchuk (Zhytomyr, Ukraine), Dr Rashmi Shetty (Mumbai, India), Dr Victor Gabriel Clatici (Bucharest, Romania) and Dr Iñigo De Felipe y Garate (Barcelona, Spain)

Reports written by Marta García-Legaz Martínez (Murcia, Spain)

FAST AND FURIOUS SCARS

Introduction by Dr Ofir Artzi (Tel Aviv, Israel)

Prof. Merete Haedersdal – RF microneedling or fractional CO2 laser to treat acne scars

As doctors, we are keen to improve the appearance of acne scars given the psychological impact they have on our patients.

Prof. Haedersdal presented a study comparing microneedling and radiofrequency (RF) (see PDF).

Another study compared 3–4 passes of RF and fractional CO2 laser using a 3-pass multilayer technique. In terms of texture, efficacy was similar. Patients treated with RF have quicker recovery than patients treated with CO2 laser. However, as far as pain is concerned, it is more intense with RF than with CO2 laser (important role of cool air).

Conclusion. Both techniques (RF and CO2 laser) are effective in improving acne scars. CO2 laser has more local side effects (the erythema lasts longer), but radiofrequency causes more pain during the procedure.

Dr Anjali Mahto (London, UK) – Acne scars: dark skin and laser treatment in a London clinic

Dr Mahto spoke of the stigma of acne, which affects 9.4% of the population. She also discussed the condition's complications and psychological impact, leading to depression and even suicide.

Despite the differences in darker skin types, there are few publications on high V and VI phototypes. Dr Mahto is often reluctant to treat these phototypes, where the risk of hyperpigmentation is higher, as is sebaceous activity.

Laser ablation is the standard treatment for acne. However, for high phototypes, Dr Mahto prefers the **Erbium YAG** laser, as it emits little collateral heat, which reduces the risk of hyperpigmentation and shortens recovery time for patients.

The risks are systematically explained to patients during the prior consultation. A **pre-laser treatment with depigmenting products** such as hydroquinone and tretinoin is also applied. Finally, patients' expectations are addressed, sometimes even by carrying out an initial test on a small area.

Dr Mahto usually uses a low density and more passes for these phototypes.

New therapeutic LADD combinations: **combines PLA (*polylactic acid*) and ablative fractional laser**. Dr Mahto stressed the importance of *isotretinoin* treatment in the early stages of acne, and lasers to treat active acne and acne scars in the early stages, in order to achieve better results.

Prof. Carlos Gustavo Wambier (South Kingston, USA) – PRP and insulin to treat acne scars

Prof. Wambier showed us a study comparing microneedling followed by **platelet-rich plasma (PRP) or topical insulin** (human insulin 40 IU/ml or metacresol 0.3%).

Insulin was more effective on ice-pick and boxcar scars (46%), while PRP was more effective on U-shaped scars.

Another study showed that insulin was also more effective on U-shaped scars in 80 patients.

Finally, one study showed that insulin was more effective on all types of scars, and that capillary blood sugar levels were not altered 30 minutes after treatment.

Dr Wambier uses a dermograph to inject the treatment as the product seems to penetrate better than with the usual microneedling, where the product remains on the surface. He showed us a video comparing the Dermapen and the dermograph he uses: with the Dermapen, the treatment remains superficial, whereas the dermograph goes deeper.

Example: *minoxidil* and *triamcinolone* injected into *cutis verticis gyrata* using this device.

His protocol: injection of Sculptra® 3 layers + CROSS technique. He performs a subcision with a cannula and anaesthetic + intradermal injections (in U-shaped scars) down to the reticular/subcutaneous dermis. He also adds 100% *trichloroacetic acid* or phenol (croton oil) using the CROSS technique to ice-pick and U-shaped scars.

Sculptra® injected (using the dermograph) over the entire face, in the papillary dermis.

Above all, it is important to combine several treatments, in the following order:

1. **Vascular and pigment laser**
2. **Dermal remodelling**
3. **Resurfacing**
4. **Filling**

Types of scars:

1. **Red scars (post-inflammatory erythema)**

Dr Jalian systematically starts with vascular laser treatment to treat post-inflammatory erythema at an early stage and prevent subsequent scarring. He then proceeds with dermal remodelling, followed by laser resurfacing, before finally using filling products.

2. **Hypo- or hyperpigmentation** (including post-inflammatory)
3. **Atrophic scars: ice pick, U and boxcar**
 - **Ice pick scars:** respond poorly to treatment and are the most difficult to treat. **CROSS technique with trichloroacetic acid** (Chemical Reconstruction OF Skin Scars) with TCC peel (65–100%) or phenol (89% carbolic acid). 3 to 6 treatments are sometimes necessary and this technique can lead to hyperpigmentation in high phototypes. **2 mm punch** alone with suture or closure as a second-line treatment for ice-pick or boxcar scars, followed by laser resurfacing after removing the sutures. This treatment equates to creating a new or fresh scar.
 - **U-shaped scars: subcision.** This is the most suitable treatment for U-shaped scars. It is performed using a 22G or Nokor 18G tri-bevelled hypodermic needle. Several treatments are required.

Disadvantages: this technique can cause oedema, haematomas and temporary nodules.

- **Fractional laser:** scars respond better to **high fluence and low density**. This laser is safe and effective; it stimulates dermal fibroblasts. Non-ablative fractional lasers are better tolerated and recovery is shorter, but they require more sessions.
- **Radiofrequency microneedling:** safe for high phototypes.
- **Filling products:** *hyaluronic acid* (HA), *polylactic acid* (PLA). Beware of vascular occlusion.

4. **Hypertrophic or keloid scars**

Conclusion regarding atrophic acne scars:

- ice pick: CROSS, punch-excision, energy-based devices,
- boxcar: CROSS, energy-based devices,
- U-shaped: subcision, energy-based devices, fillers.

Dr Irina Poleva (Rome, Italy) – Retrospective multicentre study of the effects of Poly-D, L-Lactic acid (PDLLA) injections on atrophic acne scars

Dr Poleva spoke about the use of *polylactic acid* on acne scars. This powerful collagen stimulator improves scars' texture and volume.

PDLLA is an isomer of lactic acid and is a modern, easier-to-use alternative.

This treatment does not require any advance preparation. It is stable and easy to apply. There is a low risk of nodules and massage is not necessary.

A study was carried out in Rome and Budapest (see PDF). 88 patients received 3 injections of PDLLA (once a month for 3 months; 27G intradermal needle).

A 27G intradermal needle can be used under the lower part of the scar.

A subcutaneous cannula can also be used.

Results: little oedema and redness after the injection, no side effects, no papules or nodules.

The trough in the area is reduced by 50%. This study had very positive results.

Conclusion: PDLLA injections are safe and effective on atrophic acne scars, but longer-term studies are needed.

Dr Ofir Artzi (Tel Aviv, Israel) – Hyaluronic acid (HA) for regeneration or a lifting effect in recent acne scars: recent publications and interesting data

Dr Artzi uses different therapeutic combinations depending on the patient and different treatment methods in a single session:

1. Subcision, hydrosubcision, application of X, CROSS with TCA;
2. Vascular lasers (LP 577/595/532 nm) and pigment lasers (picosecond Nd YAG);
3. Focal radiofrequency; CO2 or hybrid laser; sonophoresis (insulin, vitamin C, PLA).

Several types of fillers are available to treat acne scars:

- Temporary (*hyaluronic acid*), effective for < 18 months in general;
- Semi-permanent (*polylactic acid, calcium hydroxyapatite*), effective for < 24 months in general;
- Permanent, which are no longer used (*PMMA, silicone, Aquamid, Bio-alcamid*, etc.).

Fillers can be injected using different techniques: Droplet, linear, fanning, 3D volumisation, modified vertical filling technique, LADD, kinetic pressure, etc.

The aim is to get the scar on the same level as the surrounding skin.

It also improves the texture and contour of scars, increases dermal and subcutaneous cellular tissue and stimulates collagen formation.

Dr Artzi asked the following question: which treatment is best? **A structural lift or biostimulation?**

He carried out a study comparing two fillers: Juvederm Voluma® (non-HCC; structural lift) and Prophilos® (HCC, biostimulating effect). The products were injected once a month for 3 months, then the patients were monitored at 3 and 6 months. The consultations and photos showed that...

Initially, the filler is better as the biostimulating effect of Prophilos® offers superior improvement. In addition, the biostimulating filler changes the viscoelasticity.

Conclusion: different formulations of fillers with HA can give different results. The structural lifting effect (short-term improvement) and biostimulation (long-term improvement) should be considered. A combination of different types of HA may offer better results when treating atrophic scars.

Dr Cyril Maire (Arras, France) – True story of a dermatologist

Dr Maire discussed the case of a soldier with a high phototype who needed results quickly and for whom both the fractional CO2 laser and the non-fractional Erbium YAG laser were used.

He also mentioned a case of acne conglobata that worsened after oral *isotretinoin*, Kenacort® (*triamcinolone*) injections and antibiotics to reduce inflammation. Once the inflammation had subsided, he used radiofrequency, then fractional CO2 laser + dermal injections of *hyaluronic acid* and a skin booster (a serious case: it was important to act quickly and combine several treatments).

Dr Brunilda Bardhi (Tirana, Albania) – Acne scars: the best way to treat them for optimum results

Combination of several treatment methods for acne. Combining laser and fillers: his experience.

Dr Christine Diericks (Luxembourg, Luxembourg) – Endodermal radiofrequency (RF) to treat acne scars

Acne is a difficult condition. Dr Diericks tackles it using RF microneedling.

There is no single treatment regimen that is suitable for everyone. Note that RF can be used to treat all 3 types of acne scars. Dr Bardhi presented her experience of a new device she uses: the Therma DAS, which combines plasma and RF with an endodermal mode, inserted directly into the skin.

Intradermal RF cannula:

- Cannula administering anaesthesia,
- The endoDAS is inserted by tunnelling.

Dr Jong Seo Kim (Gangnam, South Korea) – A needle-free injector to treat acne scars and tighten skin using PLLA, PDLLA and botulinum toxin

Dr Jong Seo Kim talked about microbotox as a treatment for acne scars, using a pressurised micro-injection device. Micro-injected Radiesse® was also discussed (the question arises as to whether, in the case of such a superficial injection, there is not a risk of Radiesse causing nodules).

Dr Alvaro Andres Luque Acevedo (Bogota, Colombia) – Acne scars

For rapid results, opt for surgery: subcision, punch graft.

Combining RF microneedling and the CO2 laser in the same session (Dr Acevedo's combination of choice). He also combines calcium hydroxyapatite and the CO2 laser.

Conclusion: combine laser treatments with fillers and biostimulators to obtain better results.

Dr Jill S. Waibel (Miami, USA) – Acne scars

The vascular component should always be treated first in order to avoid complications such as post-inflammatory erythema, post-inflammatory hyperpigmentation and scar tissue, as inflammation plays a role in the subsequent appearance of scars.

The inflammatory response occurs up to 21 days after the active acne disappears.

Dr Waibel uses pulsed dye lasers to treat post-inflammatory erythema.

Once the erythema has resolved, he uses Erbium YAG lasers, followed by ablative fractional CO2.

He sometimes also adds 1 cc PDLLA (polylactic acid) and a subcision.

MICRO-CORING: a new, safe, minimally invasive procedure that removes the skin without surgery or laser treatment.

SCARS

Dr Oksana Blyshchuk (Zhytomyr, Ukraine) – Combining several methods to remodel scars

Dr Blyshchuk described a clinical case combining Erbium YAG, Asclepion Mck31 Dermablate and *isotretinoin*. She also adds polynucleotides to treat acne scars. For burn scars, she often uses the Erbium laser.

Dr Rashmi Shetty (Mumbai, India) – Hyperpigmentation: how can we treat acne and scars?

Dr Shetty explained the pathogenesis of post-inflammatory hyperpigmentation.

Inflammation stimulates pigmentation in the melanocytes.

She applies an anti-inflammatory peel with *acetic acid, jasmonic acid, salicylic acid and lactic acid*. She also uses *diclofenac*, sometimes serrapeptase and antihistamines in case of itching (to prevent excoriations in case of acne).

Other treatments: anti-inflammatories and antioxidants.

Dr Victor Gabriel Clatici (Bucharest, Romania) – Acne scars: risk factors

With severe acne scars, the risk factors are: the severity of the acne, the time elapsed between the appearance of the lesions and the start of acne treatment, and recurrences after treatment.

Other factors: family history, how the acne was treated, duration of acne and the 2 to 3 years following acne (window of opportunity for treatment), age, sex, sedentary lifestyle (television, computer).

In one study, 47% of patients with severe acne and scarring were male, had a family history of scarring and suffered from severe acne.

In 74% of cases, patients wait more than a year before consulting a dermatologist (they consult social media, influencers and beauticians first, rather than a dermatologist), a problem that could be avoided by raising public awareness.

Conclusion: preventing acne and scarring should be our main objective as dermatologists. Rapid, aggressive and appropriate treatment is needed to prevent scars from forming.

Dr Iñigo De Felipe y Garate (Barcelona, Spain) – Exosomes in scarring

What is an exosome? A group of extracellular vesicles, smaller than ectosomes, which have been shown to regenerate myocardial tissue. Exosomes contain proteins, mRNAs and miRNAs (microRNAs). They cannot undergo mutations because these microRNAs are translated into proteins.

The body's cells use exosomes to communicate and there are different types:

- Cancer cell exosomes;
- Exosomes from activated platelets;
- Exosomes derived from rose stem cells modulate the immune system, reduce inflammation, promote angiogenesis, accelerate cell proliferation and re-epithelialisation, and regulate collagen remodelling, thereby inhibiting scar hyperplasia.

804 exosome publications: they reduce inflammation. Some believe that lyophilisation alters exosomes' properties, but studies have shown that they are perfectly viable.

Dr de Felipe uses exosomes to treat:

- **Surgical scars**, for example, scars from tumours such as basal cell carcinoma of the nose;
- **Atrophic scars**, for example, atrophic body scars after mammoplasty, microneedling with exosomes;
- **Acne scars**: he performs 1) a subcision 2) a fractional Erbium YAG laser, then applies exosomes;
- **Keloid scars**: fractional Erbium YAG laser + exosomes; he also uses exosomes to treat **fibrosing frontal alopecia**.

Conclusions

- Exosomes derived from stem cells and rose stem cells can improve many types of scars, whether of traumatic or surgical origin. They can improve scarring and fibrosis.
- Their mechanism of action appears to be reducing severe inflammatory and autoimmune responses and restoring normal fibroblast growth.
- Exosomes should be seen as a new tool in dermatology.

FILLER FOR THE FACE: THE GOLD STANDARD

Speakers : Dr Kyuho Yi, Dr Michael Ted Somenek, Dr Robert Chmielewski, Dr Frank Rosangaus, Dr. Thomas Rapp, Dr Tom Van Eijk, Dr Fernando Silikovich, Dr Gabriela Casabona, Dr Chia Chi Kao and Dr Beatriz Molina.

Reports written by Marta García-Legaz Martínez (Murcia, Spain)

Dr Kyuho Yi (Seoul, South Korea) - Injecting fillers according to facial anatomy.

Dr Kyuho Yi stressed that to know how to inject fillers, you first need to have good knowledge of facial anatomy. You first need to study.

Dr Michael Ted Somenek (Washington, US) - Understanding the complexity of the tear trough area.

The area under the eyes is a part of the face whose anatomy must be studied in order to know precisely where to inject a filler.

It should be injected in the **submuscular** plane; however, lymphatic drainage and skin thickness should also be taken into account before injecting a filler into this area.

The specific product used in this area is also very important, and the amount used should be minimised (do not over-correct this area).

Dr Robert Chmielewski (Warsaw, Poland) - Forehead - safe injections: tips and tricks.

The forehead is a real challenge and is a highly visible part of the face.

As we age, we lose fibroblasts and superficial adipose tissue. Botox reduces muscle size and there is more atrophy. In this regard, fillers are an alternative to Botox and also reinforce the vitamins and HA used in this area. Like always, it is very important to have good knowledge of the anatomy in this area and the technique used.

According to Dr Chmielewski, **micro-cannulas** are safer in this area, but the quality of the injected product also needs to be ensured. For micro-cannulas, he uses two entry points in the temporal fossa (the cannula forms a fan) and one point in the centre of the forehead, which corresponds to the bottom of the fan (see PDF).

The product can be injected into the temporal fossa ('gunshot' technique) using a needle to achieve a lateral brow lift. That being said, Dr Chmielewski explained that even with aspiration, there is a risk of embolism. We therefore need to be very careful in this area and have good anatomical knowledge to avoid complications.

The procedure is safer when performed subcutaneously (he uses a filler for fine lines), to have a myomodulation effect and smooth away wrinkles.

Using a cannula placed above the central point on the forehead, he injects a Fillmed cocktail into the forehead from above; this cocktail has biostimulating action (biorevitalisation) to stimulate fibroblasts.

This technique improves tissue elasticity and induces myomodulation.

He rebuilds the subcutaneous cellular tissue and restores elasticity to the skin of the forehead. He treats the forehead with fillers, not with Botox! This is unusual.

Dr Frank Rosangaus (Mexico City, Mexico) - New and improved 'Happy Face' technique: corners of the mouth and marionette lines.

Dr Rosangaus spoke about the 'Happy Face' concept: around the mouth, we have a lot of muscles, which end up producing marionette lines and causing the corners of the mouth to sag. He reviewed the anatomy of this area. The muscle that lowers the corners of the mouth can also give the impression of a sad face (which can be treated with Botox). As for the lip-chin ligament, it is responsible for the jowls. There is virtually no fat in the centre of the chin.

His technique for improving this area consists in inserting a cannula from above into the corner of the mouth, clearing the skin and administering a retro-trace injection. In the corner of the mouth, Dr Rosangaus uses a cross-linked, adaptable product.

Note that he uses a bolus in a pre-mandibular needle for support.

The chin ligament runs from the bone to the platysma. That is why Dr Rosangaus considers that the platysma is a continuation of this area and can also be treated with Botox to achieve improvement.

Dr Thomas Rapp (Graz, Austria) - All about the lips

Tips and tricks for lip augmentation with fillers :

Lip fillers are becoming increasingly popular. Lip augmentation is undoubtedly a very common treatment; it is one of the most widely requested, even among young people.

The ideal patient should never have received fillers in the past. Patients with lips that have been heavily treated should be excluded or considered as non-ideal.

It is always important to consider the patient's anatomy, including any scars, any irregularities, the teeth (very important: if they are not of good quality, beautiful lips will never be possible; support is fundamental), the modiolus, the lip-chin fold, the corners of the mouth, the vermilion border, and the Cupid's bow. Proportions are changing: the ratio of upper lip to lower lip used to be 1:1.16 (with a slightly larger lower lip), but there are now several standards of beauty: a slightly higher upper lip, an almost equal lower lip, or a much larger lower lip, for example.

Should the tubercles be respected or not? Several techniques are used. For some patients, the philtrum can help shorten the area between the nose and upper lip.

It is important for the filler to have certain characteristics, such as a low G*, in line with the patient's anatomy. Even transferring HA to another syringe (for example, an insulin syringe) changes how much product is injected, and how linearly.

It is important to explain that augmentation should be gradual, particularly when the lip is initially very thin. Manage expectations (1 to 3 ml) depending on the hoped-for result; always anticipate and proceed in a gradual manner.

Various techniques: if a cannula is used, do not force it; go slowly, add volume, and possibly rotate.

Needle: puncture the superficial submucosa multiple times.

Dr Tom Van Eijk (Amsterdam, Netherlands) - Combined treatment, HA fern pattern technique plus PLA

To mix polylactic acid, Dr Van Eijk uses a small device that costs \$10 on AliExpress.

PLA injected via a needle into the dermis in two directions (under local anaesthesia).

PLA injected via a cannula subcutaneously.

Dr Fernando Silikovich (Buenos Aires, Argentina) - Injection points to be favoured in the lower face

When examining the lower third of the face, it is important to determine whether there is retrognathia, microretrognathia or sagging.

4-point concept - Dr Silikovich systematically treats 4 key areas: the cheekbone area, the chin area, the nose area and the jaw area. When this method is applied without touching the lower third of the face, the jowl line hardly improves at all.

Dr Silikovich recommends carrying out an ultrasound scan before using fillers.

To improve the lower third of the face, he uses his 'mobile bolus' technique: he injects the product into the gonion (lower, posterior and lateral part of the external angle of the jaw) and then rotates (mobile bolus). It is important to stand behind the patient when doing this.

Dr Silikovich showed us point 1 of the gonion, as well as 3 other points along the jawbone, at the mandibular ligament (before the jowls) and the chin (see photo).

Dr Gabriela Casabona (Marbella, Spain) - Are large diameter cannulas useful? Demonstration of techniques using 14G cannulas in the temporal and gluteal regions (study funded by Prollenium).

Dr Casabona uses cannulas for safety reasons. Even with insertion into the periosteum, an intravascular needle can be used. Dr Casabona uses Voluma® in the temporal region.

She performs an ultrasound scan and compiles the results. One hundred percent of injections are performed in the deep fascia. Gluteal region: ultrasound is used to determine the injection depth. Tripod technique.

Dr Chia Chi Kao (Los Angeles, US) - Faces that have received too much filler.

We are seeing excessive amounts of fillers used in very young patients, which is highly worrying. Dr Chia Chi Kao gave examples of patients for whom she had dissolved HA or permanent fillers using various techniques: surgery, lipo-aspiration, lifting, etc.

Dr Beatriz Molina (Great Britain) - A new approach to volume augmentation of the face.

The reference filler for the face should have the following characteristics: biocompatibility, versatility, hydration, reversible results, and longevity.

Because we are seeing more and more faces that have received too many fillers, not all the products used are equivalent; they have various characteristics, creating different effects.

Physico-chemical properties are important for providing anti-inflammatory effects, but the success of treatment also depends on technical aspects.

The product should be selected according to the desired result.

- Projection: at bone level, high G^* , low $\tan \delta$, low plasticity.
- Support: lifting and tightening, high G^* , low $\tan \delta$, low plasticity.
- Volume augmentation: contour, intermediate G^* , intermediate $\tan \delta$, intermediate plasticity.
- Tightened skin

Rheology and integration are important to avoid inflammation.

Not everything depends on volume; skin quality is sometimes mediocre; stimulate low G^* fillers.

We need to listen to what patients want, but as professionals, we have a duty to recommend and choose the right product and treatment.

REJUVENATION: COMBINED TREATMENTS FOR THE FACE AND BODY

Speakers : Dr Catherine Giorgio, Dr Alessio Redaelli, Dr Andrea Margara, Dr Maria Jeninna Francisco, Dr Todd e Schlesinger, Dr Johannes Flores Dayrit, Dr Prof Hassan Galadari, Dr Benjamin Herbage and Dr Sonja Sattler

Reports written by Marta García-Legaz Martínez (Murcia, Spain)

Dr Catherine Digiorgio (Boston, USA) – Full-face rejuvenation: treatments combining injections, lasers and energy-based devices

Can we combine fillers and laser treatment in the same session?

Dr Digiorgio recommends starting with fillers before using lasers as oedema can affect the visualisation of small areas with a loss of volume and lasers do not seem to affect HA fillers. Dr Digiorgio believes that these two treatments can be safely combined, whereas more caution is needed with RF microneedling.

Be careful not to use a neurotoxin on the same day, as the laser may cause migration and oedema.

Dr Digiorgio recommends administering the toxin at least two weeks before treatment with a fractional or non-fractional CO2 laser and Erbium laser.

A study demonstrating the safety of the toxin combined with the non-ablative fractional laser showed that, on the same day, only one patient developed ptosis after using a thulium 1927 laser.

To treat scars, we can use:

- Vascular laser: PDL, KTP, IPL
- Non-ablative or ablative fractional laser for texture
- LADD/ILK for hypertrophic scarring

Dermatoheliosis/wrinkles can be treated with:

- Vascular laser for telangiectasias and erythema: PDL, KTP, IPL
- Pigment laser: picosecond or Q-Switched for more obvious lentigines
- Texture: non-ablative or ablative fractional laser (1,550 nm, 1,540 nm, 1,550/1,927 nm, 1,470/2,970 nm, 2,910 nm, 10,600 nm)

Combinations of different densities of varying degrees with the same laser.

2,910 nm ablative fractional laser – Erbium fluoride glass: no post-inflammatory hyperpigmentation, no erythema, safe for all phototypes, quick and painless.

Dr Digiorgio combines an ablative fractional 2,910 nm laser, a vascular laser and a HA filler.

For full-face rejuvenation and skin firming, we can use:

- Injections to treat a loss of volume and dynamic wrinkles
- Fractional RF microneedling, focused ultrasound and multiple ultrasound beams for skin tightening
- Non-ablative fractional laser/pigment laser
- Tensor thread lifting

Conclusion: several techniques can be combined on the same day for:

- Faster improvement
- Greater patient satisfaction, because there are fewer sessions
- Bear in mind the limits of local anaesthesia
- Take care when using neuromodulators and lasers/energy-based devices in the same session

Dr Alessio Redaelli (Milan, Italy) – Poly-biorevitalisation and mesobotox A

Ageing is a multi-factorial process that cannot be stopped, but it can be mitigated.

Dr Redaelli presented a case that improved with a combination of poly-biorevitalisers + HA + mesobotox A.

Very superficial multibotulinum abobotulinum toxin A.

The indications are perioral, cheek and neck mimics.

Poly-biorevitalisation + HA (FillMed NCTF®) and AboBoNT.

Micropapules of abobotulinum using a 30G needle.

Dr Redaelli then presented the case of a 57-year-old smoker who benefited from this combination of treatments.

The injection must be intradermal (intermediate dermis). Otherwise, the toxin can cause asymmetry in the eyes. The product's diffusion limit is the deep dermis, to prevent adverse effects. The technique used is similar to mesotherapy. Dr Redaelli uses insulin needles or Nanosoft needles to inject the FillMed NCTF cocktail. He uses another needle for poly-biorevitalisation and abobotulinum toxin A.

- He dilutes 500 U of abobotulinum toxin A in 2.5 ml of saline (0.63 × 125 U of azzalure).
- 10 to 15 diluted units in each 1 ml syringe.
- He only uses Nanosoft needles to go precisely above the basal membrane (FillMed needle).

Conclusion: the combination of mesobotox A and poly-biorevitalising HA (NCTF) improves the skin's texture, elasticity and appearance.

Dr Andrea Margara (Turin, Italy) – Combining nanofat and HA for facial rejuvenation

HA has different actions depending on its molecular weight: biorevitalisation or biostimulation.

Low-molecular-weight HA stimulates the proliferation of fibroblasts and keratinocytes.

Fat is the ideal biomaterial for this HA.

One study has already shown preliminary results on:

- Blepharoplasty
- Intra-dermal injection of cross-linked HA on the entire face
- Fat removal from the abdomen
- Preparing nanofat
- Then injecting the fat obtained

Satisfaction in terms of skin quality: the results are very good.

Dr Maria Jeninna Francisco (Philippines) – Back to basics: a combination of biostimulators, injections and tensor threads for facial rejuvenation

It is important to determine each patient's needs on a case-by-case basis.

- Botulinum toxin: as well as wrinkles, it can improve the shape of the face, reduce migraines, bruxism, platysma (Nefertiti Lift), orange peel skin on the chin, raise eyebrows
- Dermal fillers: Dr Francisco explained how to inject the cheeks in supra-periosteal position, the pyriform aperture in supra-periosteal position and, using a cannula, the chin in supra-periosteal position
- Threads: natural, risk-free
- Biostimulators: polylactic acid (Sculptra), hydroxyapatite (Radiesse), polycaprolactone (Ellansé)

Define the area to be treated.

Dr Todd E. Schlesinger (Charleston, USA) – Combining several energy-based devices for skin rejuvenation and firming

Radio frequency (RF) can be monopolar, bipolar or multipolar, and the speaker explained how RF microneedling releases heat.

Combining RF microneedling + 1,064 laser to treat melasma.

Optimum combination: IPL and non-ablative fractional laser to combat wrinkles and ageing.

1,726 laser for acne.

Other examples of combined treatments.

Complications: Herpes simplex, reaction to retinoids, long-term bruising, etc.

Be careful with the neck: thinner skin, fewer hair follicles, variable distribution of subcutaneous adipose tissue.

Dr Johannes Flores Dayrit (Philippines) – Facial rejuvenation for men using laser, energy-based devices and injections
Dr Dayrit investigated the structural disparities between men and women in a study focusing on non-invasive methods to improve male appearance. He presented the case where males were made more “masculine” and “handsome” by injecting toxin into their chin, both in a young man and in an older patient.

Dermatologists must devise a comprehensive plan based on age:

- For young men: Er YAG laser resurfacing; injection of neurotoxin in the glabella, forehead and masseter; use of fillers in the chin, jaw and lips.
- For middle-aged men: monthly use of 675 nm fractional laser; injection of neurotoxin in the glabella, forehead, masseter and crow’s feet; bioremodelling with fillers such as HA (hyaluronic acid) and PLLA (poly-L-lactic acid); PDRN treatment (DNA polynucleotide) + HA in the periorbital area; recommendations on diet, restful sleep and regular exercise.
- For older men: the same treatment as above, supplemented by annual microfocused ultrasounds.

Dr Hassan Galadari (Boston, USA) – The combination of HA, toxin and polynucleotides

Biostimulation is a treatment used on the dermis to prevent or reduce the effects of physiological ageing or photoageing and to make the skin firmer, plumper and more elastic. We are already talking about regenerative medicine, with new treatments aimed at improving cells that have been lost, damaged or that are suffering from ageing.

- Dr Galadari uses NCTF® 135 AH (FillMed): 59 revitalising ingredients + HA for a tightening effect, brighter skin and collagen stimulation.
- Dr Galadari also injects microbotox into the dermis for rejuvenation, which also improves sebum production and therefore skin texture: forehead, glabella, crow’s feet, infraorbital area, cheeks, neck (upper and lower thirds).

He combines NCTF® with microbotox for the neck and entire face.

Dr Benjamin Herbage (France) – C-HA Pure Technology (study funded by Symatase) (industrial symposium)

Dr Herbage presented a new technological breakthrough: Symatase’s C-HA Pure Technology, which promises improved results. This technology involves cross-linking hyaluronic acid (HA), transforming soluble HA into an insoluble gel containing BDDE. He emphasised that G^* (shear modulus) is not the only characteristic to be considered, but that there are other equally important aspects.

There have been studies to assess this technology’s efficacy, particularly on the lips and in the context of HIV-associated lipodystrophy.

Dr Sonja Sattler (Frankfurt, Germany) – Combining biostimulators and energy-based devices for better results based on anatomical location

Dr Sattler highlighted the importance and difficulty of treating skin quality on the body, and then explored different options for body rejuvenation.

1. Focused ultrasound targeting the fascia, resulting in firming between the superficial fascia, superficial fat and deep fat.
2. Non-invasive radiofrequency (RF) combined with electromagnetic pulses is another option. This method can be used on all areas of the body. Several sessions are required, generally 6 to 8 at 7- to 14-day intervals. This treatment is painless, with no recovery time and can be delegated. The results depend on the energy and heat released over time.
3. Combinations of biostimulators and energy-based devices have been suggested as being more effective for body rejuvenation. These combinations are designed to stimulate fibroblasts. Calcium hydroxyapatite and PLLA (poly-L-lactic acid) were mentioned as important molecules, each with its own characteristics. For example, it can take up to 7 to 8 weeks for calcium hydroxyapatite to show significant results. The protocol for calcium hydroxyapatite dilution was discussed, in particular for the neck, followed by the addition of micro-focused ultrasound. For difficult areas such as the upper arms, the combination of calcium hydroxyapatite and micro-focused ultrasound was recommended.

In conclusion, when it comes to rejuvenating the body, particularly the arms and legs, Dr Sattler recommends the following combination:

- First step: use diluted calcium hydroxyapatite for a lifting effect, followed by micro-focused ultrasound.
- Second step: add in 8 sessions of non-invasive radiofrequency (PEMF) (once a week) on large areas of the body.

KELOIDS

Speakers : Dr Michael H Gold, Dr Albert Wolerstorfer, Dr Michael H TIRGAN, Dr Frank Niessen, Dr Ofir Artzi and Prof Uwe Paasch

Reports written by Marta García-Legaz Martínez (Murcia, Spain)

Dr Michael H Gold (Nashville, US) - The use of energy-based devices in the treatment of hypertrophic and keloid scars
Dr Gold combines pulsed dye lasers and fractional CO2 lasers (minimal density, but high energy, depending on the size of the scar).

Many lasers are used to treat scars: Dr Gold mentioned a new laser called UltraClear, as well as Aerolase and Alma Hybrid.

Conclusion: lasers have become an option in their own right for the treatment of keloid and hypertrophic scars. Several lasers work well; it is preferable to combine them.

Topical treatments boost their efficacy. Botox can also help.

Treat early for best results.

Dr Albert Wolerstorfer (Amsterdam, Netherlands) - How should corticosteroids be used for keloid scars?

Corticosteroids are the gold-standard treatment for keloid scars, but the way in which they are used is important, to avoid adverse effects.

A wide variety of techniques are available: Dr Wolerstorfer generally uses 96% triamcinolone. Some studies do not specify the dose, the needle or the injection area. Higher-quality studies are therefore needed.

Triamcinolone acetonide (TAC) is the form that is generally used because of its long half-life (Kenalog®/Kenacort®): we can see the sedimentation of *triamcinolone*. High pressure is required to inject *triamcinolone* into the scar, and this pressure depends on the size of the syringe.

The plane in which the treatment is injected is also important.

Specialists agree on the method for injecting corticosteroids into keloid scars (**consensus according to the Delphi method**)...

- They recommend a concentration of 40 mg/ml to treat keloid scars outside the face.
- Sessions should be scheduled every 4 weeks. Shorter intervals are possible, but carry more risk.
- In adults, it is preferable to limit the dose of TAC to 40 mg per month.
- However, for large keloid scars, this dose can be increased to 80 mg.
- If a dose of more than 80 mg per session is necessary, other treatments should be considered.
- In children, the dose is reduced according to body weight.
- A small diameter syringe is used - 1 ml with a 25 or 27 G needle.
- A local anaesthetic is administered prior to treatment, in order to reduce pain at the injection site.

- Dilution with an anaesthetic to reduce pain is not advisable.
- Bleaching determines at which level the infiltration should be performed (This rule does not apply as much to phototypes V-VI).
- If the keloid scar is very hard, consider several complementary longitudinal or cross-sectional passes by inserting the needle through the scar.
- LACK OF CONSENSUS:
- It is generally recommended to inject 4 to 12 mg of TAC per cm² into keloid scars outside the face.
- Dr Wolerstorfer recommends performing injections: at the surface, at the edges, in the centre and deep down.

Conclusion: The injection of corticosteroids into keloid scars is not a standard treatment, but we use it every day in clinical practice. Therefore, this consensus using the Delphi method could contribute to the dissemination of this technique, in order to improve the treatment of keloid scars. However, there is no consensus on some important points. The distribution of the drug in keloid scars needs to be further studied.

Dr Michael H Tirgan - Non-surgical treatment of keloid scars: optional or mandatory?

Keloid scars should be systematically treated, as they all start out small before progressing. Dr Tirgan gave some examples of patients who had not responded to triamcinolone. These 3 cases all had a history of surgery.

Few articles mention the aggravation of scarring after the procedure. And yet in 1993, an article indicated that up to 50% of patients had seen their scar worsen after surgery.

Treating keloid scars: first follow the "first, do no harm" rule, by reviewing the clinical data.

Massive keloid scars on the ear: 72% of patients had already undergone surgery, making this a risk factor.

Ditto for keloid scars on the neck: a very high percentage of patients had a history of surgery.

We can therefore conclude that they should not be surgically treated.

A very high percentage of these patients had had keloid scars before the age of 18. In 56.20% of cases, surgery aggravated the scar.

It is advisable to treat keloid scars at an early stage to prevent them, but **NEVER** with surgery.

1. **Intralesional corticosteroids** are the standard treatment for keloid scars.
2. Second-line treatment is **intralesional chemotherapy**: 5FU, vincristine, docetaxel, bleomycin. Start by administering triamcinolone. If there is no response, administer 5FU. If there is still no response, add vincristine, then possibly docetaxel.

Contact cryotherapy for the treatment of large and tumoral keloid scars, particularly on the **ears**. Dr Tirgan gave several examples where a good response had been achieved with contact cryotherapy.

Combined treatment with triamcinolone and cryotherapy produces very good results.

According to Dr Tirgan, **cryotherapy is much preferable to surgery for small keloid scars**. NO SURGERY: he reiterated that surgery alters the prognosis associated with keloid scars.

Dr Frank Niessen - Radiotherapy

The back, ears and thorax are difficult areas to treat; this is worse in areas under tension.

Various publications have shown that radiotherapy damages DNA and produces reactive compounds (30 grays, 18 grays). This treatment requires at least 12 months of follow-up.

Complications associated with radiotherapy: erythema, dehiscence, infection, hyper- or hypopigmentation, telangiectasia.

Despite this aggressive method, keloid scars can recur, reminding us that this is a chronic disease. There are risk factors for recurrence: age over 30, hypertension, shape of the scar (irregular), body, diameter > 4 cm, pain and itching, area of tension, infection, time before RT, treatment history.

Articles dealing with high-dose brachytherapy after surgery.

Do fungal infections play a role in the formation of keloid scars? Some articles support this assumption.

Areas prone to keloid scars contain fewer macrophages.

Further research will be needed to answer all these interesting questions.

Dr Ofir Artzi - Needle-free compressed air injections for keloid scars

Many types of lasers can be used to treat keloid scars, but they induce micro-lesions at various levels.

Depending on the device, the injection depth varies.

JVR air injection is a technology that can be used to treat many types of scars (e.g. HA mixture, hybrids). Dr Artzi has started using it to treat keloid scars.

The injection depth depends on the pressure exerted by the device.

Dr Artzi uses JVR technology in a variety of ways: corticosteroids, 5FU, bleomycin, HA-HCC.

He orients the injections in various directions and combines them with triamcinolone and 5FU (spectacular perioral case: 9 5FU, 1 triamcinolone TAC:5FU; 1:9).

Bleomycin in cases resistant to needle-free air injection. Dr Artzi sometimes combines triamcinolone 1:1 with bleomycin, for example on the thorax.

He is currently testing hyper-diluted Profilla with this type of injector for its regenerative properties.

Mitochondrial dysfunction is systematically accompanied by chronic inflammation.

By modulating mitochondrial function, it is possible to improve elasticity.

How? By using topical treatments and certain oral treatments: resveratrol, laser therapy, etc.

Collagen degradation and the way in which HA fragments aggravate inflammation are currently being studied. Oxidative stress (ROS) damages the mitochondrial genome, leading to mitochondrial dysfunction. This dysfunction in turn induces the senescence of fibroblasts in the dermis, and also of keratinocytes, thereby altering collagen synthesis.

Fractional ablative laser reduces the number of senescent fibroblasts and the number of keratinocytes with damaged DNA (reduces the formation of actinic keratoses).

Galactoarabinan, hyaluronan, beta-glucan, betaine, bakuchiol.

Exosomes: nanoparticles carrying 30 to 150 nm complexes.

Experiments aimed at inducing the release of these exosomes: stem cells derived from exosomes regenerate damaged tissue.

Conclusion: strive to modulate mitochondria; combinations of HA and antioxidants; exosomes, to stop inflammation by focusing on the exosome.

IMCAS ALERT : LASERS

Speakers : Dr Hans Joachim Laubach, Dr Ashraf Badawi and Dr Diane Irvine Duncan

Reports written by Marta García-Legaz Martínez (Murcia, Spain)

Session in which specialists talked about several complex clinical cases and their experiences.

Dr Hans Joachim Laubach (Strasbourg, France) - Treating dark spots with IPL

Dr Laubach presented a case of hyperpigmentation treated with IPL: the specialists discussed a case of oedema and dark spots on the lip and mandibular area, which had led to a preliminary diagnosis of drug-induced fixed pigmented erythema (FPE). This FPE was treated with IPL, after which the patient developed post-inflammatory hyperpigmentation. Strict photoprotection is important. After IPL, the patient also developed post-burn hypopigmentation.

Treatment: 2 to 6 months after IPL, medium-potency corticosteroids twice daily, photoprotection, *tacrolimus*. The follicles then began to recover their pigmentation. For cases of hypopigmentation, the specialists suggested the following solution: fractional CO₂ laser to stimulate tissue regeneration.

Dr Ashraf Badawi (Cairo, Egypt) - Laser safety: practical aspects

Dr Badawi gave a presentation on laser safety and then reviewed a clinical case study.

Objectives: identify the practical aspects associated with laser safety; distinguish between adverse effects and professional errors.

Introduction: the increased use of lasers and IPL has led to a rise in the incidence of reported complications, but also to a better understanding of these complications.

Materials/method: it is critical to understand laser safety advice and its practical importance with a view to reducing laser-related accidents and professional errors.

Results: there is a major difference between professional errors and adverse effects - the former can be avoided.

Conclusion: for anyone working with laser systems, it is essential to understand the practical basis for laser safety categories, as well as the risks to eyes, skin and teeth, the fire risk, and the electrical risk associated with this technology.

Dr Badawi explained the classification of the risks associated with lasers, bearing in mind that medical lasers are classified in risk category IV, i.e. the highest category.

Risks: eye damage, skin damage, dental damage, fire, electrical and mechanical risk.

DO NOT CLEAN WITH ALCOHOL, as this may cause a fire.

We need to have our eyesight checked every year.

The cornea can be affected, in the form of photokeratitis and infrared burns.

Lasers can cause photothermal cataract on the crystalline lens.

The risks to the retina include photochemical and thermal damage, cataracts, and retinal burns.

Beware of infrared radiation, which we do not perceive. Also beware of ND:Yag lasers, because we do not notice the light emitted, which can nevertheless damage the retina. This is why we should always wear safety glasses!

In addition to inducing direct damage, lasers are also associated with specular reflection (mirrors). DO NOT PLACE ANY MIRRORS in the laser zone. Diffuse reflection from other surfaces.

Safety glasses must be approved for the correct wavelengths and optical density (optical density must be at least 4.0).

Intraocular lens: with periocular CO₂, be careful not to set the heat too high, for safety reasons.

Lasers also generate air pollution. It is important to have a good ventilation system equipped with filters against toxins, carcinogens and infectious agents (HPV).

Dr Badawi showed us a study concerning a hair-removal laser, which can contain all these toxic and carcinogenic substances. Wear a mask.

A mask is necessary to avoid inhaling these substances. Have a smoke extractor in the immediate vicinity of the laser and wear N95 surgical masks.

ND:Yag lasers are associated with the highest number of accidents.

Some of these are due to professional errors that can be avoided. There can be a wide variety of causes: incorrect handling of the laser, diagnostic error, lack of documentation, inappropriate information given to the patient, inappropriate indication, etc. For example: hypopigmentation following laser hair removal.

Dr Badawi then presented a clinical case study involving hair removal from a Becker's naevus (patients primarily notice their hair, rather than their pigmentation) using a long-pulse, low-energy 755 nm alexandrite laser. Question: what is the best option in terms of safety and efficacy for removing a Becker's naevus? Most of the participants started with a 755 nm alexandrite laser, while others recommended a 1064 nm ND:Yag laser. 4-5 sessions. Note that the alexandrite laser eliminates hair and has an effect on naevus pigmentation. When we want to treat the pigmentation itself, it is preferable to use a Q-Switched laser. (That being said, we generally avoid treating it, as this is difficult and it recurs.)

Dr Diane Irvine Duncan (Fort Collins, US) - Clinical case study

Optimising the treatment of acne scars using radiofrequency microneedling.

Atrophic scars remain a difficult problem.

Dr Irvine Duncan described a case in which there was no improvement despite 6 microneedling sessions. It is advisable to combine several treatments, or not, depending on the type of scar. For example, for a U-shaped scar, if subcision is not performed, there will be no improvement, even with aggressive lasers.