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PRP state-of-the-art

Having postponed the CILAD conference for two years due to the pandemic, we were finally able to meet here in the Spanish capital to share our experiences and latest news in dermatology.

1. Basic concepts of PRP

We began with a review of the basic concepts of PRP by Dr Natalia Seguí.
The concept of PRP dates back to 1960 when wounds were treated with autologous blood for the very first time. However, it was not really until the 1990s that people began hearing about PRP thanks to its use in trauma and sports medicine, where elite athletes were given PRP to treat their sports injuries.
There are many uses of PRP in dermatology, such as scarring (from burns, surgery or acne), skin ulcers, alopecia and cosmetic treatments.
Its main cosmetic uses are to stimulate type I collagen production by fibroblasts, trigger angiogenesis to combat sagging skin, smooth fine lines, improve dark eye circles and improve skin quality. If injected into the deep layers it can even stimulate adipose cells and increase facial volume.
This biostimulation comes largely down to the platelets, which contain granules that store growth factors for stimulating all these processes.
They are obtained by extracting a variable quantity of venous blood, which is then centrifuged (to separate the platelets, leukocytes and red cells) before the platelet fraction is re-injected and releases the growth factors from its alpha-granules so they can act on the receptors in the cell wall. These growth factors have a half-life of one week. They have a specific affinity to the receptors and once the system is saturated they cease to have any effect. Mesotherapy is performed at three levels: the superficial intradermis (nappage), the dermo-epidermis (papular technique) and the dermis (point-by-point, or bolus technique). The results are visible after 2–3 sessions given at 4–6 week intervals.
The talk concluded with a discussion of the combined effect of PRP and hyaluronic acid as tested by various studies which have demonstrated the superior efficacy of this combination for improved skin quality and elasticity.

2. PRP for skin rejuvenation

Dr Denise Steiner gave a literature review of the use of PRP for skin rejuvenation. There is debate over the dose, time and results because the application methods and volumes differ between zones,

meaning it is not currently possible to compare studies directly.
However, there is evidence of increased collagen in skin biopsies, less microinflammation, a reduction in excessive oiliness, a proliferation of dermal fibroblasts, fibroblast activation, improved vascularisation, and restored skin vitality and firmness.
The use of PRP for treating melasma is a controversial subject, although it does appear to improve the skin whitening thanks to an increase in TGF-B which inhibits melanogenesis.

3. PRP for alopecia

Dr Gloria Garnacho presented a bibliographical review of the use of PRP for treating alopecia and her personal clinical experience.
As well as the known uses, more and more applications are being discovered, mainly for scarring alopecia, thanks to the use of combined PRP for treating the inflammation seen with this form of alopecia, but always as part of a treatment combination.
PRP injections are a safe and effective alternative requiring at least three induction sessions spaced one month apart, and it appears to work better in men with non-severe AGA. It is also preferable to the manual technique due to the use of injection devices.
PRP can stimulate the beta-catenin pathway which plays a crucial role in stimulating stem cells in the hair follicle and its subsequent regeneration.
Dr Garnacho also explained that the results of different PRP studies are difficult or even impossible to interpret because methodologically they are completely different.
The indications of PRP for alopecia are male and female androgenetic alopecia, scarring alopecia, capillary anti-ageing, alopecia secondary to cancer treatment and telogen effluvium.

4. PRP and botulinum toxin

Dr Patrizia Chú began by reinforcing the basic concepts of PRP before considering whether there could be any interaction between botulinum toxin and PRP therapy in a combined skin rejuvenation session. After presenting various studies based on this hypothesis, she concluded that PRP inhibits type A botulinum toxin when applied simultaneously, so the two techniques should be used in separate sessions. Likewise, PRP could be used as an easily accessible autologous option for treating botulinum toxin overdose.

5. Combined techniques: PRP and stem cells with fractional CO2 or microneedling

Dr Maritza Kummerfeldt showed us how stem cells, like PRP, secrete multiple growth factors to stimulate the synthesis and migration of collagen, making them a effective treatment for scarring, skin thickening, melasma, post-acne scarring and thinning hair.
They can also be combined with fractional CO2 laser or electronic microneedling, with evidence of notable differences in reduction of erythema and healing time.

6. Skin boosters and biostimulation for rejuvenation

Dr Javier Ruiz spoke about the effect of skin boosters and biostimulation on the skin.
Skin boosters are microinjections of low-density hyaluronic acid that deliver deep nourishment and hydration to the skin. Their main benefits are improved skin elasticity and structure, radiance and a restored water balance. The hyaluronic acid provides a support for the collagen and elastin, and has a high affinity for binding to and attracting water molecules and indirectly activating fibroblasts insofar as a single injection into the skin is enough to stimulate collagen. Other products available on the market are polylactic acid, calcium hydroxyapatite and polycaprolactone which produce an inflammatory response, the extent of which will depend on patient characteristics, injection level, dose, biomaterial properties and injection technique, so response will differ from patient to patient.

Male genital disease

1. Epidemiology of male genital disease in Uruguay

We were delighted to hear a talk by a leading expert in this field, Dr Caroline Agorio, Coordinator of the Urodermatology Unit in Uruguay.

Male genital disease encompasses a huge range of local, systemic and infectious skin conditions with psychological effects. Patients require cross-disciplinary care by urologists, infectious disease specialists and dermatologists. The most common presentation in non-circumcised patients is premalignant and malignant inflammatory lesions. Dr Agorio has set up a pioneering interdisciplinary team in Uruguay for dealing with male genital disease whose goal is to describe the regional epidemiology, correlate it with circumcision and comorbidities, analyse biopsy results, indications and complications as well as ensure diagnosis and correct treatment.

There are 10 key points to remember with male genital disease:

1. Lesions are persistent and malignancy cannot be ruled out: biopsy.
2. An intact prepuce is closely correlated with a higher incidence of genital dermatosis.
3. Circumcision is a key treatment for various inflammatory dermatoses and tumours.
4. Men circumcised at birth have a lower incidence of penile cancer. Penile cancer is therefore a preventable disease.
5. Irritant contact dermatitis is the most common genital disease in men.
6. Lichen sclerosus is the most common cause of phimosis in men.
7. Don't be afraid to use topical steroids for lichen sclerosus.
8. Genital melanotic macules must be differentiated from melanoma.
9. Whenever appropriate, always request serologic testing for STIs.
10. Long-term monitoring is crucial in the absence of a definitive diagnosis.

2. Male genital lichen sclerosus

Dr Tang Shim was unable to attend in person but he had pre-recorded his presentation for the event. Lichen sclerosus causes urological and sexual dysfunction in men and is significantly correlated with penile squamous cell carcinoma. It may be asymptomatic or present as adhesions, itch, stinging, white patches, blisters, cracks or urological morbidity. We were shown various photos of different clinical presentations. The aetiology of the disease is unknown, but it is linked to infections, immunogenicity, autoimmunity and trauma. Treatment should aim to minimise urethral and sexual dysfunction and avoid the risk of carcinoma. The therapeutic arsenal includes potent topical steroids (note the possibility of HSV reactivation in this location), circumcision, smoking cessation, daily use of syndet soaps, and daily protection with Vaseline.

3. Differential diagnosis for red patches on the glans

Dr Jorge Navarette gave a talk about the possible diagnoses for red lesions on the glans. He suggested a handy mnemonic RED PENIZ: R: Reaction/Fixed Drug Eruption; E: Erythema/Scabies; D: Interface Dermatitis (lichen sclerosus, lichen planus etc.); P: Psoriasis; E: Eczema; N: Neoplasm (PeIN, Kaposi, Paget, amelanotic MM); I: Infection (balanoposthitis, syphilis, cellulitis); and Z: Zoon's balanitis.

Remember that the main suspects for a fixed drug eruption are antibiotics (TMP/SMX have an affinity with the genitals, tetracyclins), NSAIDs, paracetamol, barbiturates and hydroxychloroquine.

Kaposi's sarcoma is the second most common neoplasm of the glans and may be isolated in this area.

4. Persistent anogenital HPV infection and squamous intraepithelial lesions

Dr Rosa Feltes explained how HPV is implicated in 90% of anal cancers. The global prevalence of HPV among men is 21%. There are various treatment options for patients who already have a HSIL:

imiquimod 5%, 5-FLU 5%, cidofovir 1% cream, thermal ablation 80%, CO2 laser, electrosurgery, cryotherapy, radiofrequency and photodynamic therapy.
Most men are virus-free at 2 years (90%). Persistent cases (mainly HPV 16) are more likely to develop squamous cell carcinoma precursor lesions.
We must bear in mind that the incidence of oropharyngeal cancer in men has risen in recent years due to the high prevalence of HPV. There are also high-risk groups such as MSM and HIV positives that require special attention, in particular anal screening and anogenital examinations.

5. Pigmented lesions on the male genital area

Dr Sofia Nicoletti gave an excellent presentation on the differential diagnosis of pigmented lesions on the male genital area based on age, single or multiple presentation, location and dermoscopic pattern. Diagnosing pigmented genital lesions can be a challenge, because there are a number of benign and malignant possibilities and therefore it is important to take a thorough history and physical examination, and a biopsy is very often needed. For a diagnosis of mucosal melanoma, colour is more important than structure, and blue, white and grey are indicative of possible melanoma. Treatment must be personalised and patients must be followed-up with a dermoscopy and guided biopsies.

Newborn dermatosis

1. Umbilical cord and stump problems in newborns

Dr Patricia Garnica told us about the main problems that can affect the umbilical cord in newborns. The umbilical cord is a temporary organ vital for intrauterine maternal/foetal communication. Occasionally, cord separation can take longer than three weeks due to perinatal factors such as prematurity, low birth weight or the use of topical or systemic antibiotics; whenever this occurs, it is important to rule out infection, medial umbilical ligament abnormality or even immunodeficiency. In general, umbilical cord problems are due to development problems (persistent omphalomesenteric duct, medial umbilical ligament abnormality or umbilical hernia), umbilical masses (umbilical granuloma or umbilical polyps) or even infections such as omphalitis.
The treatments for umbilical granuloma include silver nitrate, clobetasol propionate and salt granules, although this can cause irritant dermatitis.
As for umbilical stump care, in countries with a low mortality rate it should be kept dry; however, in places with a high mortality rate it should be treated with chlorhexidine 4%.
It is important to recognise the various umbilical cord and stump problems in order to ensure the correct treatment and prognosis.

2. Newborn ichthyosis

Dr Daisy M. Blanco gave a great talk about ichthyosis and its global approach in newborns. Ichthyosis is a heterogeneous group of conditions causing impairment in the quality of life of patients and their families. A new classification of ichthyosis has improved our understanding and correct diagnosis of the condition, since it encompasses both clinical, histological and molecular aspects. Research into underlying genetic disorders is essential for the development of more specific therapies and possibly even a cure, such as gene therapy.

3. Congenital cutis aplasia

Dr Franz Barnes Saldaña presented a general overview of this pathology. Cutis aplasia is a rare congenital malformation comprising a localised area of skin that has not formed fully, affecting the epidermis, dermis, subcutaneous tissue and even the bone. Most cases are isolated and it is important to rule out any other syndromes or congenital defects. The majority of cases are caused by

sporadic mutations with an unknown and multifactorial pathogenesis. The lesions are usually located on the scalp. We must rule out syndromes such as Barth and Adams-Oliver. We must also distinguish it from obstetric trauma, encephalocele, sinus pericranii and epidermolysis bullosa. Treatment must be personalised and non-severe cases (less than 1cm) should be treated with emollients, topical antibiotics and hydrogels, and the defect covered. When indicated, surgery can involve allografts, autografts or even hair transplants. The prognosis is good for small lesions.

4. Newborn tumours

Dr Margarita Larralde explained the challenge and importance of recognising different tumour lesions during the neonatal period. Dermatologists are often scared of taking biopsies of tumours if they are possibly or actually vascular. It requires a trained multidisciplinary team.
Infantile myofibromatosis is the most common benign soft tissue tumour in early infancy (<2 years of age). It tends to present as a single plaque that usually has a good prognosis and disappears spontaneously.
Congenital infantile fibrosarcoma is a rare mesenchymal tumour, more common on the limbs, with a relatively good prognosis compared to the adult form. Immunohistochemistry will reveal vimentin and treatment is chemotherapy followed by surgery.
Syringocystadenoma papilliferum is a congenital or acquired organoid nevus that appears in isolation or on a nevus sebaceus of Jadassohn, sometimes as part of a syndrome.
Infantile lipofibromatosis is an uncommon soft tissue tumour that forms a single, firm, poorly-defined, painless subcutaneous nodule on the hands and feet with no potential for metastasis. It requires either surgical resection or simple observation if it is slow-growing. The recurrence rate is up to 30%.
Dermatofibrosarcoma protuberans is a rare but locally aggressive fibrohistiocytic tumour with a high rate of recurrence and low rate of metastasis. It presents as macules, plaques or even nodules located mainly on the torso and limbs. Treatment is surgery.

5. KID syndrome

Dr Rosalía Ballona gave us an excellent talk about KID syndrome. This is an autosomal ichthyosiform syndrome (non x-linked). It is a rare congenital disorder characterised by keratitis, ichthyosis and deafness together with mutations in the GJB2 gene that encodes proteins such as connexin Cx26. Sometimes the syndrome cannot be diagnosed at birth because the clinical signs are incomplete. It is important to address any skin complications such as opportunistic bacterial or fungal infections that can lead to systemic candidiasis and septicaemia.

Perioral aesthetics

1. Perioral aesthetics: barcodes and fine lines

Dr María Vicente Ruiz explained how upper lip rejuvenation is a very important element of facial attractiveness and treatment is highly in-demand. Ageing in this area is due to bone resorption, a reduction in fat compartments, thinning skin, elastosis and environmental exposure (UV rays, pollution, tobacco smoke, diet, cosmetics, microbiome etc.). It is therefore important to use effective sun protection, not smoke and use targeted cosmetics. The region must first be treated in the deep layers (which provide support) with cross-linked high molecular weight hyaluronic acid. This is followed with dermal treatments with non-cross-linked hyaluronic acid via the blanching technique, vitamin complexes, laser and radiofrequency. The epidermis is treated with laser, peels, plasma technology or IPL. It therefore involves a holistic approach, but without over-treating the zone, and good prevention.

2. Cannula method for lip fillers

Dr Elena Vargas spoke about lip anatomy and its ideal proportions (1/1.6 in Caucasians). In order to avoid complications from the filler materials entering the bloodstream, superficial injections are best using a perpendicular approach from the cutaneous lip because the artery is more often located in the red lip. There are various lip filler techniques, such as serial punctures or linear threading, radial fanning, outer edges, lip eversion and the tower technique. Vascular occlusion is less frequent with a cannula than with a needle (sixfold reduction), with fewer lacerations to the microvasculature. Lip fillers are safe and easy when injected using a cannula, making it possible to use a perioral approach. However, a needle is better for the filtrum and for touch-ups.

3. Optimising botulinum toxin injections in the lower third of the face and neck

Dr Elena Vargas spoke again about the uses of botulinum toxin in the lower part of the face and neck. This region is much more complex than the upper part, with less reliable and more unwanted results. It involves important muscles involved in eating, drinking and facial expressions.
It is important to palpate the DAO (depressor anguli oris), avoid medial injections, approach the labiomental fold laterally and the mental foramen inferiorly, and not overlook the platysma.
The mentalis muscle raises the chin and lower lip and creates the horizontal chin crease, and orange peel skin on the chin should be given one midline injection or even two deep lateral injections perpendicular to the skin.
We should avoid any medial approach to the orbicularis oris muscle or going too close to the commisure, noting that it can cause unusual sensations during the first twenty days.
When treating perioral wrinkles, excessive doses can leave the lip looking too flat.
For the neck bands, you should pinch the band and inject the toxin into the superficial muscle, with 2–6 injections per band and 1–3 units per injection. Remember, never inject more than 50 units into the neck, and deep injections can cause dysphagia and dysphonia.

Chronic urticaria. Today and tomorrow

1. Chronic urticaria. Phenotypes and unique clinical features

Dr Isabel Ogueta explained the importance of patient classification and predicting treatment response. She spoke about the importance of personalised care for patients with chronic spontaneous urticaria, based on phenotype, endotype and biomarkers. ESR and CRP are routinely recommended with CSU. The laboratory biomarkers of this chronic inflammatory disease are CRP, mean platelet volume and IL-6, with plasma levels being linked to disease activity. Baseline UAS7 is the main clinical predictor of a need for third line therapy (omalizumab).
Patients whose pathophysiological mechanism is based on type IIb autoimmunity (TEAE+/TAB+) will respond more slowly to omalizumab (slow responders). Low baseline total IgE and FcERI levels are also a predictor of poor omalizumab response. Elevated D-dimer predicts a faster response to anti-IgE treatment. CRP, IL-6, D-dimer and F1+2 are the most promising candidate biomarkers, but further research is required.

2. Differential diagnosis of chronic spontaneous urticaria and urticaria flare-ups

Dr Margarida Gonçalo spoke about the possible differential diagnoses for urticaria, the main ones being urticaria vasculitis, autoinflammatory syndromes, non-histaminergic angioedema, bullous pemphigoid and urticarial dermatitis.
With urticaria vasculitis, it is important to consider complement levels, which if normal are a predictor of severe disease.
The principal autoinflammatory syndromes are Still Disease and Schnitzler Syndrome. With non-histaminergic angioedema we observe low C4 levels and C1-inhibitor deficiency, remembering that angioedema can be triggered by ACE inhibitors, valsartan, sacubitril, sartans and gliptins. Urticarial

dermatitis is a hypersensitive skin condition involving a combination of urticaria and eczema, although 10% of cases are paraneoplastic in origin. Urticaria flare-ups can be identified by taking a thorough clinical history combined with comprehensive tests, a biopsy and blood tests including biomarkers.

3. What does the future hold? How will we treat urticaria and angioedema in 2022 and the future?

The esteemed Dr Ana Maria Giménez Arnau, a global pioneer of urticaria research, gave an inspiring presentation.

The global prevalence of chronic urticaria is 4%. The treatment goal is complete freedom from symptoms. It is important to note that the weals do not contain only histamine. Weals also express platelet-activating factor receptors, which can be a treatment target. The only marker of antihistamine-resistance is baseline UAS 7. However, currently the only antihistamine active against PAF is rupatadine.

Omalizumab can be used during pregnancy, in combination with other biologics, in children aged 12 and over and in patients with various comorbidities. Guidelines state that if a patient does not respond to 300mg/month, it is now acceptable to increase the dose to 600mg/month. Cyclosporine can be given in combination with omalizumab for a better response rate.

Ligelizumab has been trialled as a new treatment, but a phase III study had to be discontinued due to non-superiority to omalizumab. Other new molecules include benralizumab which is in phase III trials as an eosinophil blocker. The TSLP inhibitor tezepelumab is in phase IIb. A BTK inhibitor, currently used to treat cancer. Special mention was also made of remibrutinib which is about to enter phase III and has produced very promising results thus far.

Controversies in melanoma

1. Hutchinson's melanotic freckle (lentigo maligna)

Dr Fernando Stengel gave a talk on managing lentigo maligna. It is important to note that interpretation can be complicated by the associated sun damage. A correct diagnosis is not easy because the lesions can evolve, including on a molecular level, into lentigo maligna melanoma. In addition, the disease usually occurs in older patients, meaning greater morbidity and the need to carefully analyse the risk/benefit of treatment. Treatment for lentigo maligna is elective surgery, or alternatives such as imiquimod (as monotherapy, adjuvant therapy which appears to reduce the size, or neoadjuvant therapy despite the 4% recurrence), radiotherapy, cryotherapy, laser therapy and even active observation in selected patients.

2. Role of sentinel node biopsies in melanoma. 2022 progress report

Dr Abel González explained that there is no longer any reason not to perform a sentinel node biopsy since it is the best prognostic indicator. However, lymph node dissection is no longer indicated because even if the SNB is positive, there is no evidence of an improvement in survival. Only 8% of SNB+ cases have adjacent positive nodes meaning that the risk/benefit ratio is not in favour of completion lymphadenectomy. In the future we are likely to not even need SNB and will instead use genetic markers for predicting the best treatment in each case.

3. Melanoma over-diagnosis and controversy over changes in incidence and mortality rates

Dr José Antonio Sanches told us that in the past 10 years, the rate of new cases has been on the increase whilst mortality rates have been falling. There has been much debate over this increase in diagnosis, given the potential harm caused by over-diagnosis. The rise in melanoma diagnosis involves only cutaneous forms, with no change in non-cutaneous forms. The possible reasons behind

this change in incidence could be UV exposure, excessive skin biopsies, better skin cancer screening, changes in histological diagnosis of melanoma, historical under-diagnosis and an ageing population.

4. Treatment controversies: a case study

Dr Matias Maskin presented a tricky case of a patient with lower extremity malignant melanoma with cutaneous metastatic lesions but no remote metastasis, treated with pembrolizumab and isolated limb perfusion. New lesions appeared despite a negative PET, treated with dabrafenib/trametinib, followed by an increase in active lesions, surgery and Ipi/Nivo. Unfortunately, he ran out of time and was unable to finish his presentation.

Female androgenetic alopecia

1. Laboratory tests and hormone profiling for FAGA. When to use.

Dr Cristina Serrano gave an excellent talk about what to look for and rule out in terms of hormonal signs in patients with FAGA.

There are two categories of female androgenetic alopecia, pre- and post-menopausal, which in turn can be sub-divided into cases with and without androgen increase. For alopecia where there are excessive androgen levels or increased sensitivity, the androgens are produced in the ovaries or adrenal glands and cause a shorter anagen phase, longer telogen phase, follicular miniaturisation and decreased hair pigmentation. In female androgenetic alopecia without androgen increase, the first things to rule out are elevated prolactin, hypothyroidism, elevated oestrogens or aromatase deficiency, since they cause non-androgenetic hormone changes. Therefore, an organic cause of FAGA may signal problems with the ovaries or adrenal cortex. It is important to consider the role of insulin in this type of alopecia, and levels can increase either directly due to a rise in IGF-1, or due to insulin-resistance in obese patients.

A hormone panel should only be requested in cases of SAHA, irregular menstruation, BMI>25 or masculinisation. Studies show that there is no need to measure haemoglobin, ferritin, vitamin B12 or thyroid function in patients with FAGA since it is not significantly correlated with a deficiency of these substances.

2. Latest and useful therapeutic approaches to female androgenetic alopecia

Dr Luis E. Sánchez Dueñas showed that follicular miniaturisation is caused by various factors, such as an increase in sensitivity to androgens, aromatase variants, metabolic syndrome, hyperandrogenism or polygenic inheritance.

He reviewed known treatments such as oral minoxidil at doses of up to 2.5mg/day, which has only minimal side effects. Intralesional minoxidil appears to increase the percentage of anagen hairs and cause less hair loss. He briefly commented on sublingual minoxidil 0.45–0.9mg/daily with side effects similar to the oral route. Antiandrogens such as oral dutasteride and finasteride also give very good results. A good clinical response has been achieved with topical finasteride up to 1%. Spironolactone 100–200mg/day can be used, especially if there is associated seborrhoea, or bicalutamide 25–50mg/day. The most novel treatment is intralesional bicalutamide 0.5% monthly.

However, treatment must be tailored to each patient and include a risk/benefit assessment.

3. Fibrosing alopecia in a pattern distribution: differential diagnosis

Dr Gisela D'Atri explained the huge diagnostic dilemma posed by scarring alopecia. Dermoscopy is important for all forms of alopecia, with or without pruritus. If there is any doubt it is essential to confirm the type of alopecia, which involves trichoscopy and a trained pathologist. Early diagnosis can prevent permanent hair loss.

Fibrosing alopecia in a pattern distribution is a distinctive and under-diagnosed form of scarring alopecia, classed as a variant of lichen planopilaris whose lesions affect only the typical area of AGA. There are none of the multifocal lesions typical of classic lichen planopilaris, and no receding hairline as seen with FFA. Trichoscopy reveals areas of anisotrichosis along with tubular scales, with or without erythema, and the disappearance of orifices. Treatment is local: minoxidil and topical steroids (or tacrolimus), antiandrogens (for their anti-inflammatory effect) and/or hydroxychloroquine. Cases of hair transplant have reported good initial growth but this is not synonymous with success because the hair tends to fall out after approximately four years.

4. Hair transplants for female androgenetic alopecia

Dr Francisco Le Voci described a number of factors to consider when performing a hair transplant in women. The anterior hairline has a distinctive shape that must be recognised. When inserting the follicles, they must be placed at a very acute angle, avoiding any vertical placement. It is important to obtain the correct angle in the central and lateral regions in order to maintain a natural appearance. The temporal region is not concave but convex. Patients must be given oral treatment post-transplant.

5. Cosmetic camouflage for female androgenetic alopecia

A presentation by Dr David A. Castillo described the different types of cosmetic camouflage for reducing the negative psychological effects of hair loss on women. There are temporary prosthetics (to cover the bald patch), fibres to thicken the hair, sprays and powders, including semi-permanent camouflage techniques such as micropigmentation. Solutions for eyebrow and eyelash loss include temporary methods such as false brows and lashes, or even semi-permanent solutions such as tattoos and microblading.

Alopecia is not inherently life-threatening, but it can have a severely detrimental effect on quality of life. It is a multifactorial condition, which therefore requires cross-disciplinary treatment. Camouflage techniques can improve self-esteem and quality of life for patients, but no single technique is 100% effective and treatment must be tailored to each patient. We have a duty to familiarise ourselves with the range of available options so we can best assess our patients.

Male androgenetic alopecia

1. MAGA. A historical and staging review (classification)

We were honoured to listen to presentations from three world leaders in trichology. The first was an overview of trichology from Dr Camacho. In 1942, Hamilton proposed the first staging system for androgenetic alopecia, which was modified ten years later resulting in the eight stages we still use today. But it was not until 1972 that Ebling and Rook described the five most useful stages for current daily practice. There are two types of androgenetic alopecia in men, male pattern (5 stages) and female pattern (3 stages). Male pattern baldness is linked to androgens and inheritance is polygenic, leading to cell death. But androgens are not the only determining factor, and we must not overlook the importance of surrounding inflammation as shown on histological samples by the presence of T-cells. The pathogenesis is associated with apoptosis, which in turn is linked to the three caspase pathways, especially caspase 3 located in the follicular isthmus. DHT bound to its receptor triggers apoptosis thanks to biological mechanisms (5-alpha reductase, DHT, prostaglandins), physiological mechanisms (tissue remodelling), and structural processes such as tension, the galea aponeurotica and muscle. The speaker mentioned the possible side effects of 5-alpha reductase inhibitors such as reports of gynecomastia, which tends to be one-sided and slightly painful, but is always reversible upon cessation of oral medication or simply a dose reduction.

2. New treatments for androgenetic alopecia

Dr Ferrando spoke about the latest therapies for male androgenetic alopecia such as mesotherapy with dutasteride at a dose of 0.05–0.1% in sterile or liposomal water. Good results for MAGA can be achieved with oral minoxidil 2–5mg/day. Outcomes can be further improved by combining LED lamps or PRP injections to improve scalp quality. In terms of hair nutricosmetics, we must ensure they include sulphur-containing amino acids, group B vitamins, vitamin D, trace elements and natural 5-alpha reductase inhibitors, many of which can be obtained from a balanced diet.

3. The latest in capillary microsurgery

Dr Asin described the surgical technique for hair transplants, differentiating between the FUT (transplantation) and FUE (extraction) techniques, noting that the latter can be performed with or without shaving the head. It is especially important to warn patients of the need to take oral or topical treatment. PRP can be used before, during and after hair transplant for better surgical outcomes. Patients must be followed up for at least a year in order to address any of the uncommon complications such as folliculitis secondary to epidermal damage and discomfort.

Report written by

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Controversies around melasma

Why is there need for special photoprotection?
Dr Maria Ivonne Arellano Mendoza

Dr Arellano Mendoza structured her talk around the idea that patients with melasma and post-inflammatory hyperpigmentation (PIH) require special photoprotection to prevent damage caused by ultraviolet radiation (UVR), but also, very particularly, the damage caused by the spectrum of visible light (VL) and infrared radiation (IR). She highlighted the fact that 50% of damage is caused by free radicals (FR) that are dose-dependent and related to the UVA, visible light, and IR spectrum, causing oxidative damage. Visible light (400-700 nm) has biological effects on the skin: erythema, pigmentation, skin damage, indirect damage to DNA by reactive oxygen species (not inducing thymine dimers), and premature ageing. UVA-1 and VL induce immediate, darker pigmentation lasting for up to two weeks without change. They also induce the production of proinflammatory cytokines and an increase in extracellular matrix metalloproteinases. With regard to sunscreens, she underscored the fact that organic sunscreens do not protect against visible light and that only optically opaque sunscreens are capable of absorbing it. To date, the two ingredients used as inorganic protectors are zinc oxide and titanium dioxide. The micronised forms of metal oxides not only disperse and reflect UVR, but also absorb it. As early as 1991, Dr Kaye and colleagues noted that the efficacy of these physical sunblocks increases further if iron oxide is added to them. Lyons et al., in a recent study, also looked at protection beyond UVR in a review of the efficacy of sunblocks with coloured pigments. Sunscreens with colour use different formulations and concentrations of iron oxide and titanium dioxide to provide protection against VL and are available in various tones to match all skin phototypes. As such, sunscreens with colour are beneficial for patients with photodermatosis induced by VL and patients with hyperpigmentation disorders, such as melasma and post-inflammatory hyperpigmentation. Dr Arellano Mendoza also pointed to another study involving 40 patients with melasma, for whom the researchers evaluated the safety and efficacy of an oral supplement with aqueous extract of the fern Polypodium leucotomos (PLE) in combination with treatment with hydroquinone 4% and SPF 50+ photoprotection. PLE has been shown to have antioxidant and photoprotective activity and has been used to treat various pigmentation disorders. The study in

question found that the aqueous PLE extract improves and significantly accelerates the results achieved with hydroquinone and sunscreen from nearly the first month of treatment, compared to the placebo, without showing significant side effects. Dr Arellano Mendoza concluded her talk by noting that while antioxidants like the aforementioned PLE are effective supplements, their effects pale in comparison to the protection provided by topical sunscreen with an oral antioxidant. An antioxidant supplement should never be used as a sole strategy for photoprotection. This fact should be stressed with patients, explaining to them that usage of the oral antioxidant is part of a two-pronged strategy alongside topical photoprotection.

Tranexamic acid: Which is the best route of administration?
Dr Elda Giansante

Dr Giansante spoke about tranexamic acid (TA) and its use in treatment of melasma, noting that usage of TA is not approved by the FDA for treatment of this pathology. She explained that TA is a synthetic analogue of lysine and that it is used as a haemostatic agent with anti-fibrinolytic action. Its mechanism of action is by inhibiting the binding of plasminogen with keratinocytes, blocking the pathway of arachidonic acid and prostaglandins, diminishing the activity of tyrosine and melanogenesis, thus reducing epidermal pigmentation. Another mechanism described would be the inhibition of vascular factors (i.e., VEGF and endothelin-1), which may also be involved in the physiopathogenesis of melasma. Dr Giansante noted that TA has been used for treatment of melasma through various routes of administration. In its oral form, the dose used in various studies ranges from 250 mg twice a day to 500 mg three times a day for periods of 3 to 6 months, generally with a good response. In controlled clinical studies, the dose of 250 mg every 12 hours was shown to be effective in terms of change in mMASI and MASI compared to a placebo. A clinical response was observed beginning from 6 to 8 weeks of treatment. Dr Giansante highlighted the fact that it is the duration of the therapy and not the higher dosage that makes the treatment regimen more effective. She also underscored the fact that the side effects of TA taken orally remain a concern, especially the potential risk of systemic thrombosis. Research studies have used concentrations of topical tranexamic acid of between 2% and 5%, in creams or solutions, for periods of 6 to 12 weeks.
Dr Giansante also mentioned the various combinations of topical TA with other active ingredients (e.g., retinoic acid, hydroquinone, kojic acid). Additionally, she talked about a publication regarding the topical usage of the combination of TA 2% + niacinamide in a cream to reduce facial hyperpigmentation. That combination was shown to be more effective than a placebo. However, she noted that more evidence is required to demonstrate which would be the best vehicle for enabling TA penetration to guarantee its efficacy. The intralesional route has shown efficacy with various application frequencies: weekly, biweekly, or monthly, whether in the form of mesotherapy at 5% or microneedling, with the latter being capable of increasing the efficacy of topical TA by as much as 50%. Dr Giansante mentioned that intralesional application has adverse effects such as pain and burning; for this reason, it requires local anaesthesia to reduce the pain that comes with the multiple injections. Among her conclusions, she noted that TA can be considered a possible treatment for melasma that is not responding to the usual treatments. Additionally, she noted that the evidence published in clinical trials and case studies has demonstrated it effectiveness while using various routes of administration; however, more robust statistical evidence is still needed. Dr Giansante also stressed the importance of choosing the right route of administration for each patient.

Laser versus IPL
Dr Mónica Ramos

Dr Ramos highlighted the fact that when it comes to treatment of melasma, topical agents should be the first line of treatment. However, in cases where there is little to no response, other therapies can be used, such as intense pulsed light (IPL) or certain types of laser, as they accelerate the elimination of melanin and optimise the topical treatment. Among the lasers and light therapies used for melasma, she mentioned: NDYQS 1064 nm (toning) with fractional picosecond technology; erbium

fractional laser: glass 1550 nm, 1540 nm; Tulio 1924 nm; intense pulsed light; fractional IPL; pulsed dye laser (PDL); diode 810 nm laser; and CO2 fractional laser. She noted that in a review of combined treatments for melasma, there were 286 articles on melasma with at least one technology, but the majority of studies did not follow patients in the long term. Additionally, it is difficult to compare between studies given that they use different methodologies.
With regard to NYQS laser at low fluences: nano/pico NYQS, Dr Ramos commented that the laser gives off high levels of energy in very short pulses and results in subcellular selective photothermolysis to destroy melanosomes without destroying melanocytes, thus producing less inflammation. The treatment is more effective for dermal melasma and is safe for higher phototypes. This technology could be combined with topical or oral depigmenting treatments, such as oral tranexamic acid, hydroquinone (triple combination cream - TCC), azelaic acid 20%, arbutin, or intralesional (IL) hyaluronic acid. It could also be combined with non-ablative technologies, such as IPL, PDL, or fractional radio-frequency treatment with microneedles.
With regard to non-ablative fractional laser, Dr Ramos stated that this treatment removes melanin through microchannels, induces neocollagenesis, and is used for resistant forms of melasma. It can also be combined with various topical treatments.
With regard to pulsed dye laser, she said that it is used for phototypes I-III, the vascular component of melasma, and not with purpuric doses. It may also be combined with topical and non-ablative treatments.
Regarding IPL, Dr Ramos said that the recommendations for usage of IPL are for moderate to severe melasma, phototypes I-II, and epidermal melasma. Generally, the treatment is applied in 2-5 sessions with an interval of 4-8 weeks between each session, producing good results. IPL can also be used on dermal melasma, but with less satisfactory results.
Within the category of laser therapy, she noted that 1064-nm QS-Nd:YAG laser has been used at its toning setting, with both nanosecond and picosecond technology, as well as certain non-ablative fractional lasers, with good results. However, the risk of recurrence and hyperpigmentation have limited the use of laser therapy. Another option is laser-assisted drug delivery (e.g., hydroquinone 4% or tranexamic acid). Dr Ramos also noted that it is important to emphasise that it is not recommended that IPL or laser therapy be used as a monotherapy, but rather as adjuvant therapy. To conclude, she highlighted the idea that with these technologies, there is a sort of “rule of the 3 Ls” to be followed: low fluences, less passes, less ablative options.

Acne: New developments in the 21st century

Acne and diet

Dr María Isabel Arias Gómez

Dr Arias Gómez gave a presentation about the Western diet and its association with hyperactivity of the mTOR complex. This new knowledge provides a rational basis for additional dietary advice for acne management, consisting of a reduction in the consumption of carbohydrates with a high glycaemic index, insulinotropic carbohydrates, and protein from dairy products. With regard to the relationship between chocolate and acne, she underscored the fact that it is not the cacao that exacerbates acne, but rather the fact that chocolate contains milk, sugar, and saturated fats. Excessive alcohol consumption can exacerbate acne, as can foods and supplements containing vitamin B12. Additionally, Dr Arias Gómez mentioned the important benefits of foods rich in omega-3 fatty acids, zinc, probiotics, polyphenols, and vitamins A and D. She highlighted the importance of recommending dietary habits that reduce the insulinotropic impact of the Western diet, which is not only linked to acne, but also to other pathologies related to the mTORC1 pathway, such as obesity, insulin resistance, diabetes, and neurodegenerative diseases. Patients should limit fatty foods (e.g., fried foods), fast food, foods with a high glycaemic index, insulinotropic grains, dairy products (replace

with organic dairy products that contain lower levels of hormones), chocolate, and alcohol. Care providers should recommend a diet rich in omega-3 fatty acids, fruits, vegetables, antioxidants, probiotics, and green tea.
To conclude, Dr Arias Gómez quoted Hippocrates: "Let food be your medicine, and medicine be your food," and she stated in her own words: "Food will make or break our bodies; as such, we can conclude that 'our skin is what we eat.'"

Cutaneous microbiome, a new target in the treatment of acne
Dr Brigitte Dréno

Dr Dréno established, from the very beginning of her talk, the difference between the resident microbiome ("normal" commensal skin microorganisms in homeostasis with the host) and the transitory microbiome, which may include pathogens from the environment that temporarily reside on the skin. Within the resident microbiome, with acne, you find C. acnes and S. epidermidis; in the transitory microbiome, you find S. aureus. Dr Dréno emphasised that it is the quality and amount of sebum that influence the profile of the skin microbiome. The second point that she discussed is that dysbiosis in acne is not synonymous with proliferation of C. acnes; rather, dysbiosis in acne is related to the loss of diversity in the phylotypes of C. acnes, with a predominance of the phylotype A1A, both on the face and on the back. This loss of diversity is what activates the innate immune system, resulting in the secretion of inflammatory cytokines. As such, Dr Dréno points out, restoring said diversity in the skin microbiome helps suppress the inflammatory response through a down-regulation of the innate immune system.
Dysbiosis in acne is not limited to C. acnes, given that both C. acnes and S. epidermidis interact in such a way that C. acnes inhibits the development of S. epidermidis and S. pyogenes, maintaining an acidic pH in the pilosebaceous unit and mediating the secretion of propionic acid. Meanwhile, S. epidermidis inhibits the proliferation of C. acnes, stimulating the fermentation of glycerol produced naturally by the skin and inducing the proliferation of succinic acid.
Finally, Dr Dréno warned about how treatment with systemic isotretinoin without appropriate primary care of the skin may cause dysbiosis, given how it alters the skin microbiome. For this reason, she said that it is crucial for such patients to always include in their treatment facial cleansing using a cleanser with an acidic pH, as well as skin hydration to restore the skin barrier and microbiome. From there, she offered a question and answer: "How is it possible to induce dysbiosis by treating acne? By not adequately discussing with the patient the skincare routine that they require." She went on to explain that intense cleansing of the skin, excessive friction during cleansing, and the dryness caused by medications to treat acne disrupt the skin barrier, equivalent to a Koebner phenomenon in seborrheic skin, with excessive loss of antimicrobial peptides and activation of the innate immune system. As such, she recommends controlling this with proper cleansing, moisturising, and make-up, which she cited as "success factors" for the management of acne. Additionally, these facts suggest the possible development of future treatments for acne based on the modulation of skin microbiota, such as anti-inflammatory "eco-biological" treatments: vaccination, bacteriophages, pro- and pre-biotics, in order to, firstly, restore the diversity of the bacterial family and, secondly, suppress colonisation for the skin by the Enterococcaceae family, which can play a role in the inflammatory response and exacerbation.

Light and laser treatments for the management of acne
Dr José Luis López-Estebaranz

Dr López-Estebaranz discussed the value of treatment of active acne with lasers or light sources. Firstly, he mentioned photodynamic therapy (PDT), for which he highlighted the proposed mechanisms of action: the natural production by P. acnes of coproporphyrin III and protoporphyrin IX, which act by producing reactive oxygen species, destroying the bacteria; the antibacterial and anti-inflammatory effect of UVA radiation and blue light; an immunomodulating effect which reduces the number of Langerhans cells and increases the expression of TLR2; and also, PDT may target the

sebaceous gland. Among possible sensitising agents, he mentioned aminolevulinic acid (ALA), methyl aminolevulinate (MAL), indoleacetic acid (IAA), and chlorophyll. As for data on efficacy, all protocols demonstrated efficacy of around 60% in inflammatory acne. ALA + red light has also been shown to have an effect on non-inflammatory lesions and sebum secretion. ALA + IPL and IAA + green light significantly decrease sebum secretion. Dr López-Estebaranz also mentioned possible adverse effects, the most common being pain (ALA > MAL > IAA > chlorophyll), followed by others such as erythema, burning sensation, oedema, and acute pustular eruption. Additionally, there have been reports of post-inflammatory hyperpigmentation, which can last for several months and is most likely to appear with multiple sessions, higher concentrations of sensitising agents, and higher phototypes. Then, Dr López-Estebaranz talked about fluorescent light therapy as a new light therapy that differs from photodynamic therapy, which acts through endogenous chromophores (cytochrome C oxidase, opsins) as photoacceptors, producing a new form of photobiomodulation with high rates of response and without serious adverse effects.
Another target for these therapies for active acne is the sebaceous glands, for which he mentioned treatment with erbium:glass 1550 nm, 1540 nm, Nd: YAG 1064 nm, 1450 diode laser, selective transfollicular penetration with optical particles (gold nanoparticles) + 800-nm diode laser. For these treatments, he underscored the fact that it is necessary to cool down the epidermis so as not to cause necrosis. He also mentioned that to date, there are only two pieces of equipment approved by the FDA for this purpose.
Finally, among his conclusions, Dr López-Estebaranz emphasised that laser therapies are more effective in combination with medical therapies and often times adjuvant therapies to those. He also noted that light therapies in general are gradually becoming part of the therapeutic arsenal for treatment of acne.

Cosmeceuticals in Dermatology

Usefulness of Cosmeceuticals in Acne and Rosacea
Dr. Raquel Novo Lens

In her presentation, Dr. Raquel Novo Lens made the following distinction between a cosmetic product and a cosmeceutical.

Cosmetic product: any substance or mixture intended to be placed in contact with external parts of the human body (epidermis, hair system, nails, lips, and external genitalia) with the exclusive or primary purpose of cleaning, perfuming, protecting, or keeping them in good condition.

Cosmeceutical: a product with a scientific basis intentionally designed for topical (external) use. These are effective products that achieve a desired effect meeting physical, chemical, and therapeutic standards.

These products offer a benefit for each condition:
- In cases of acne: sebum regulator, keratolytic, anti-inflammatory, depigmenting, and photoprotective action
- In cases of rosacea: anti-angiogenic, anti-parasitic, anti-inflammatory, anti-ageing, and photoprotective action

She then proceeded to highlight some important features and tips to be kept in mind about the most commonly used cosmeceuticals. The following table outlines some of those mentioned by Dr. Novo Lens.

RETINOL

Keratinocyte repair
Natural moisture recovery
Increased epidermal thickness
Increased angiogenesis
Activation of collagen and elastin production
Concentration-dependent effect (its effect decreases when mixed with moisturisers)
Photo-unstable
It is also used throughout the summer (the skin is already retinised)
Used for both acne and rosacea
Even better results are achieved when used in combination with oral isotretinoin!

NIACINAMIDE

It penetrates the stratum corneum
Anti-inflammatory and antioxidant action
4% sebum regulation (it inhibits protein glycation)
It supports collagen and elastin production
Flushing effect (it causes vasodilatation)
High tolerability
Do not mix with vitamin C or acids (salicylic, glycolic, etc.)

ACIDS

Salicylic acid: keratolytic and anti-inflammatory action
Glycolic acid: exfoliating (pH <3.83) or moisturising (pH >3.83) properties
Lactobionic acid or gluconolactone: antioxidant and less irritating anti-inflammatory action
Azelaic acid (15%): anti-inflammatory, antibacterial, keratolytic, depigmenting, and anti-seborrhoeic action (allowed in pregnant women)

VASOACTIVE SUBSTANCES

Microcirculation activators and decongestants: horse chestnut, sweet clover, common grape vine, etc.
Inhibition of VEGF synthesis: green tea, Ginkgo biloba, or genistein

She also proposed a basic skin care regimen based on the following concepts: cleanse, exfoliate, treat, moisturise/protect, transform, and pamper, and offered the following example of an anti-ageing regimen:

Action
Clean
Exfoliate
Treat
Moisturise/protect
Transform
Pamper

Presentation
Gel/foam
Fine/coarse scrub
Serum
Oil-free emulsion

Emulsion
Mask

Active ingredient
Salicylic or glycolic acid
Microspheres
Niacinamide
SPF+
Retinol
Salicylic acid

Frequency
1-2 times/day
1-2 times/week
1 time/day
1 time/day
1 time/night
2 times/week

Finally, she highlighted the need to bear in mind that patients also seek daily skin care routines for their particular skin type or condition and that, professionally speaking, this is as much our responsibility as prescribing a medical treatment in order to prevent the patient from receiving recommendations from media advertisements, websites, or non-physicians, and, therefore, from running the risk of using inappropriate products for their specific skin type or condition.
Considering the above, she stressed that we must be aware of and work with molecules that will help us "complete" our prescription and, at the same time, gain the loyalty of our patients, who will not only consider us as a specialist who treats diseased skin, but also one responsible for helping them maintain their skin in a good state of health.

Usefulness of Cosmeceuticals for Nails
Dr. María Ivonne Arellano Mendoza

Dr. Arellano began her lecture by adding more characteristics to the definition of cosmeceuticals, including:

- That they constitute an interphase between a pure cosmetic product and a drug
- That they transition between prescription and over-the-counter products
- That they are used to treat or modify skin disorders

Regarding the effects sought when using or recommending a cosmeceutical for the nails, she highlighted the following:

- Nail beautification
- Hardening or repairing brittle or fragile nails
- Camouflage of surface and/or colour irregularities
- Nail rejuvenation with ridges or bands

The types of products used to beautify or repair nails are:

- Nail varnish
- Nail strengthener or repairer
- Gel polish (LED or UV)
- Sculptured nails
- Artificial nails

She claimed that, albeit scarce, there is increasingly more clinical evidence beginning to appear, as well as some publications and works on products used for nail repair, which are assessed through the implementation of instrumental methods (dermoscopy or confocal microscopy) and using measurable variables in target populations.

Usefulness of Cosmeceuticals in Photoprotection
Dr. Denise Steiner

Dr. Steiner spoke about the effects and consequences of decreased local and systemic immunity as a result of the action of UVA and UVB radiation:

- Phototoxic reactions
- Photoageing
- Cataracts
- Burns
- Tanning
- Skin carcinogenesis

She stated that 75% of photodamage occurs before the age of 25 and, therefore, that it is essential to avoid specific focalisation of UV radiation on targets such as:

- DNA
- Melanin
- Proteins
- Blood vessels
- Fibroblasts

She explained the cascade of UVA-induced photodamage events resulting in photoageing:

- Release of free radicals
- Release of IL1/IL10
- Release of TNF
- Activation of matrix metalloproteinases (MMP-1)
- Collagen degradation
- Photoageing

Concerning sun block, she recommended:

- Using sunblock with an SPF of at least 30
- A UVA/UVB proportion and a PPD/SPF ratio of 1/3: SPF = 30, PPD = 10
- Inorganic filters (titanium dioxide, iron oxide, and zinc oxide) have a high safety level and are well indicated in pregnancy
- She prefers non-micronised filters with a lower risk of systemic absorption

She also spoke about smart protection: protection against oxidation is around 55% and UVA protection is better with respect to its antioxidant effect, although broad-spectrum filters offer greater UVB protection. She then listed a series of antioxidant cosmeceuticals, including vitamins E and C, idebenone, green tea, lipoic acid, pycnogenol, caffeic acid, and polyphenolic compounds.

Green tea

- An antioxidant polyphenol
- It contains epigallocatechin gallate (EGCG)
- It reverses lipid peroxidation and the immunosuppressive effects of UV rays
- It prevents the generation of nitric oxide, hydroxyl radicals, and singlet oxygen

Resveratrol
- An antioxidant modulator of sirtuin activity
- Anti-inflammatory and anti-proliferative action
- Chemopreventive and cytostatic action
- UVB protection

Alpha-lipoic acid
- Water- and fat-soluble
- It protects the cell membrane, cytoplasm, and nucleus
- It regenerates vitamin C, vitamin E, and glutathione
- Anti-inflammatory and anti-irritant action
- Good for oedema and lower eyelid bags
- Concentration: 0.05%–1%

Peptides
- Bonded amino acids that mimic molecular action
- Signalling, transport, and neurotransmission
- Argireline and hexapeptide: inhibition of neurotransmitter release
- Matrixyl pentapeptide: induction of collagen formation

Cosmeceuticals in Rejuvenation
Dr. Maribel Polanco

Regarding the global cosmeceuticals market, Dr. Polanco explained that the desire to look better, younger, and healthier has resulted in the growth of this market and the search for new technologies to produce more effective and safer cosmeceuticals, such as:
- Nanotechnology
- Stabilisers
- Special excipients
- Improved skin barrier penetration

Thus, products that are minimally irritating, cosmetically pleasing in terms of their texture, colour, and smell, and with visible results are being sought.

Concerning penetration of these products through the stratum corneum (SC) layer of the epidermis, Dr. Polanco outlined that cosmeceuticals have to reach the deepest layers of the skin to exert their action in the target sites and that the natural skin barrier hinders such penetration, which is why scientists are currently researching new strategies to overcome this natural barrier and seek new vehicles to reach the therapeutic targets, all of which leads to a need for further research and development. She stated that SC is the first obstacle for these products, as ingredients with a molecular weight of over 1000 kDa are unlikely to penetrate a healthy SC.

With respect to the cosmeceuticals that are most commonly used to prevent photoageing, she detailed a few characteristics of some of them:

RETINOL

Certain studies have proven that 0.0025% is the most appropriate concentration to achieve proper percutaneous penetration and subsequent metabolisation to retinoic acid

ANTIOXIDANTS

Proven efficacy in inhibiting cell damage
Decreased concentration with skin ageing
Good protection against free radicals

VITAMIN C

Antioxidant action
MMP-1 inhibitor
Skin lightening effect by inhibiting the oxidative process during melanin synthesis

NIACINAMIDE

Potential inhibitor of the Maillard reaction
It improves the epidermal barrier
It reduces hyperpigmentation
It improves skin elasticity
It reduces fine lines
It repairs solar erythema

As for the safety profile of cosmeceuticals during pregnancy, she provides the following recommendations:

- DO NOT USE hydroquinone
- Azelaic acid: NEVER use during the 1st trimester and only use on small areas of skin
- Arbutin and kojic acid: both have a low systemic absorption, with no reports of foetal risk in animal models; however, as there are no data available concerning their use in humans, there is no recommendation available on their use during pregnancy
- Retinoids: they have a low systemic absorption, but, considering that there are reports of congenital malformations related to their use in animal and human models, they should NOT BE USED during pregnancy
- Alpha hydroxy acids: there are no reports of teratogenicity in animal models but no data available concerning their use in humans Category B (FDA)
- Photoprotection: give preference to physical sun block. Do not use chemical sun block during pregnancy

Usefulness of Cosmeceuticals in Alopecia
Dr. Marisa Tirado Godoy

The first matter addressed by this doctor was hair cosmeceuticals: collagen-enhancing growth factors, caffeine, follistatin, amino acids, biotin, zinc, saw palmetto extract, etc.
In the context of androgenic alopecia treatment, she classified them according to the following:

- Prolongation of the anagen phase: growth factors
- DHT production decrease: saw palmetto extract and zinc
- Blood flow improvement: mugwort and caffeine
- Epithelial sheath quality improvement: vitamins and trace elements
- Nutrient supply: keratin and amino acids

Growth factors

EGF
IGF-1
VEGF
HGH

TRX
Follistatin

Cell proliferation activation: fortifying effect
Increased cell longevity: detoxification and increase in cytokeratins
Anagen phase stimulation
Antioxidant
Cell proliferation activation: fortifying effect
Anagen phase unblocking and antagonist of BMP-2, a protein that regulates cell differentiation and apoptosis

Caffeine

- Cell proliferation promotion
- Counteracting of 5-alpha-DHT miniaturisation
- Increased microcirculation

Amino acids
They help reduce the natural loss of keratin amino acids, thus improving the hair fibre
Saw palmetto extract: it inhibits 5-alpha-reductase activity
Taurine: it protects the hair bulb by avoiding its deformation and inhibiting 5-alpha-reductase activity. It has also been described to have an anti-hair loss and sebum regulating effect
Protein hydrolysates: bioactive peptides that strengthen and repair the hair fibre. Thanks to nanotechnology, they can deeply penetrate and repair the hair fibre
Panthenol: protective action, maintaining hydration and locking in moisture
Silk proteins: high amino acid content providing hair protection and shine
Argan oil: high in oleic and linoleic acids that reduce keratin loss
Biotin: a cofactor in keratin synthesis
Silybum marianum: antioxidant and reparative action
With regard to ageing hair, Dr. Tirado Godoy categorised cosmeceuticals according to their target site and action:

HAIR FIBRE

- Strengthening action: amino acids
- Protection against external agents: Tephrosia purpurea (antioxidant)
- Moisturising action: panthenol
- Split ends: silk proteins

SCALP

- Hair growth promotion: growth factors
- Microcirculation promotion: caffeine

New developments in clinical dermatology

Dr. Yolanda Gilaberte

1. Infections

Monkeypox
Transmission:
· Direct contact or consumption of primates or rodents

· Person-to-person: respiratory droplets, bodily fluids, contaminated objects, mother-to-child, sexual contact

Handling and management:

What do we need to put on?

- A face mask because it is a virus with transmission through the air
- Contact isolation

Sample-taking

- Blisters, exudate, or scabs PCR
- If there is only erythema and papules: PCR test sample from blood or pharynx

Also…

- Contact and respiratory isolation of the patient
- Symptomatic treatment for the skin lesions
- Cidofovir and Tecovirimat for serious cases/respiratory complications
- The smallpox vaccine protects against monkeypox

Report cases to public health authorities

Cutaneous manifestations of COVID-19

Cutaneous manifestation
Pseudo-chilblain lesions
Eruption of blisters
Urticarial lesions
Maculopapular rash
Livedo or necrosis
Petechiae/purpuric rash
Erythema multiforme

Location
Hands and feet
Trunk
Trunk, legs
Trunk
Legs
Legs
Extremities

Symptoms
Itching, pain
Itching (mild)
Itching
Itching
Pain, itching
–
–

Prevalence (%)
19.72

12.5
16.37
22.8
6.11
1.58
6.3

- Skin reactions following vaccination against SARS-CoV-2

Dr Gilaberte shared results to appear in the upcoming publication Català *A., et al. Br J Dermatol. 2022 Jan;186(1):142-152.*

- Local reactions at the injection site: Commonly known as “COVID arm”: erythematous or swollen patches at the injection site; more than half of cases appear 4 or more days after vaccination and it has been seen more frequently with the Moderna vaccine
- Hives and/or angioedema: urticarial lesions, mainly on the trunk or generalised, usually appearing over 24 hours after vaccination
- Morbilliform rash: Maculopapular erythematous rash, most often generalised, affecting the trunk and extremities
- Papulovesicular or pseudovesicular eruption: similar to pityriasis rosea
- Additionally, she noted that doctors have observed the reactivation of the varicella-zoster virus (VZV) and herpes virus (HSV), more often with the Pfizer vaccine.

Syphilis

Dr Gilaberte presented a case of a 38-year-old woman who was admitted to a neurology ward for sudden loss of vision in one eye. She also presented painful ulcers on the tongue that had been developing for 2 months. The blood test for syphilis came back positive and a PCR test showed the bacterium responsible to be Treponema pallidum. She was treated with penicillin and cured.
Along with this case study, Dr Gilaberte pointed to the oral forms of secondary syphilis (SS) and presented data from a publication by the French National Reference Centre for Syphilis in Paris (Lampros A, Seta V, Gerhardt P, Isnard C, Husson C, Dupin N. Oral forms of secondary syphilis: An illustration of the pitfalls set by the great imitator. J Am Acad Dermatol. 2021 Feb;84(2):348-353)
In the review in question, out of 206 patients with SS, 38% presented oral manifestations, both isolated and non-isolated, such as mucosal patches on the tongue or ulcerated lesions. The researchers emphasised the importance of considering this diagnosis when isolated oral lesions appear.

HPV in family members and fomites from patients with warts

This presentation referred to data included in the following publication: *Ghorzang E, de Koning MNC, Bouwes Bavinck JN, Gussekloo J, Quint KD, Goeman JJ, Feltkamp MCW, Bruggink SC, Eekhof JAH. HPV type-specific distribution among family members and linen in households of cutaneous wart patients. J Eur Acad Dermatol Venereol. 2022 Jan;36(1):119-125.*
Key messages:

- Dish cloths and bath towels or rugs can be important reservoirs for transmission of HPV1 and HPV2
- The virus remains viable on surfaces for 5 to 7 days
- With high temperatures, there is partial activation at > 56°C and total inactivation at > 100°C
- Especially consider these facts in cases of immunosuppressed individuals living in the same household

2. New diseases

VEXAS: Somatic Mutations in UBA1 and Severe Adult-Onset Autoinflammatory Disease.

(Beck, D., et al. N Engl J Med 2020; 383:2628-2638)
V Vacuoles
E E1 enzyme
X X-linked
A Auto-inflammatory
S Somatic

Skin lesions
- Pustulosis
- Panniculitis at injection sites
- Neutrophilic dermatosis
- Nodular phlebitis

Fever
Haematological disease
Pulmonary infiltrates
Affliction of the eye
- Periorbital inflammation

Recurring chondritis
Deep vein thrombosis
Adenopathy
Arthralgia

83.6%

64.7%
50%
50%
40%

36%
35.5%
34.5%
28.4%

Suspect VEXAS in cases of:

Bone marrow biopsy to look for vacuoles
UBA1 genetic test

3. New developments in autoimmune blistering diseases

Dr Gilaberte presented evidence from 2 publications:

Pemphigus vulgaris and HSV
Baum S et al, Acta Derm Venereol. 2022 May 4;102: adv00703.
- Perform PCR testing for HSV in patients with pemphigus, then treat the positive patients
- Consider preventive treatment for serious cases

Bullous pemphigoid and diversity of phenotypes
Guerrois F et al. J Am Acad Dermatol. 2022 Apr 26: S0190-9622(22)00695-8

PHENOTYPE I
PHENOTYPE II
PHENOTYPE III

56%: older, few blisters + anti-BP230
32%: more than 100 blisters + anti-BP180
12%: younger, possibility of mucosal involvement (including the epiglottis for 40%) + anti-BP180
Difficult to treat

Omalizumab for the treatment of bullous pemphigoid
Dr Gilaberte presented a systematic review of 22 studies, including 56 patients with disease resisting treatment for a duration of over 1 year. The level of response was total in 55% of cases, partial in 32%, and absent in 33%. In 33% of cases, patients were able to discontinue or reduce treatment with corticosteroids and it was very well tolerated.

Treatments for systemic autoimmune diseases

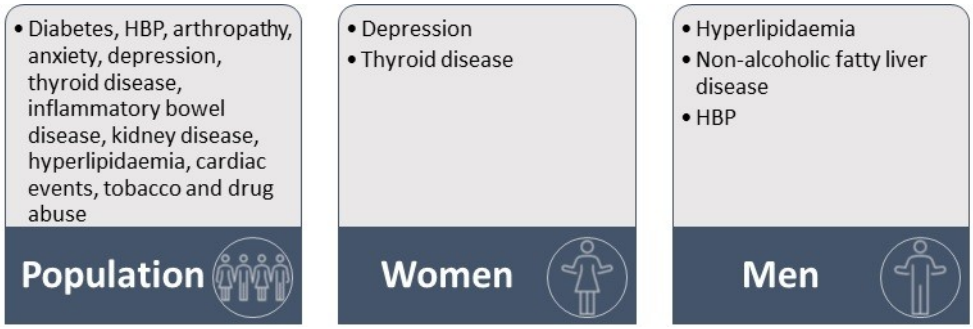
Dermatomyositis	Scleroderma	Lupus
• Rituximab, Tofacitinib • other JAK inhibitors • Belimumab, Apremilast, and Abatacept • Ustekinumab, Anakinra, Toculizumab • Not anti-TNFα	• Reduce sclerosis: Rituximab, Tofacitinib, and Belimumab • Improve Raynaud syndrome and finger ulcers: Iloprost, Bocentan, and Cilostazol	• Belimumab • Ustekinumab • Not Rituximab

New classification for elastolytic giant cell granuloma
Qian YT, Liu JW, Liu W, Chen T, Tan Y, Ma DL. A Retrospective Study of 105 Patients with Elastolytic Giant Cell Granuloma and a Proposal for a New Clinical Classification. Acta Derm Venereol. 2022 Mar 28;102:adv00684.
Retrospective study of 105 cases.
- Histological diagnosis: Elastolysis, elastophagocytosis, and infiltrate of multinucleated giant cells
- Clinical classification: Annular, papular, mixed, giant, generalised
- Histological classification: Giant cells, necrobiotic, histiocytic, sarcoidal, and mixed patterns
- Comorbidity most frequently observed: Diabetes
- Treatment: Low-dose corticosteroids

5. Comorbidities

With atopic dermatitis (AD)

With hidradenitis suppurativa



6. Skin adverse effects (AE) of drugs

CHECKPOINT INHIBITORS (CPI) (drugs that inhibit immune checkpoints)
Dr Gilaberte presented data from the following publication: *Carpena J et al. Actas Dermo-Sifiliográficas Volume 113, Issue 4, April 2022, Pages 376-387*

- The combination of Ipilimumab + anti-PD-1/PD-L1 (pembrolizumab) produced the highest rates of skin toxicity of any degree.
- More common with melanoma than with other tumours
- The most common AEs are exanthems, pruritus, vitiligo, and alopecia
- Treatment: corticosteroids, Prednisone 10 mg/day

Do MH et al. J Am Acad Dermatol. 2021 Dec;85(6):1528-1536
The study is a retrospective analysis of 2,061 patients
Infections in patients being treated with CPIs:

Bacterial: cellulitis, abscesses, paronychias
Fungal: Tinea pedis
Viral: herpes
Polymicrobial

36.2%
34.5%
21%
8%

Monotherapy with anti-CTLA-4 presented the greatest risk of infection

Adverse effects of anti-glaucoma eye drops

The study presented evidence of adverse effects: of 1,128 studies initially identified, 123 were actually analysed: Patchinsky A, et al. J Eur Acad Dermatol Venereol. 2022 May;36(5):661-670.
The most common anti-glaucoma treatments are analogues of prostaglandins and adverse effects appear between 2 months and 1 year. Systemic AEs are in question and the researchers recommend considering the role of preservatives like benzalkonium chloride.

LOCAL AE

- Contact dermatitis
- Hyperpigmentation
- Periorbitopathy from prostaglandin analogues
- Mucous membrane pemphigoid
- Poliosis
- Hypertrichosis
- Skin hyper- or hypo-pigmentation

DISTANT AE

1. Psoriasis
2. Excessive sweating
3. Lichen planus
4. Alopecia
5. Toxic epidermal necrolysis

7. New treatments

JAK inhibitors

Dr Gilaberte recommends these two publications for understanding the JAK-STAT signalling pathway and its role in different immune-mediated skin diseases.

- Part 1: *Garcia Melendo C et al. Actas Dermo-Sifiliográficas (English Edition), Volume 112, Issue 6, June 2021, Pages 503-515*
- Part 2: *Garcia Melendo C et al. Actas Dermo-Sifiliográficas (English Edition), Volume 112, Issue 7, July–August 2021, Pages 586-600*

She noted that the FDA has approved the indication of Baricitinib for alopecia areata (AA), the evidence for which was presented in the following article: King B et al. N Engl J Med 2022; 386:1687-1699
Dr Gilaberte presented the evidence from these two randomised, placebo-controlled, phase 3 trials, which included adults with severe AA scored at 50 or higher on the Severity of Alopecia Tool (SALT) (range, 0 [no scalp hair loss] to 100 [complete scalp hair loss]). The trials enrolled 654 patients and 546 patients respectively. SALT 50-100.
Primary outcome: a SALT score of 20 or less at week 36.

Dose

- Baricitinib 4 mg/day
- Baricitinib 2 mg/day
- Placebo

Results

- 38.8% and 35.9% with 4 mg/day
- 22.8% and 19.4% with 2 mg/day
- 6.2% and 3.3% with the placebo

There was also improvement in eyebrows and eyelashes.

Adverse effects: acne, elevation of CPK, LDL, and HDL
She also shared the following review of Janus kinase and tyrosine kinase inhibitors, which describes the clinical trials in progress, the usage of the drugs, their safety profile, and future applications:

- *Shalabi MMK, Garcia B, Coleman K, Siller A Jr, Miller AC, Tyring SK. Janus Kinase and Tyrosine Kinase Inhibitors in Dermatology: A Review of Their Utilization, Safety Profile and Future Applications. Skin Therapy Lett. 2022 Jan;27(1):4-9.*

DUPILUMAB for prurigo nodularis
Dr Gilaberte shared the results of a systematic review that covered 25 studies with 153 patients. The studies demonstrated: improvement for 89% of patients with chronic prurigo and for 100% of patients with chronic idiopathic pruritus

Scabies
Spinosad is a natural insecticide derived from the fermentation by an actinobacterium found in soil. In 2 controlled clinical studies to evaluate the efficacy of Spinosad 0.9% in a topical suspension, with 1 single application for 200 patients over 4 years old, researchers observed full recovery on day 28 for 78.1% versus 39.4% in the control group, without AEs

8. Habits

- A high-salt diet increases the risk of AD: In a study on the association between salt consumption and AD, involving 13,183 children and adults, it was found that an increase of 1 g in salt consumption increases the risk of AD (adjusted OR 1.22, 95CI: 1.02-1.45)
- Relationship between tobacco and AD: TREAT German atopic dermatitis registry. 921 patients, 908 smokers, mean age: 41.9: Fewer weeks with good control of the disease, more pruritis, higher IgE levels, earlier age of diagnosis with bronchial asthma

Report written by

Dr. Adrián ALEGRE SANCHEZ

Dermatologist, Spain

Disputes in laser

Both the technique and the parameters of laser treatments in paediatric patients must be adjusted to take into account the specific needs of these patients. Dr Héctor Cáceres does not recall that there are risks associated with the frequent repetition of general anaesthetic in patients aged under 2 years old. Short sedations and treatments without general anaesthetic are therefore recommended during this vital stage. To treat capillary malformations, most publications are with pulsed dye laser, however less expensive alternatives can also be used: 585 nm solid-state yellow laser diode, pulsed light with vascular filters, Nd:YAG laser, etc.

The user of lasers to deliver drugs through the skin is a very interesting treatment option of hypertrophic scars. Dr Adrián Alegre has told us that the best parameters for use in this technique include the ablative fractional CO2 laser with short pulse duration, low density (around 5%) and high fluence to sufficiently penetrate the scars. This technique can be used to deliver drugs like triamcinolone acetonide or 5-fluorouracil, which help flatten out these lumpy scars. Alternatives include bimatoprost for hypopigmented scars or hydroquinone in hyperpigmented scars.

Dr Kleber Ollague presented his experience in the treatment of pigmented lesions. It is important to take into account that in dark skin with melasma, aggressive parameters should be avoided, looking for lightening endpoints. The laser toning technique should be used with a low-fluence 1064 nm q-switched-mode laser and large spot size. The doctor also recalls the need to treat the vascular component using 0.3 ms pulsed laser. In the case of bodily pigmentation in folds, like the armpits or groin, low-fluence treatment is recommended with a large number of shots (at least 500-1000 shots per zone) to successfully eliminate the pigment.

Laser treatment of vascular lesions

Dr Pablo Boixeda has reminded us of the importance of suitable eye protection for both the patient and doctor alike, including for infrared lasers. He also reminded us of the key role played by the treatment endpoints, to know whether or not we have achieved the desired effect. For poikiloderma, the doctor recommends treatment with IPL or vascular laser but with large spot sizes. It should be recalled that there is a higher risk of atrophic scarring with lasers with a long wavelength, like the Nd:YAG, which should be avoided in areas like the nasal wings. As risk endpoint, the doctor reminds us of the lightening or greying of the lesion (rather than purpura or clotting, which would be a normal result).

Vascular laser treatment of rosacea was addressed by Dr Aida Paola Rojas Ramírez. She reminds us that rosacea originates from multiple factors with immunological alterations, alterations of the microbiota, vascular deregulation, etc. We will need to address all these factors fully. The newest therapeutic weapon recommended is diluted botulinum toxin for rosacea, which is the dominant approach in flushing.

Dr Agustina Vila's presentation clarified the importance of performing a correct differential diagnosis of the vascular lesions, as they can include anything from rosacea to vascular malformations, demodicosis, steroid dermatitis, etc. It should also be considered that rosacea is often accompanied by numerous comorbidities that we also need to assess in our patients. As regards hemangioma, fold areas are at higher risk in particular of ulceration and such ulceration can be treated by vascular laser. At present, propranolol is the treatment of choice where therapeutically indicated. Post-treatment neoangiogenesis can be treated with antiangiogenic drugs like timolol or imiquimod. Another key point to ask patients being treated with vascular laser is anticoagulants: in these cases, the result can be worse hence less aggressive parameters need to be used.

State-of-the-art in peels

During the peeling session, Dr Adrián Alegre reminded us of the usefulness of peeling in acne scars. Salicylic peeling is the best option for active acne with its comedolytic action. However, trichloroacetic at 20-35% or even stronger is the best option in scars, due to the greater depth. The TCA-CROSS technique has proven to be superior to other treatment options in ice-pick type scars.

Despite the growing popularity of lasers, peels continue to be the 4th most popular medical-aesthetic treatment in the ranking of non-invasive procedures, although by far the majority of patients are women. Peels are an excellent option for men as they tend to seek practical treatment with rapid recovery and various indications within a single procedure. The doctor recommends starting treatment with peels in men progressively, from superficial to medium depth. It is also important to insist more

on post-treatment care as they tend to be more likely to ignore these recommendations. It is also important to avoid treating them in manner requiring very long recovery times or which they see as excessive, as this is something that more greatly concerns men.

Dr Ricardo Galván recommends always taking a full medical history before starting treatment with peels, including photodamage scales, greasy skin, wrinkles, etc. He also reminded us of the usefulness of assessing pigmentation in the palm of patients' hands so as to have an idea of the risk of post-inflammatory pigmentation.

Dr Carlos Wambier recounted his extensive experience with deep peels. The problem of deep peels is that the learning curve is slower. According to a survey he has run, deep peels continue to offer the most spectacular results in terms of rejuvenation but have the longest recovery times of all the options available. To find out whether or not we need to monitor after phenol peels, he recommends assessing whether the zone to be treated is larger than the palm of a hand (1.5% total body surface area). For any area larger than this, the recommendation is monitoring and vein access.

Dr Jaime Piquero-Casals told us of the usefulness of medium-deep peels in treating cancerisation. He recommends chemical peels when standard treatment, such as 5-fluorouracil 5% or photodynamic therapy, has failed. The doctor recommended the concept of mosaic peeling: deep zones and medium zones depending on the objectives. The most recommended alternatives are: sequential Jessner + 35% TCA peels; isolated 35% TCA; commercial formulas of 30% TCA with antioxidants (take into account that with these, frosting will be partly concealed); hybrid peels with 30% phenol + 12% TCA + 0.5% croton oil; fractional Erbium laser + 5% retinoic peel.

Laser in pigmented lesions

During the session on laser use in pigmented lesions, the main innovations were described, which include the LIOB (laser induced optical breakdown) effect of the new fractional lenses of q-switched-mode lasers, new treatments for tattoos and picosecond lasers.

Dr Ricardo Galván told us about the specific aspects of the LIOB effect induced by diffractive lenses coupled with q-switched-mode nano- or picosecond lasers. These lenses generate peaks of high energy with a photoacoustic effect concentrated on a low-energy matrix at an intra-epidermal or superficial dermal level. It generates intra-epidermal vacuoles without thermal damage. They are particularly useful in rejuvenation treatments applied to dark skin, but can also be used for melasma, post-inflammatory hyperpigmentation and other similar entities. Its use is gaining ever greater acceptance as an alternative to other photothermal effect lasers, such as non-ablative fractioned lasers on the infrared spectrum.

In terms of the differences of q-switched picosecond or nanosecond lasers, Dr Miralles reminded us that these lasers have a pulse that is up to 100 times shorter, achieving a more purely photomechanical effect. This is an advantage in eliminating tattoos, but also for complex pigment entities, such as, and amongst others, Nevus of Ota, post-inflammatory pigmentations, residual pigmentations due to hemosiderin, etc.

Dr Donis Muñoz commented on the innovations available in respect of eliminating tattoos, presenting an interesting scale of treatment endpoints, which includes 5 degrees from more to less conservative. The most conservative options include moderate lightening without bleeding, whilst the more aggressive or decisive endpoints are those with intense lightening, clear bleeding and longer recovery

times (endpoints 4-5). The doctor declared that the presence of a certain level of pinpoint haemorrhage can foster the transepidermal elimination of the tattoo and very much recommends the use of fractionated lenses of q-switched-mode nano- and picosecond lasers as a tool with a twofold effect: elimination of the dye and improved healing of the tattoo area.

The role of laser in today's dermatology

Dr Jorge Ocampo-Candini presented information about pulsed dye laser, which is perhaps the laser most discussed and published in scientific literature. In addition to being the laser of choice in all vascular indications, such as malformations, hemangioma, poikiloderma or telangiectasia, it also has a great many other indications. Use in the field of scarring is particularly interesting, as its early use, even right after removing stitches, has proven to have a preventive effect on the hypertrophy of scars. Non-vascular indications of the pulsed dye laser include proven use in collagenopathies such as cutaneous lupus and viral infections such as verrucas and molluscum, amongst others.

The laser-assisted delivery of drugs allows us to introduce molecules onto the skin far more effectively than through topical application. Dr Mónica Ramos presented us with the various options, clarifying that ablative fractional laser, such as CO2, is the most effective manner. This technique has various indications, ranging from precancerous lesions such as actinic keratosis through to hypertrophic/keloid scars. Laser-assisted delivery of finasteride and minoxidil has also been used in the treatment of alopecia with a certain degree of success, achieving higher absorption rates than in topical application. This is a field that is currently evolving constantly with indications that go beyond purely dermatological cases, such as the transepidermal release of vaccines.

New developments in pruritus

In the session on pruritus, new developments were discussed for the various types of pruritus: that related to atopic dermatitis, psychogenic pruritus and prurigo nodularis.

With regard to prurigo nodularis, Dr Esperanza Melendez Ramirez, reminded us that this disease manifests in the form of dispersed hyperkeratotic lesions and has a major impact on patient quality of life. It is usually a secondary process related to situations such as atopy, psychiatric diseases like anxiety or other systemic diseases. It has a multifactorial pathogenesis in which we are gradually learning of the involvement of more and more inflammatory mediators, such as the IL-31 and various neuropeptides. In addition, the sensitive nerve fibres of these patients have a footprint of specific markers. The FGN molecule would appear to play a key role in the pathogeny, as it causes dermal neuronal hyperplasia and keratinocytic hyperplasia with the lesions typical of this disease. There is a varied therapeutic arsenal available but for the most part is not overly effective, made up of anti-inflammatory drugs, like corticosteroids or calcineurin inhibitors or calcipotriol. Phototherapy can also be effective. Classic immune suppressant drugs, like methotrexate, azathioprine or lenalidomide/thalidomide have been used with a certain degree of efficacy. Promising, more modern alternatives include the biological drugs antiIL-31 (nemolizumab) or anti IL 4 (dupilumab).

Dr Juan Escalas Taberner presented his work on psychogenic pruritus. It is also known as pruritus sine materia and is diagnosed following a complete screening to exclude other possible causes of the itching, such as systemic alterations: thyroid, metabolic alterations like diabetes, tumours,

haematological conditions, etc. It is complex to manage and generally requires a combined approach of antihistamine drugs and antidepressants or antipsychotics, suitably handled.

Dr Mauricio Torres-Pradilla's presentation discussed one of the most frequent causes of pruritus seen in our consults: atopic dermatitis. Very often, it is precisely the itching and consequent scratching that causes the onset of the typical lesions seen in atopic dermatitis: lichenification, excoriation, etc. Luckily, we can rely on an increasingly extensive therapeutic arsenal to manage the disease, thanks to new target drugs like dupilumab (anti-IL4).

Cervical spine rejuvenation

The problems most frequently seen in the cervical spine area are the accumulation of fat beneath the chin (double chin), definition of the mandibular angle, onset of wrinkles, photodamage and neck bands. Dr Yadira Díaz reminds us that the best results are achieved with treatment combinations. She mainly recommends mesobotox or botulinum toxin in small quantities at a preventive level, even in young patients.

As regards equipment, Dr Adrián Alegre reviewed the various different therapeutic options available, depending on the depths reached. With pulsed light, we can treat poikiloderma and vascular and pigment alterations. With fractioned lasers, we can mainly work on the superficial dermis layer for patients with superficial wrinkles. In the case of radiofrequency, we should know that monopolar penetrates more deeply, whilst bipolar is more superficial but reaches higher temperatures. Radiofrequency with micro needles are an excellent option for firming. In addition, HIFU (High Intensity Focused Ultrasound) provides us with a deeper option, penetrating up to 4.5 mm in some cases and allowing us to firm up the SMAS. Cryolipolysis can also be used for lipolysis of the submental zone.

Treatment with recombinant enzymes was reviewed by Dr Susana Misticone. She recommends combinations of collagenase, lipase and hyaluronidase, depending on the type of rejuvenation desired. The doctor pointed out that lipase, differently to deoxycholic acid, achieves the digestion of triglycerides independently of damaging the adipocyte wall. The older the patient, the greater the recommended dose of enzymes and at least 3 sessions.

Dr Javier Ruiz recommends that treatments for the cervical spine zone should be carried out as early as possible after turning 30 years old, to prevent ageing changes from becoming irreversible. Botulinum toxin is the cornerstone of treatment to avoid platysmal fibrous bands that are untreatable. For ligaments, the doctors recommends treatment with stimulating peptides. The toxin also needs to be combined with volumisers, given that filling pre-treated with toxin will last longer. For the masseter zone, the doctor recommends not using large quantities due to the risk of difficulty chewing. For platysmal bands, the recommendation is to mark them, asking the patient to contract and then injecting a total of approximately 30-40 IUs in 2-3 IUs per point, separated 1-2 cm each point and around 20 units per side. The recommendation is to pinch the band, mark the points and inject with the muscle relaxed. In addition, the repeated injection of toxin at a superficial level ends up by improving the overall skin quality.

Tightening threads are another excellent option for the cervical spine zone, presented o us by Dr Iñigo de Felipe. The doctor presented us with a new technique, entering the centre of the cervical spine area and exiting at the mandibular angle with two needle threads to achieve better firming. These are threads sculpted with ultrasound, which are more powerful than heat-treated versions.

Polycaprolactone threads are particularly recommended due to their greater duration than PDO threads.

Report written by

Dr. Ricardo LIMONGI FERNANDES

Dermatologist, Brazil

Dear Colleagues,
It is a great honour to have the chance to attend the CILAD Madrid 2022 (Ibero-American Congress of Dermatology): Todos bajo una misma piel (All in the same boat - or skin!). In association with Naos/Bioderma France and with the support of Bioderma Spain, it gives me great pleasure to share the main contents of the sessions I attended today, with you all. Happy reading!

Photoprotection: 2022

Dr. Henry W. Lim brought evidence-based information that supports that currently organic (chemical) UV filters are not sufficient to protect the sin from the effect of visible light. He suggests tinted sunscreen with inorganic filters offer greater photoprotection against VL + UVA1 induce immediate erythema and delayed pigmentation compared to un-tinted products. Sunscreens with biologically active antioxidants and new filters (Triasorb/Mexoryl 400) covering UVA1 and visible light may be more efficient. Oral adjunctive photoprotection agents may prevent UV and VL-induced extracellular matrix degradation. Despite all, there are still gaps in photoprotection in 2022. According to him, we need better protection against wave UVA1 and VL, reconsideration of aerosol and oxybenzone-containing products (involved in health and environment issues), and education on photoprotection for all sin type. Lower phototypes need higher FPS, but higher phototypes need higher visible light protection due to the higher risk of pigmentation.

Optimizing your surgical outcomes

According to **Dr. George J. Hruza**, the scar is the most important issue regarding surgical procedures from patient point of view. He brought practical tips on how to achieve optimal Surgical Outcomes, as follow in hierarchy sequence:

1. Massage 1-2 months, submitting scar to pressure
2. 5-FU inections (less atrophy, hypopigmentation, telangiectasias compared to CEs) into and under the scars.
3. Laser microscopic treatment zones
4. PDL for thick scars (585-595nm, 0.5-1.5 msec pulse, 4-5/cm2)
5. Fraccionated ablative CO2 laser
6. Taping
7. BoNT for scar prevention (until 2 weeks 1-3U per point 1-3cm)
8. Flap defatting
9. Scar reversion of NLF
10. Scar revision of lip vermillion

11. Running horizontal Mattress Suture (better eversion of borders)
12. Dermabrasion or lasers around second intention healing defects, creating a natural concavity
13. Spot dermabrasion (diamond raise or sand paper)
14. Z-plasty for lip retraction and medial canthus webbing
15. Filler for atrophic scars (subcision à filler)
16. Topical silicone gel shetting
17. No Vitamin E!

Update on acne physiopathology

Prof. Brigitte Dréno brought new key information:

1. Sebum profile: saturated fatty acids are increased in acne
2. The high number of receptors inducing sebum production makes the control of hyperseborrhea complex.
3. HA causes reduction of the production of sebum
4. Clascosterone decreases transcription of genes both involved in sebum and inflammatory cytokine production.
5. Scars are induced by the atrophy of sebaceous gland induced by the chronic inflammatory infiltrate.
6. C. acnes produces a biofilm
7. C. acnés is involved in the formation of the microcomedo and therefore plays a role at an early stage of acne formation.
8. Acne is not related to the proliferation of C. acnes, but associated to the predominant phylotypes of acne-prone skin (IA1, CC18, A1), that activate innate immunity à secretion of inflammatory cytokines
9. Phylotype IA1 in healthy sin has a different virulent profile.
10. Dysbiosis in acne is not limited to C. acnes: C. acnes and S. epidermidis interact.
11. Maskne = Koebner phenomen. Prevention = skincare

According to her, future drugs will target skin microbiome (probiotics, prebiotics, postbiotics, bacteriophages, bacterial transplant), Innate Immunity (inhibiting TLRs, biologicals anti-IL1, anti-IL17, C. acnes (vaccination, inhibitors of biofilm, EVs)

Controversy about melasma

Why is there need for special photoprotection?

The session was opened by Dr Maria Ivonne Arellano Mendoza, who commented that we have always known about the importance of photoprotection in treating melasma but we forget about IR radiation and visible light (VL). VL (400-700nm) has biological effects on the skin (erythema, pigmentation, thermal damage, production of free radicals, indirect damage to the DNA with the generation of ROS, premature ageing) and it is related to the increased activity of the tyrosinase and release of proinflammatory cytokines. It does not lead to the formation of thymine dimers. She therefore stressed the importance of opaque (inorganic) physical filters, which are the only ones able to absorb VL and afford more effective protection. Not only are physical filters important but antioxidants are too. Although they do not block ultraviolet radiation nor indeed increase the SPF, they can reduce the harmful effects of the UVR with preventive effect (avoiding ROS), repairing (SOD, GP, catalase) and capturing the free radicals (Vit. E, C, betacarotene, flavonoids) but the action mechanisms, which are very different to filters, cannot be compared. They may be topical (Polipodium

leucotomus, Vit. C, Vit. E, Ubiquinone, grape seed extract, ferulic acid, tocopherol) or oral (Polipodium leucotomus, astaxanthin, lycopene and lutein. She concluded by saying that with antioxidants it is important to remember that the photoprotection provided by a topical sunscreen cannot be compared with an oral antioxidant, emphasising that it cannot be used to expose oneself to the sun, that it is not the only photoprotection strategy and that it should instead be used as a “two-step” strategy and an oral coadjuvant.

Tranexamic acid: The best route

Dr Elda Giansante was assigned the task of talking about topical and oral tranexamic acid (TA). The multifactorial etiopathogeny of melasma, involving genetic predisposition, family history, pregnancy, OAC, hormonal drugs and UV/LV exposure. She pointed out the different treatment lines with the use of hypopigmenting agents, peels or exfoliation, physical means, all associated with broad spectrum photoprotection. Although hydroquinone remains the gold standard, there are limits relating to the side effects.

TA, trans-4-(aminomethyl)cyclohexane carboxylic acid, is a lysine analogue used as a haemostatic agent with antifibrinolytic action.

Its capacity to lighten melasma was discovered incidentally by Nijo Sadako in 1979, when treating a patient with chronic urticaria.

Its action mechanism starts by inhibiting the binding of plasminogen with keratinocytes, blocking the pathway of arachidonic acid and prostaglandins, diminishing the activity of tyrosine and melanogenesis, thus reducing epidermal pigmentation. Another mechanism would be to inhibit vascular factors (VEGF) that are also found involved in melasma on a second level.

TA has been found to be effective in the treatment of melasma in various routes of administration: topical, intradermal and oral.

Research studies have used concentrations of topical tranexamic acid of between 2% and 5%, in creams or solutions, for long periods of 6 to 12 weeks. The results achieved with topical TA are varied and not consistent.

The intralesional route shows efficacy with controversial applications: weekly, biweekly, or monthly, whether in the form of mesotherapy at 5% or microneedling, with the latter being capable of increasing the efficacy of topical TA by as much as 50%. Micro needles + TA is effective, inexpensive and safe.

Orally, it is the first treatment used effectively in melasma with doses ranging from 250 mg twice a day to 500 mg three times a day, over periods of 2 to 6 months. The duration appears to be more important than the dose to treatment success. The side effects of oral TA continue to be a concern.

She concluded by saying that a large number of works and series of cases have shown that oral, topical or intradermal (IL or micro needles) TA is effective, but works with statistical significance are still needed). Oral administration would appear to be the most effective but is limited by its minor, infrequent side effects. Although the IL route is effective, it is limited by the fact that it is a painful procedure. TA should be considered as treatment in melasma, refractory to regular treatments, in combined use with therapies recognised for having greater benefits. Studies have shown that it is a safe treatment, nonetheless patients must be questioned to exclude contraindications to the treatment.

Another reason to exclude TA is the recurrence rates of 25-55%. Suitable patient selection and the dexterity and experience of the treating physician are essential in choosing the TA administration route.

Laser vs IPL

The third speaker in this session was Dr Mónica Ramos, who spoke about the major problem of treating melasma: there is no single topical treatment or technology that can treat all the mechanisms causing melasma; this means that she opts for combined therapies that include the use of technologies.

The first line treatment for melasma are topical agents, yet in cases where little or no improvement is seen, other therapies may be used. In laser therapy, QS-Nd:YAG 1064 nm has been used in toning mode with nanosecond and picosecond technology (NYQS), acting by reducing the accumulation of melanin and melanosomes in the dermis and epidermis. It is used in association with topical and oral treatments, non-ablative technologies and fractional modes. Non-ablative fractional lasers remove melanin through micro channels with good results, however the risk of recurrence and hyperpigmentation limit its use. They help improve solar elastosis and the basement membrane. Intense Pulsed Light (or “IPL”) is recommended for moderate-severe melasma, phototypes I-II and epidermal melasma with an important vascular component. Generally, the treatment is applied in 2-5 sessions with an interval of 4-8 weeks between each session, producing good results. IPL can also be used on dermal melasma, but with less satisfactory results. Diode 810 and Alexandrite 755nm lasers can be indicated for mixed melasma, post-inflammatory hyperpigmentation, in combinations. Other methods include combinations of micro needles, iontophoresis, sonophoresis or fractional CO2 laser (risk!) with the formation of micro channels that facilitate the penetration of drugs like 4% hydroquinone and tranexamic acid.
It is important to emphasise that it is not recommended that IPL or laser therapy be used as a monotherapy, but rather they should be used adjuvant therapies. The combination of different technologies for different melasma components is interesting. The “3L” rule applies at all times: Low fluences, Less passes, Less ablative options.

Successful dermaesthetic techniques

Lip beautification

Dr Patricia Carmona Contreras recalled that the beautification of lips was one of the cosmetic dermatological interventions currently most in demand. She does not like the term lip “filling” because she believes that it goes beyond simple filling. With this technique, the aim is to correct cosmetic alterations like disproportionate sizes, depressions and wrinkles, so rather than talking about augmentation, we speak of beautification. Knowledge of the anatomy of this zone by the injector is crucial, but a suitable sense of aesthetics, harmony and symmetry is also important to achieve the best results, always taking into account patients’ wishes and setting limits where necessary. Hyaluronic acid is the material used in these cases and she prefers Restylane Kysse, transferring the content to smaller syringes to facilitate injection. There are different techniques and they are constantly being perfected. The main ones employed are: microdroplet, 4 external points, 4 internal points or combined. The consensus view is that she recommends knowing the anatomy, plans, danger zones and injection techniques, considering the patient’s history, preferring use of 25G or larger cannulas (she, in particular, prefers needles), aspiration, slow infiltration and ultrasound vision to prevent and treat vascular occlusion. Consensus is also mentioned about complications, with recommendations to recognise the first symptoms of vascular damage (time, pain, colour), use of hyaluronidase 1500Ius + 1ml lidocaine 1-2%, replication each hour, completing 3 vials, use of radiofrequency, ASA 300mg, followed by 75mg per day, sildenafil (contradictory), prednisone 20-40mg, 3-5 days, Doxycycline 100mg/day for 30 days, nitroglycerin patches, hyperbaric chamber (in the event of necrosis). She concludes by saying that “the best technique is the one with which you feel comfortable, secure and your patients are happy with the results”.

Update in hand rejuvenation techniques

Dr Natalia Jiménez Gómez started by saying that the cosmetic correction of signs of ageing in the hands is technically difficult and that the continuous physical and chemical attack of the skin of the hands and its motor dynamics limit the durability of results.

Hands, after the face and cervical spine area, are one of the areas of the body where the signs of ageing are most apparent and, therefore, the demand for treatment here is on the increase.
During the presentation, clinical cases were used to address some of the treatments most widely used to improve skin ageing in the hands, such as Q-switched-mode lasers (pigmented lesions), intense, low-energy pulsed light (for the early stages of earning with short downtime, it improves texture and wrinkles), superficial or intermediate chemical peels, fractioned lasers and different filling materials and collagen inducers.
In the event of filling (calcium hydroxyapatite, hyaluronic acid or fat), she recommends using a cannula technique at a proximal level in a fan shape, respecting volume differences, injecting 1.5ml, 2ml or 15ml respectively).
More innovative techniques were also shown, such as platelet-rich plasma injection and tightening threads, the use of antioxidants like topical olive oil and radiofrequency with needles.
In most cases, an initial detailed analysis of the problems in the hands can be performed, setting targets with a combination of treatments, which is key to achieving satisfactory results. In the event of pigmented lesions, it is essential to perform advance dermoscopy and pre-treatment is recommended with a depigmenting formula and a great deal of precaution as the skin is thinner with few appendices.
In short, we need to think of the hands and not limit ourselves to the facial area, analyse the ageing findings, take precaution with the energy used in lasers and IPL and establish a skin care routine.
Comparative scientific studies are still needed of the different volume treatments.

Use of PDO threads: Complements to dermatological treatments

Miriam Neri Carmona reported that positive points include the lesser cost of the use of threads as compared with other procedures, such as hyaluronic acid, the greater duration, effect that are sometimes better than surgery, skin revitalisation and happy, satisfied patients.
Polydioxanone degrades in 2 stages, the first within 3-12 weeks
as hydrolysis. In the second stage, after 60 days, the water molecules have already
penetrated the thread structure, which loses 90% of its firmness. Complications are fairly infrequent. The most frequent are infection and superficial visible threads.
Haematoma and oedema can occur, along with sensations of tension and heat, inflammation and erythema and paraesthesia.

Non-surgical rhinoplasty: My technique and experience

Dr Javier Ruíz Ávila provided a practical focus on the technique, which consists of the use of hyaluronic acid with needles in 4 basic points, applied in radix, columella, nasal tip and, where necessary, above the tip. He does not recommend the use of calcium hydroxyapatite because it causes fibrosis. He believes that we are in the era of minimally-invasive rejuvenation, where patients prefer procedures that do not require recovery periods, which are less expensive and ensure results comparable with those of surgery. Reshaping with hyaluronic acid is an outpatient procedure in which the nasal profile is shaped. The most important points were addressed, which need to be considered to avoid complications. The anatomy and risk zones to be taken into account were reviewed, along with possible complications and how to act should such arise, in accordance with general consensus: he recommends knowing anatomy, plans, danger zones and injection techniques, considering the patient's history, preferring use of 25G or larger cannulas (he, in particular, prefers needles), aspiration, slow infiltration and ultrasound vision to prevent and treat vascular occlusion. Consensus is also mentioned about complications, with recommendations to recognise the first symptoms of vascular damage (time, pain, colour), use of hyaluronidase 1500Ius + 1ml lidocaine 1-2%, replication each hour, completing 3 vials, use of radiofrequency, ASA 300mg, followed by 75mg per day, sildenafil (contradictory), prednisone 20-40mg, 3-5 days, Doxycycline 100mg/day for 30 days, nitroglycerin patches, hyperbaric chamber (in the event of necrosis).
His closing remarks include that non-surgical rhinoplasty is a technique that is being used increasingly, can be less costly and require less time of inactivity than surgical rhinoplasty. Although

some facial asymmetries add beauty, the nose should be as perfectly symmetrical as possible. He considers that the procedure is safe in expert hands, but even thus, patients should be assessed for possible complications. Finally, hyaluronidase is effective but prevention remains the best medicine when performed by an experienced dermatologist.

Update: chemical exfoliation in melanoderma peels

In agreement with Dr Miroslava Zolano Orozco. with the growth of cosmetic dermatology worldwide, treatments that are effective against imperfections of the skin and that increase beauty without prolonged recovery time or exposing patients to the risks of surgery, are becoming more and more popular. Chemical exfoliation is a common, quick, safe and effective outpatient treatment that can be used for both cosmetic purposes, like fine lines and photoaging but also as first-line and complementary therapies for acne but also as first-line or complementary therapies for acne, pigment disorders and scars. Dermatologists face specific challenges when they use peels on coloured skin. The higher risk of abnormal scarring and post-inflammatory dyschromia means that exfoliation is potentially disfiguring. Therefore, as area specialists, we need to have solid knowledge of the different peels available and its safety in melanotic skin.

Peels can be mechanical, physical or chemical. They can be superficial, medium or deep with preparations that include glycolic, lactic, malic, citric, tartaric, mandelic, benzilic, salicylic, pyruvic acid, Jessner solution, ATA, phenol and Baker-Gordon formula.

Superficial peels are generally used for acne, melasma, PIH, lentigo and ephelides. Medium peels are used for acne scarring (CROSS), melasma, wrinkles, Qas and photodamage. Deep peels are the best for deep wrinkles, deep scars and acne scars.

The prior assessment includes skin type, history of bacterial, fungal or viral infection, healing abnormalities, occupation and outdoor hobbies, illnesses and use of drugs, smoking and taking photographs.

Patient preparation includes photoprotector, retinoid, hydroquinone (or AHA, PHA). 1 week before - suspend any acid-based skin cleansers, depilation, electrolysis, benzoyl peroxide, AHAs, sponges, masks, dyes and permanent hair straighteners. The day of the peel, avoid shaving, using cologne... prophylaxis for recurring infections when necessary, with valaciclovir or mupirocin.

After-care includes physical means (ice pack), gentle facial cleansing, application of emollient without rubbing, bathing with a gauze in aluminium acetate, avoiding peeling and avoiding the sun.

Complications of the use of chemical peels on dark skin include PIH, hypochromia, scarring, acne, persistent erythema and infection.

Handling complications in cosmetic procedures

Welcome and general aspects

Dr Francisco Marcos Pérez Atamoros provided a brief introduction, recalling that complications are and will always be part of medical activity. The most important thing was to manage to identify them and act immediately.

Neurotoxin complications

Maritza Kummerfeld spoke not only about general side effects, like pain, headache, erythema, minor oedema, ecchymosis and dry skin, but also issues such as the antibody incidence, which is lower than in therapeutic options (by approximately 1.8%). She claims that allergic reactions are rare, there are cases of nausea, fatigue, malaise, nodules and one case reported of anaphylaxis in cosmetics. Inexpressive face and dissatisfied patients are also considered as complications. Depending on the region of application, we have blepharoptosis, ptosis (or accentuated lifting) of the brow, for the glabellar area. The suggested treatment for ptosis is Apraclonidine 0.5% 1-2 drops t.i.d. and brow-

raising exercises. For accentuated elevation, inject 2U above the peak. For the forehead area, blepharoptosis, asymmetry and drooping or flattening of the brow. Treatment with injection into the upper lateral orbicularis oculi. For the crows feet area, photophobia, ptosis of the eyelid, asymmetry, blepharoptosis, diplopia, lagophthalmos, ectropion and xerophthalmia. For the bunny lines area, ptosis of the lip, epiphora, diplopia. For the lip area, asymmetry, altered shape, oral incompetence, without corrective treatment. In treating gummy smiles, asymmetric smile, ptosis of the lip and oral incompetence. For the marionette lines area, asymmetry or altered lip shape, static or dynamic. For the chin area, asymmetric lips and altered lip shape. For the masseter area, difficulty chewing and smiling. For the platysmal area, she believes adequate knowledge of the anatomy and related muscles is essential, along with patient identification, precision of injection and optimal dosage.

Complications with fillers

Dr Francisco Marcos Pérez Atamoros pointed out the main factors involved in complications with fillers: no anatomical knowledge, not knowing the filler well, allowing the manufacturer to “tell me” how to use it, mixing fillers, re-applying multiple times, greater effects with permanent fillers. Complications involved in applying different filler types are becoming more and more frequent, firstly due to the increased demand for these treatments and due to the lack of experience and above all knowledge by a great many specialist doctors and even more NON-specialists. Complications with temporary fillers are far fewer than those experienced with permanent ones. A great many of these side effects, adverse events and complications can arise months or even years after applying the filler. Some side effects, like pain ecchymosis, oedema, reddening, hyperpigmentation and infection are closely related to a lack of technique and consequently inadequate application by the doctor. As a rule, all these situations tend to resolve favourably over time, some require painkillers, anti-inflammatory drugs, diuretics and antibiotics for full control to avoid any after-effects. Side effects such as asymmetry, migration, over-correction, the Tyndall effect, nodules, granuloma, abscesses, oedema by biofilm, foreign body reactions and fibrosis are to a large extent due to the substances and, above all, the lack of experience and expertise by doctors.
Biofilms are heterogeneous structures that include bacteria enveloped within a very strong extracellular matrix secreting polysaccharides and hyaluronic acid. It is self-sufficient to maintain growth of these micro-organisms, which characteristically respond to stimuli, maintaining a homoeostatic environment, evasion of the immune system through gene expression and strong resistance to antibiotics.
The treatment of choice for the Tyndall effect is hyaluronidase, just like for infraorbital and malar oedema. For nodules not associated with inflammation, direct drainage or hyaluronidase.
What fears us most are, of course, severe complications such as early hypersensitivity reactions (fairly rare) with late reactions being more frequent. Necrosis in the area of application or at a distance is essentially related to the embolisation or occlusion of major blood vessels; in these complications, the correct IMMEDIATE intervention by the doctor can minimise or even avoid damage to an area of the skin or an organ, like the eyes. Today, we have multiple means available to us to help PREVENT complications, such as in-depth anatomical knowledge of the area to be treated, theoretical training and, above all, detailed practice in applying fillers and using large-gauge cannulas (25, 23, 21, 20, 18G). Having a small emergency team on-hand allows us to immediately treat any complication: Hyaluronidase (1500 IU or 25 katals), solution for dilution, 3 cc syringe, nitroglycerine patches (dose for an area of skin measuring 5 x 5 cm, 5.5-7 mg), warm compresses, acetylsalicylic acid 100 mg tablets. Emergency contact of a nearby hospital and OPHTHALMOLOGIST informed and trained to attend to occlusive ocular complications. Today, when we apply filler to any part of the human body, the doctor MUST:
be suitably trained in application.
have in-depth knowledge of the region’s anatomy.
have a fine, well-developed sense of aesthetics.
know and be able to identify early signs of any complication and ACT immediately in the most

appropriate, correct manner.
have contact with an expert ophthalmologist and the accident and emergency department of a nearby hospital. One very important symptom for recognising ocular embolisation is the sensation that water is entering the eyes, or the sensation of waste in the eyes.

Complications with using threads

According to Dr Reynaldo Arosemena, short-term complications are haematoma, pain, inflammation and bleeding. Aesthetic concerns include dimples, irregularities and abnormal facial contours. Neurosensory repercussions: tension, numbness and itching. Infection, inflammation, abscess, thread extrusion, subcutaneous hardening, granuloma, lesion of nearby structures like the facial nerves, parotid glands. Articles report dimples, infection and changes in the facial contours as apparently the most frequent. Most are treated conservatively with non-surgical methods, antibiotics, physiotherapy and painkillers. Sensory alterations are treated with methylcobalamin, complex B; depressions with local massage and heat. For subcutaneous hardening, corticosteroid infiltrations are used.

Complications with the use of laser and other technology

Dr Emma Guzmán first recalled certain complications of non-laser procedures. Microdermabrasion, for example, can treat petecchia and purpura, erythema, minor burning sensation, hyperpigmentation and peeling. For hydrodermabrasion, erythema, oedema, bleeding, hyper or hypopigmentation and infections. Micropuncture, erythema, pain, granulomatous reaction (depending on the material) and infection. Suitable use of laser for the pathology to be treated is what guarantees a good outcome in using these techniques, which have helped improve superficial skin lesions and, above all, improve our patients' appearances while doing less damage to the skin. This is why choosing the patient's skin phototype is one of the factors that can help avoid side effects. It is important to adopt prevention measures and to treat skin without active lesions, without irritations. If skin is tanned, it is best not to use lasers and suitable hydration levels in the skin help assure a rapid recovery. Preparation of the skin before the procedure with photoprotection is very important as this can help avoid post-treatment hyperpigmentation, which is one of the most frequently seen side effects. For laser and IPL, the most frequently seen complications are erythema, temporary pain, papules, petecchia, hyperaemia, burns, oedema, pigment alterations, atrophy and scarring. In the case of ablative options, erythema, petecchia, scarring and herpes simples. The most commonly seen in relation to hyper/hypopigmentation are IPL, Q-Switched Alexandrite and Diode Laser. In the case of hyperpigmentation, her recommendation is to use lightening agents, sunscreen, topical retinoid and vitamin C.

This is a summary of what happened today during CILAD 2022. I hope you liked it!

Dear Colleagues,
The second day of CILAD 2022 was very busy indeed and here I am, in collaboration with Naos/Bioderma, reporting back to you on some of the most interesting aspects of the day.

Adult acne

Why the prevalence of acne in adults is increasing, data on the benefit of skin cosmetics

According to Dr Patricia A. Troielli, the global prevalence of acne is 9.8%. Adult acne is being seen more and more frequently. Prevalence is greatest in women with persistent or onset acne over the age of 25. The therapeutic approach in these cases must be adjusted to the specific characteristics of

the adult population, taking into account the multiple new factors that result in the issue becoming chronic or severe. Topical treatment with retinoids, benzoyl peroxide and azelaic acid, which are known to be effective in acne vulgaris tends to cause dryness, irritation and erythema, which limits adherence to and failure of treatment. Consequently, the recommendation and demand for skin cosmetics (cleansers, humectants, sunscreen and make-up) is increasing as monotherapy or adjuvant therapy (start and maintenance) to ensure the success of the treatment and prevent recurrence. Use of skin cosmetics increases patient satisfaction with the treatment, reduces the side effects of pharmacological treatment and ensures greater adherence.

Moderate to severe acne in the adult woman, assessment criteria and new treatments

For Dr Giselle Claros, adult acne is a chronic skin disease with a major psychological, social and emotional impact. It is seen in adults aged over 25, mainly women. The clinical difference as compared with juvenile acne is the predominance of the lower third, with a moderate to severe disease that is very often refractory to multiple treatments. It can be persistent, late-onset or recurrent. Assessment must take into account patient age, when it onset, if any treatment has been administered, if any type of OAC is used or supplements or medicines, if it is related to the menstrual cycle or the possibility or desire to become pregnant. The positive association of hormonal IUDs and acne should also not be forgotten. Laboratory tests are recommended when signs of hyperandrogenism are seen, such as menstrual alterations or hirsutism, even if only around 18% will have this disorder. Tests include total and free testosterone, SDHA, androstenedione, AMH, FSH/LH, 17-Oh-progesterone, PRL and TSH. Blood should be taken between days three and five of the cycle. Therapy must be holistic. New topical products include Clascoterone, Trifarotene and minocycline foam. The most effective contraceptives in treating acne are third and fourth generation, containing cyproterone acetate, drospirenone, chlormadinone, dienogest or nomegestrol. Spironolactone is very well tolerated. Its side effects are dose-dependent (menstrual irregularity in 22%). Potassium monitoring is recommended in over 45s. For most of the side effects of isotretinoin, some authors defend the use of antihistamines to reduce flare-ups and Omega 3 (1g per day) for mucocutaneous effects. Maintenance treatment always.

Scarring and PIH: risk, types, assessment

For Dr Emilia Noemi Cohen Sabban, any patient with acne is at risk of forming scars. She pointed out some incorrect concepts, such as thinking that this only occurs in severe cases, that they “disappear” once the acne has passed and that they only occur if the lesions are tampered with. The risk factors are: extension and duration of the acne, time until effective treatment (cut-off point = 3 years), family history and lesion manipulation. Effective treatment reduces the risk of scarring. PIH is an acquired hypermelanosis, with increased melanin production or an irregular dispersion of the pigment after inflammation. It occurs in any gender and at any age and is common in patients with acne and more so with coloured skin. Mechanical aggression can worsen PIH. Treatment of PIH involves prevention (inflammation control, considering the irritation potential of the active ingredients), skin care (sunscreen), depigmenting factors (HQ, Triple, RET, AZA) and procedures (peels, lasers, IPL and microneedling). Associate skin cosmetics containing ionic acid, arbutin, niacinamide, thiamidol or cysteamine.

Lights and lasers, the role played today

For Dr Mónica Ramos, different wavelengths suit different therapeutic goals: C. acnes, keratinocytes, follicular corneal layer, dermis capillaries, sebaceous gland. PDT is a good alternative for active acne, reducing pro-inflammatory markers and C. acnes. Her recommendation to lower the pain level is to reduce ALA incubation time (30min) and increase light dosage (150J). Photopneumatic therapy, also for active acne, reducing C. acnes and photothermally destroying the follicles. KTP 532nm laser also acts on active acne through the photoactivation of bacterial porphyrins, reducing C. acnes and thermally damaging the sebaceous glands. Pulsed dye laser (PDL) acts on inflammatory acne by

destroying blood vessels and preventing the proliferation of keratinocytes. The 800nm diode laser + gold microparticles acts on inflammatory acne through the direct photothermolysis of the sebaceous glands. Intense pulsed light (IPL) acts on inflammatory acne by photothermolysis of the sebaceous glands, reducing C. acnes and the photoexcitation of bacterial porphyrins. The Nd:YAG 1064nm long pulse laser acts by destroying the sebaceous glands, reducing proinflammatory cytokines and destroying the perifollicular corneal layer. The fractional CO2 laser works on the photothermolysis of the sebaceous gland. Combined with IPL, it helps reduce sebum. Combined with fractional RF, it helps by destroying the sebaceous glands. It reduces inflammatory and non-inflammatory lesions (scars). The Nd:YAG 1064nm QD nano/pico fractional laser is indicated for treating acne scars. It reshapes collagen and regulates inflammatory cytokines. It is safe in high phototypes and interesting in allowing for the delivery of drugs. Non-ablative fractional Er.glass laser (1550nm, 1540nm) is an infrared that photochemically destroys the sebaceous glands, also acting through the photothermolysis of sebocytes and C. acnes. Recommendations:

- Mild-moderate: non-ablative [Er. Glass (1550, 1540nm), fractional nano/pico
- Moderate-severe: ablative (CO2 or Er. TAG, fractional RF, fractional nano/pico
- High phototypes: Er. Glass (1550, 1540nm), fractional nano/pico, RF Fx
- Erythema or pigment: PDL 585nm, Alexandrite 755nm, Nd:YAG 1064

Photoprotection

New concepts in photoprotection

According to Dr María Victoria De Gálvez Aranda, up until a few years ago, basic photoprotection was hinged on three essential pillars: photoprotection habits, physical photoprotection and topical photoprotective formulas and the main intent was to avoid sunburn, fundamentally caused by ultraviolet B radiation. Nonetheless, in recent decades, it has been shown that other wavelength solar radiation is also involved in photoinduced damage, as well as oxidative stress or failed repair of the DNA, amongst others. New sunscreens such as TriAsorB and Mexoryl 400 have a broader spectrum, which includes not only UVA + UVB protection, but also protection from blue light. Photoprotectors with colour protect better against visible light. Photoprotectors 100+ protect better than SPF 50+ in situations of high exposure to the sun. DNA repair therapies and antioxidants complement the action of the photoprotector.

The concept of complete photoprotection has changed and indicators have been developed of ultraviolet radiation received. The melanin calculator, for example, takes into account the length of time of exposure to the sun and lights (light bulb, LED, screens) and immediately assesses the minimum dose of PPD necessary and the need for solar protection against blue light. The UVI-LISCO is a type of sundial that, according to the position of the back, indicates the risk level in exposure to radiation. Devices and access to websites that provide real-time information on luminous radiation levels. On the other hand, in addition to the healthcare environment, concern over sun damage is also involving other sectors, such as education, sports-based tourism and employment.

Photoprotection in the community, experience in our environment

Located in the south of Spain, in the province of Malaga, the western Costa del Sol is a reference territorial area for its sun and beach-based tourism. It has a multicultural community and one of the highest rates of skin cancer in Europe. Dr Magdalena De Troya Martín presents her experience in photoprotection and skin cancer prevention campaigns in the community for more than a decade. In 2009, the campaign “Disfruta del Sol sin dejarte la Piel” (Enjoy the sun without risking your skin) was launched (https://disfrutadelsol.hcs.es/), the result of a collaboration between the Costa del Sol Hospital and the Costa del Sol healthcare district, aimed at reducing the incidence, mortality and healthcare costs for skin cancer in the western part of Costa del Sol. Over the years, various actions

have been taken, including: 1) creation of a healthcare professional and social healthcare agents training line, to which more than 2,000 professionals of different areas have signed up, 2) creation of an educational programme and school badge involving more than 100 schools throughout Andalucia, 3) a huge variety of educational interventions for different groups of the population at risk, 4) numerous intervention in local/regional/national/international communication media as well as the start-up of social network accounts, and 5) a large number of investigations and innovations in the field of skin cancer prevention. Since 2020, with a view to driving the strategy in other places both within and outside our region, through the SOLUDABLE project (https://soludable.hcs.es/), a multidisciplinary programme has been run on skin cancer prevention, of both national and international reach.

Photoprotection: Beyond skin

This is a revision of the plasma levels that can be detected by the components of solar protectors after topical application and the possibility of health-related consequences. It was developed through a revision of updated journal articles. For Dr Ana Larrache, photoprotection is a matter of dermatologists teaching their patients properly, seeking to prevent the damaging effects of the sun, of which we are now only too aware. However, as skin professionals, we are faced with a dilemma: What happens beyond this skin application? How safe are our patients at a systemic level? Does the fact that they pass through to the blood mean that they are unsafe? Are we collaborating with the onset of skin and/or systemic pathologies that are suspected of being associated with the prolonged use of sunscreen? What is the level of damage we are causing to our environment? New doors are being opened to the discover of other substances as a result of this query. New studies are being carried out by the FDA on commonly-used photoprotectors (both in lotion and spray form) after a single application, showing high levels of active ingredients, above those considered as safe by this entity. Previous investigations have shown that some of the ingredients studied by the FDA can act as hormone disruptors and lead to fertility problems, poor development in newborns and even the possibility of cancer. On the other hand, the matter of environmental changes attributed to the indiscriminate use of photoprotectors is also being reviewed. Nonetheless, no counterpoints were presented to the studies describing these warnings.

Oral photoprotection

For Dr Wendy Rocío Peralta Sanchez, taking into account nutrition for skin health “the more the colour, the better”. 2/3 cup carrot for yellow/orange (Vit. A), 1 raw tomato for red/orange (Vit. C), ½ avocado for green (Vit. E, folic acid), 1 Brazil nut, almonds for brown (minerals, trace, biotin), chicken, fish for pink (proteins), 1 cup blueberries/strawberries for blue (antioxidants) and a supplement of 1000/2000U vitamin D are essential to skin health. As part of what is known as full photoprotection, the oral use of vitamins, pharmacological principles, minerals, proanthocyanidins, green tea, flavonoids, have been described throughout international literature as a complement (always) of topical photoprotection, in all population groups and in particular in those with a history of non-melanoma skin cancer, melasma, inflammatory or immunological diseases of the skin or in groups considered as being at high risk (low phototypes, people exposed to the open air for long periods of time), photoaggravated dermatitis, genodermatosis, dark skin. Although very efficient, antimalarial drugs (200-250mg/day) are only considered as a 1st line treatment in certain pathologies, due to their side effects. Antioxidants, enzymes, carotenoids, polyphenols, flavonoids, fatty acids, N-acetylcysteine, prebiotics, vitamins, minerals, non-steroidal anti-inflammatory drugs, algae, lichens and ferns can offer additional levels of protection.

When skin bacteria and drugs conspire: driving acneiform skin toxicity to cancer drugs

Dr. Lars French spoke about the mechanisms involved in papulopustular (acneiform) eruptions related to EGF-R and MEK inhibitors. There is evidence that IL-36 and IL-8 are likely driver cytokines. The predominant distribution on sebum-rich areas and the “sterile” eruption indicates a cofactor required for optimal IL-36 expression: C. acnes. Blockade of EGF-R/MEK signaling + simultaneous activation of TLR-2 signaling by C. acnes drives strong KC IL-36 & IL-8 expression. Transcription factors LF4 + NFkB (p65) play an important role in the synergistic effect of EGF-R/MEK and C. acnes on KC expression of IL-36.

A Dermatologist's Guide to Non Dermatological Indications of Botulinum Toxin

Dr. Hassan Galadari focused on the indications not involving wrinkles indications:

- Axillary Hyperhidrosis 100U (total) average. Can go up to 200U. Palmoplantar, similar dosing, more for soles. More painful and more EAs.
- Migraine – mechanism still unknown. Only works for headaches on most days (15 or more, 8 of then migraine) of the month. Total dose 155U (31 sites with 5U each): frontalis (4 sites), corrugatores (2 sites), procerus (1 site), occipitalis (6 sites), temporalis (8 sites), trapezil (6 sites), cervical paraspinal (4 sites)
- Temporomandibular disorders – 100U. Can up to 150 (10 sites with 10U each), 3 per masseter and 2 for temporalis.
- Scars – 10U/cm
- Depression – feedback mechanism?

Cutaneous reactions following COVID-19 vaccination – A Singapore perspective

The main reactions in Singapore´s population, according to Dr. Yen Loo Lim are:

- Delayed large local reactions – more frequently m-RNA vaccine, 7 days post vaccination, self-limiting (a week). Can proceed with the same vaccine, but contralateral arm
- Urticaria/dermographism/angioedema – 7 days post vaccination (new onset), 156 days to complete resolution. Can proceed with the same vaccine, but should take antihistamines 2-3 days prior.
- Maculopapular exanthems – 6 days post vaccination, resolves within 8 days. Can proceed with the same vaccine.
- Pityriasis rosea eruptions – 9 days post vaccination, duration 7.5 days. Can proceed with the same vaccine.
- Eczematous reactions/atopic dermatitis – 8 days post vaccination, resolves in 196 days (new onset). Can proceed with the same vaccine.
- Psoriasis/pustular psoriasis – 10 days post vaccination, duration 331 days (new onset)
- Zoster – 16 days post vaccination, duration 19 days
- Autoimmune blistering diseases – 11 days post vaccination, 158 days to resolve

The challenges in attributing culpability of COVID vaccines to cutaneous eruptions are related to

1. Wide spectrum of cutaneous eruptions
2. Varying interval between vaccination and onset of rash
3. Delay in presentation to clinics/self-reporting worsening of existing dermatoses.
4. Concomitant intake of other medications
5. Differentiating of/unified pathomechanism of immune hyperactive post vaccination

6. Lack of understanding of/unified pathomecanism of immune hyperactivity post vaccination.
7. Bias against/distrust of mRNA vaccines from both patients and

This is a summary of what happened today at the CILAD 2022 in Madrid. I hope you liked it!

What's new?

Latest developments in clinical dermatology

There have been a number of new developments in clinical dermatology over the past year. New biological treatments have expanded the therapeutic arsenal for psoriasis and creating new hope for highly orphan diseases such as atopic dermatitis.
The number of routine dermatology check-ups sky-rocketed in 2019, reducing the clinical variability of our speciality and making it increasingly evidence-based. Dermatological conditions are no longer “set apart” and have instead become a guiding signal for a multitude of comorbidities that dermatologists need to first recognise, then prevent and manage using a multi-disciplinary approach. There is better awareness of genodermatoses, and of all dermatological conditions with systemic involvement.
This presentation covered these and other relevant aspects of clinical dermatology, without forgetting the health emergency that paralysed the world and put our healthcare systems to the test i.e. the Covid-19 pandemic.
Dr Yolanda Gilaberte spoke about monkeypox, caused by direct contact with or consumption of primates or rodents, transmitted person to person in respiratory droplets, bodily fluids, contaminated objects, mother to child, or through sexual contact. The genital differential diagnosis includes herpex simplex, syphilis, LGV, nodular scabies and molluscum. On other locations it includes varicella, disseminated herpes, folliculitis, bites, secondary syphilis, disseminated gonococcal infection, impetigo and molluscum. It is important to wear a FFP2 mask and observe contact isolation; it is diagnosed by PCR (vesicles, exudate, scabs, blood, pharyngeal swab) Treatment is cidofovir, or tecovirimat in severe cases. The smallpox vaccine protects against monkeypox The talk also covered reactions to the COVID vaccines, and the importance of teatowels and other cloths for the spread of HPV1 and HPV2. VEXAS syndrome (vacuoles, E1 enzyme, x-linked, autoinflammatory, somatic) should be considered in adult males with fever and weakness, compatible cutaneous clinical signs (tender red infiltrated or purpuric nodules, chondritis, periorbital oedema, refractory vasculitis, cytopoenia and elevated inflammatory markers, and microscopic evidence of neutrophilic dermatosis without vasculitis. A bone marrow biopsy should be taken to search for vacuoles, along with DNA sequencing to identify the UBA1 gene. The speaker discussed the link between pemphigus vulgaris and herpes simplex, suggesting that a HSV PCR should be used for patients with pemphigus and treatment given in case of a positive result, together with preventive treatment in severe cases. She mentioned the good response of bullous pemphigoid to omalizumab and summarised the treatments for systemic autoimmune diseases:
Dermatomyositis: Rituximab, Tofacitinib, other JAK inhibitors, Belimumab, Apremilast and Abatacept, Ustekinumab, Anakinra, Tocilizumab. Not anti-TNFα!!
Scleroderma: Rituximab, Belimumab and Tofacitinib (skin hardening), and Cilostazol, Bosentan, Iloprost (Raynaud).
Lupus: Belimumab, Usteinumab. Not Rituximab!!
She also spoke about a population study of 1160 patients with hidradenitis suppurativa, indicating the cormorbidities found in this group. The main cutaneous adverse effects of the glaucoma drops (prostaglandin analogues) are contact dermatitis, hyperpigmentation, periorbitopathy, mucous membrane pemphigoid, poliosis, hypertrichosis, and skin hyper- or hypo-pigmentation. Late-onset

reactions include psoriasis, hyperhidrosis, lichen planus, alopecia and TEN. She revealed the good results with baricitinib for alopecia areata, dupilumab for prurigo nodularis, and a new scabies drug - spinosad, a natural insecticide derived from a soil actinobacterium requiring just one application. She explained the link between a high-salt diet and the risk of AD, and between smoking and AD. “Our habits matter”.

Latest developments in surgical dermatology

Ricardo Vieira suggested a slip-knot technique whereby patients can remove their own sutures, saving journeys, time and resources, especially during the COVID-19 pandemic. Using barbed sutures for circular defects makes knots more secure. The “ant” flap technique is another solution for circular defects. S-H flaps are an alternative to a bilateral approach (O-H). He spoke about the potential for reducing CO2 emissions, avoiding the need for disposable garments, and using public transport, amongst others.

Latest developments in dermopathology

Dr Martín Sangüeza explained the latest developments in dermopathology, including new entities, markers, antibodies, classifications and techniques. Virtual microscopy is a technique that uses machines to capture histology images of glass slides allowing the images to then be viewed, manipulated and diagnosed on a screen by a pathologist. He pointed out the huge advances made by artificial intelligence for dermopathology.

Latest developments in paediatric dermatology

Dr Margarita Larralde spoke about proposed new diagnostic criteria for type 1 neurofibromatosis, designed to include cases of Leguis syndrome (absence of neurofibroma, Lisch nodules, optic glioma and other malignant tumours) that currently meet the criteria for NF1. She discussed the use of selumetinib for inoperable plexiform neurofibroma. She also covered the diagnostic criteria for Happle-Tinschert syndrome (hypo- and hyperpigmented macules, segmentally-arranged basaloid follicular hamartomas, naevoid hypertrichosis, linear atrophoderma, palmoplantar pitting, loose skin on the hands and feet and dystrophic nails. She presented a few cases of CAPE (CARD14-associated papulosquamous eruption) in children, and the use of ustekinumab in cases of ILVEN or ISG15 deficiency (steroid-resistant ulcers, outbreaks and remissions, spontaneous recovery). She warned about the benignancy of upper lip asymmetry in prepubescent children, when faced with an unilateral asymptomatic change without signs of virilisation. Fibrous harmatoma of the tip of the tongue is a fusion defect of the first brachial arches, associated with oral-facial-digital syndrome. The lesions are benign and stable, and excision is not recommended.

It was a privilege to take part in CILAD 2022, in association with NAOS/Bioderma, and share everything I learned with my Spanish and South American colleagues. I hope that you too have learned something!

ECOBIOLOGY AT THE SERVICE OF DERMATOLOGY

Learn more about NAOS, French ecobiology company founder of BIODERMA, on www.naos.com