



AARS **HOT TOPICS** MEMBER NEWSLETTER

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AARS Announcement

AARS Clinical Research Award.

<https://acneandrosacea.org/grant-opportunities>

The AARS is proud to offer research grants to advance clinical science, while nurturing young investigators in the field of acne and rosacea. The deadline for the Clinical Research Grant is February 14, 2020.

[The Clinical Research Grant application is available for download.](#)

New Medical Research

Advanced evaluation of hidradenitis suppurativa with ultra-high frequency ultrasound: A promising tool for the diagnosis and monitoring of disease progression. Oranges T, Vitali S, Benincasa B, et al. *Skin Res Technol.* 2019 Dec 11. doi: 10.1111/srt.12823. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31825113>

Background: Hidradenitis suppurativa is a chronic inflammatory skin disease. An ultrasound staging (SOS-HS) using frequencies from 7 to 18 MHz has been proposed to evaluate the severity of the disease. Materials and methods: We retrospectively evaluated the most significant lesions in 50 patients with hidradenitis suppurativa (32 females and 18 males, aged from 12 to 68 years old), who had undergone high-frequency ultrasound (HFUS) (18-22 MHz) and ultra-high frequency ultrasound (UHFUS) (48 and 70 MHz). A MyLab™ Touch system (Esaote) equipped with a 18-22 MHz linear probe was used for the HFUS, and a Vevo® MD (VisualSonics) was used for the UHFUS, equipped with two linear probes (70 and 48 MHz). Results: A total of 116 lesions were observed, of which 66 were fluid collections, 32 were tunnels, 6 pseudocysts, 5 bridge scars, 5 tombstone comedones, and 2 granulation tissues. Structures that had already been described with HFUS were then observed with UHFUS but with a better definition. In addition, structures that had not been detected by HFUS were also observed with UHFUS such as drop-shaped hair follicles, micro-tunnels, and microcysts. Conclusion: Ultra-high frequency ultrasound provides a better understanding of hidradenitis suppurativa. Patients can be monitored more effectively thereby preventing the most severe changes.

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Effect of isotretinoin treatment on the inflammatory markers in patients with acne vulgaris: Can monocyte/HDL be a new indicator for inflammatory activity of isotretinoin treatment? Kutlu Ö. *Cutan Ocul Toxicol.* 2019 Dec 6:1-15. doi: 10.1080/15569527.2019.1701485. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31809606>

Background: Oral isotretinoin can effect markers of inflammation in patients with acne vulgaris. To our knowledge, there is no data on the relationship between ISO and monocyte to HDL cholesterol ratio (MHR). In this study, it is aimed to examine the effect of the ISO treatment on the MHR and other inflammatory markers in patients with acne vulgaris. Material and methods: In this study, 89 out of 120 patients with severe/very severe acne vulgaris according to the Global Acne Grading Scale who received at least 3 months of ISO treatment were evaluated. The complete blood counts including mean levels of mean platelet volume, plateletcrit (PTC), neutrophil to lymphocyte ratio (NLR), platelet to lymphocyte ratio (PLR), MHR and serum biochemistry panel were evaluated before and after ISO treatment. Results: The mean platelet value, NLR, and PLR levels underwent a statistically significant decrease after

ISO treatment ($p < 0.05$) while MHR increased significantly 3 months after ISO treatment ($p = 0.017$). The mean platelet value, NLR and PLR levels were 9.56 ± 1.05 , 2.15 ± 0.81 , and 142.45 ± 48.33 before treatment while were 9.32 ± 1.45 , 1.90 ± 0.99 , and 127.94 ± 41.38 after treatment, respectively. On the other hand, MHR was 9.76 ± 4.27 and 10.86 ± 4.12 before and after treatment respectively. Conclusion: In this study, we found that ISO may have both inflammatory and anti-inflammatory effects by using MPV, PTC, NLR, PLR, and MHR. The inflammatory effects of ISO may be associated with possible inflammatory diseases. MHR can be used as a novel marker to investigate inflammatory effect of the ISO.

Baseline patient-reported outcomes from UNITE: An observational, international, multicentre registry to evaluate hidradenitis suppurativa in clinical practice. Kimball AB, Crowley JJ, Papp K, et al. *J Eur Acad Dermatol Venereol.* 2019 Dec 4. doi: 10.1111/jdv.16132. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31800124>

Background: Hidradenitis suppurativa (HS) is a chronic, inflammatory, skin condition associated with many comorbidities and often has a substantial impact on patients' lives. Objectives: To evaluate symptom burden and health-related quality of life (HRQoL) at baseline in patients with HS in an observational, real-world, clinical setting using several tools including a validated HS-specific instrument. Methods: This study evaluated HRQoL data from the international UNITE HS disease registry. Administration of patient-reported outcome (PRO) instruments and collection of data were executed per local regulations. All data were assessed using descriptive statistical methods. Results: PRO data from 529 adults and 65 adolescents were evaluated. Most adults (64.5%) and adolescents (73.8%) were classified as Hurley Stage II with substantial disease burden at baseline. HS had a large effect (mean DLQI=12.6) and moderate effect (mean CDLQI=6.9) on the lives of adults and adolescents, respectively. Approximately 58% of adults and 41% of adolescents had anxiety scores beyond the normal range; 30% of adults and 16% of adolescents exhibited symptoms of depression. Based on HSSA and HSIA scores, approximately 30% of adults reported a substantial burden of multiple HS clinical symptoms and more than 45% reported a significant emotional impact of HS that adversely affected their intimate relationships. Only 60% of adults were employed and of those, 64% reported at least some degree of impairment while working because of HS. Conclusions: Based on PROs collected from patients enrolled in the UNITE registry, a real-world, clinical setting, HS has a significant negative impact on the everyday lives of patients affected by this disease.

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Efficacy and satisfaction of surgical treatment for hidradenitis suppurativa. Fertitta L, Hotz C, Wolkenstein P, et al. *J Eur Acad Dermatol Venereol.* 2019 Dec 4. doi: 10.1111/jdv.16135. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31799758>

Background: Surgery is a radical treatment for hidradenitis suppurativa (HS) and may be considered as the only one potentially curative. Objectives: To characterize HS recurrence in patients after surgery and assess the risk factors of recurrence. Methods: We conducted a monocentric retrospective cohort study. All consecutive patients who had surgery (January 1, 2012 to March 31, 2017) were included. We estimated the rate of recurrence of HS lesions after surgery (<1 cm from the scar), and recurrence-associated factors were analysed by univariate then multivariate logistic regression, estimating odds ratios (ORs) and 95% confidence intervals (CIs). Results: A total of 75 patients (median age 31.4 years [range 16-71]; 36 females), corresponding to 115 interventions were included. The Hurley score at surgery was III for 70 (60%) patients. In total, 61/115 (53%) interventions involved wide excision and 50 (43%) limited local excision. The localizations were axillary folds (n=46; 40%), buttocks (n=15, 13%), genital area (n=13; 11%), perineal area (n=12; 10%) and inguinal folds (n=18; 16%). We observed 11 (10%) complications and 40 (35%) recurrences. On multivariate analysis, probability of recurrence was associated with only one-stage surgical

closure (OR 3.2 [95% CI 1.4-7.3], $p=0.005$). Overall, 44 (52%) patients were completely satisfied and 22 (26%) partially satisfied, and most (81%) considered the surgery the best treatment. Conclusions: HS recurrence in our study was 35% and associated with one-stage surgical closures, but two-thirds of patients were satisfied with surgical treatment and would recommend surgery.

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Treatment adherence among patients with five dermatological diseases and four treatment types: A cross-sectional study. Alsubeeh NA, Alsharafi AA, Ahamed SS, Alajlan A. Patient Prefer Adherence. 2019 Dec 3;13:2029-2038. doi: 10.2147/PPA.S230921. eCollection 2019. <https://www.ncbi.nlm.nih.gov/pubmed/31819384>

Purpose: Treatment non-adherence leads to negative therapeutic outcomes and financial burdens on the healthcare system. This study aims to compare the mean adherence scores among patients with five dermatological diseases and four treatment types and to identify the associated patient-related factors. Patients and methods: This is a cross-sectional study conducted from January 2019 to August 2019. The questionnaire was distributed among patients attending the outpatient dermatology clinic at King Khalid University Hospital, Riyadh, Saudi Arabia. It included 2330 patients who were over 16 years old and diagnosed with any of the five dermatological diseases (psoriasis, chronic dermatitis, acne vulgaris, hair growth disorders, and vitiligo). The 12-item Medication Adherence Scale was used to quantify the mean adherence score. Results: Patients with psoriasis or chronic dermatitis were less adherent to treatments than patients with acne vulgaris, hair growth disorder, or vitiligo. Oral treatment and phototherapy had higher mean adherence scores than injection or topical treatment. High adherence was found in female, single patients; those who did not feel stigmatized from using treatment; those who did not have bad experience with the treatment; those who did not suffer from forgetfulness; those who connected receiving treatment with a habit; those who did not lack treatment responsiveness; those who had an excellent relationship with a dermatologist; and patients with a lesion in an exposed area. Stepwise multiple linear regression was also used to identify the independent variables related to adherence score. Conclusion: Psoriasis and chronic dermatitis patients had the lowest mean adherence scores. Patient who were on oral medication had the highest adherence score, while those on topical medication had the lowest score. The thoughtful consideration of factors associated with high adherence is important for optimal therapeutic outcomes.

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The majority of skin lesions in pediatric primary care attention could be managed by teledermatology. Giavina Bianchi M, Santos AP, Cordioli E. PLoS One. 2019 Dec 2;14(12):e0225479. doi: 10.1371/journal.pone.0225479. eCollection 2019. <https://www.ncbi.nlm.nih.gov/pubmed/31790453>

Background: Teledermatology is a tool that provides accurate diagnosis and has been gaining more emphasis over time. It can be used for triage in primary care attention to address skin conditions improving access and reducing time to treatment for surgical, severe or even lethal diseases. Objectives: Our main goal was to evaluate the proportion of pediatric patient's lesions that could be managed using teledermatology in primary care attention. Secondly, we wanted to assess the ten most frequent skin conditions, the most common treatments and the referrals made by the teledermatologists to biopsy, in-presence dermatologist or kept at primary care attention. Methods: A cross-sectional retrospective study involving 6,879 individuals and 10,126 lesions was conducted by store-and-forward teledermatology during one year in the city of Sao Paulo, Brazil. If the photographs taken had enough quality, teledermatologist would diagnose, treat and orient each lesion (if possible), and choose one of three options for referral: direct to biopsy, in-presence dermatologist or kept at primary care attention. Results: Teledermatology managed 62% of the lesions to be kept at primary care attention, 37% were referred to dermatologists and 1% to

biopsy, reducing the mean waiting time for an in-presence visit in 78%. In patients 0-2 years old, lesions related to eczema and benign congenital lesions predominated. From 3-12 years old, eczema was still a major cause of complaint, as well as warts and molluscum. From 13-19 years old, acne was the most significant problem, followed by atopic dermatitis, nevi and warts. The most frequent treatment was emollient. Conclusion: Teletriage addressed 63% of the lesions without the need for an in-presence visit, suggesting that teledermatology can manage common diseases and optimize dermatological appointments for the most serious, surgical or complex skin illnesses, reducing the mean waiting time for them.

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Ocular surface changes in the treatment of rosacea: Comparison between low-dose oral isotretinoin and doxycycline. Andrade FMX, Picosse FR, Cunha LPD, et al. Arq Bras Oftalmol. 2019 Nov 25. pii: S0004-27492019005018102. doi: 10.5935/0004-2749.20200016. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31778446>

Purpose: To compare the impact of ocular changes between systemic treatment with doxycycline and low-dose oral isotretinoin in patients with moderate-to-severe papulopustular rosacea. Methods: Patients were randomized to receive either isotretinoin 0.3-0.4 mg/kg (group A) or doxycycline 100 mg/day (group B) for 16 weeks. Ocular symptoms were searched and evaluated, including best-corrected visual acuity (BCVA), Schirmer test, breakup time, rose bengal staining score, and meibomian gland dysfunction grading. The patients were retested at the end of treatment. Results: The present study included 39 patients (30 females and 9 males). Best-corrected visual acuity was > 20/30 in >90% of patients in both groups and did not change after treatment. After treatment, improvement in ocular symptoms and meibomian gland dysfunction was more pronounced in group B ($p < 0.05$); the other parameters did not reach statistical significance. Conclusion: Doxycycline improved meibomian gland dysfunction, ocular symptoms, and ocular surface in patients with rosacea. Even though some patients experienced worsening meibomian gland dysfunction and symptoms, no subject experienced any serious complications after administration of low-dose isotretinoin.

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Microneedling of scars: A large prospective study with long-term follow-up. Alster TS, Li MKY. Plast Reconstr Surg. 2019 Nov 19. doi: 10.1097/PRS.0000000000006462. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31790076>

Background: In recent years, microneedling has been increasingly used to treat a number of dermatologic conditions, including scars. Microneedling has been shown to promote neocollagenesis via mechanical disruption of the epidermis and dermis. The creation of multiple microchannels by needle penetration physically disrupts the compact collagen bundles while inducing new collagen and elastin synthesis and deposition within the fibrotic dermis. The latest microneedling devices are motorized and have improved the ability to more precisely and effectively treat scars. While initial studies have demonstrated improvement of (mostly) atrophic scars with microneedling, the number of patients evaluated have been relatively small and the devices and treatment protocols utilized as well as post-treatment follow-up have varied widely. Through this prospective observational study, we describe the results of microneedling on a consecutive series of 120 patients with a variety of scars. Clinical outcomes and adverse effects were evaluated over a 12 month period after treatment. Materials & methods: One hundred twenty consecutive patients (SPT I-VI) with facial and non-facial scars from a variety of etiologic sources (acne, trauma, surgery) were treated using a mechanical microneedling device. Treatments were delivered at monthly intervals by the same

operator using a motorized microneedling device with 2.5-3mm needle depths. No additional treatments (topical or intralesional) were applied. Representative clinical photographs were obtained at baseline, prior to each treatment, and 1, 3, 6, and 12 months after treatment. Two assessors blinded to treatment protocol rated clinical improvement of scars on a 5-point scale (0= no change, 1= 1-25% improvement, 2= 26-50% improvement, 3=51-75% improvement, 4= 76-100% improvement). Side effects were monitored and tabulated. Results: Patients received 1 to 6 consecutive monthly microneedling treatments. All scars improved at least 50% after an average of 2.5 treatments. Over 80% of patients had 50-75% improvement and 65% of patients demonstrated over 75% improvement. No significant clinical differences were observed in treatment responses of facial scars versus non-facial scars. Similarly, no significant clinical differences were seen between responses of atrophic acne scars and traumatic or surgical scars. Side effects were limited to transient erythema and edema. Rare purpura formation and herpes simplex reactivation were experienced. No scar worsening nor long-term adverse sequelae were observed. Conclusion: The clinical results obtained in this study support the use of microneedling for various facial and non-facial scars across a broad range of skin phototypes with minimal risk of adverse effects. Further studies will help to establish standardized protocols to optimize treatment outcomes for different scar types.

Comparative study of photodynamic therapy with riboflavin-tryptophan gel and 13% 5-aminolevulinic acid in the treatment of mild to moderate acne vulgaris. Wangsuwan S, Meephansan J. Clin Cosmet Investig Dermatol. 2019 Nov 5;12:805-814. doi: 10.2147/CCID.S227737. eCollection 2019. <https://www.ncbi.nlm.nih.gov/pubmed/31807046>

Background: Non-invasive photodynamic therapy (PDT) with 5-aminolevulinic acid (ALA) has been used as an alternative acne treatment for many years. Riboflavin and tryptophan are newly introduced photosensitizers. Objective: To compare the efficacy of PDT with riboflavin-tryptophan (RT) gel with that of 13% ALA for the treatment of facial acne. Methods: We performed a double-blind, split-face study of 37 subjects with mild to moderate facial acne vulgaris. RT gel was applied to half of the face, and 13% ALA was applied to the other half. Then, the whole face was irradiated using a blue light-emitting diode for 20 mins. Four treatment sessions were performed over a 4-week duration, at 1-week interval. The acne lesion counts and acne severity were assessed. Sebum secretion, Propionibacterium acne colonization, pore size, and skin texture were also evaluated. Results: PDT with RT gel demonstrated good efficacy, non-inferior to ALA for acne treatment, with a significant reduction in acne lesion counts, severity grading, porphyrin, and sebum output. The pore size and skin texture were improved. Side-effects were minimal and well tolerated in all subjects. Conclusion: PDT therapy with RT gel is an effective alternative treatment for acne vulgaris.

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Rosacea associated with increased risk of generalized anxiety disorder: A case-control study of prevalence and risk of anxiety in patients with rosacea. Incel Uysal P, Akdogan N, Hayran Y, et al. An Bras Dermatol. 2019 Oct 26. pii: S0365-0596(19)30070-4. doi: 10.1016/j.abd.2019.03.002. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31789266>

Background: Rosacea may result in emotional distress and anxiety. However, data on the presence of generalized anxiety disorder in rosacea patients are scarce. Objective: The aim of the study was to detect the frequency and level of anxiety and depression in patients with rosacea. Methods: A total of 194 consecutive rosacea patients and 194 age- and sex-matched controls were enrolled. Severity of rosacea was assessed in patients according to the criteria of the National Rosacea Society Ethics Committee. Both patients and controls were evaluated by the Generalized Anxiety Disorder 7-item scale, and severity was measured by the Generalized Anxiety Disorder-Adult. Results:

Individuals who were diagnosed with an anxiety and/or depressive disorder were more common in patient group (24.7% vs. 7.2%, $p < 0.01$). Female patients were particularly at risk for having generalized anxiety disorder (OR=2.8; 95% CI 1.15-7.37; $p = 0.02$). Study limitations: Single center study and limited sample size. Conclusions: Rosacea patients show greater risk of having anxiety disorders, including generalized anxiety disorder. Female patients, those with lower educational levels, those with phymatous subtype, untreated patients, and patients with prior psychiatric morbidity may be at particular risk for anxiety. It is essential to consider the psychological characteristics of patients to improve their well-being.

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Clinical Reviews

Photodynamic therapy for photodamage, actinic keratosis, and acne in the cosmetic practice. Moy LS, Frost D, Moy S. *Facial Plast Surg Clin North Am.* 2020 Feb;28(1):135-148. doi: 10.1016/j.fsc.2019.09.012. <https://www.ncbi.nlm.nih.gov/pubmed/31779937>

Photodynamic therapy is the combination of the initial application of a photosensitive chemical on the skin and then using typically a blue filter light of varying spectrums. This treatment protocol has been more useful and functional than other chemical peels and lasers for a variety of conditions. There has been efficacy in antiviral treatments, such as herpetic lesions; malignant cancers of the head and neck; and lung, bladder, and skin cancers. It has been tested for prostate cancers, cervical cancer, colorectal cancer, lung cancer, breast cancer, esophageal cancer, stomach cancer, pancreatic cancer, vaginal cancer, gliomas, and erythroplasia of Queyrat.

Gold nanoshell-mediated photothermal therapy for acne vulgaris. Park KY, Han HS, Hong JY, et al. *Dermatol Ther.* 2019 Dec 14:e13189. doi: 10.1111/dth.13189. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31837243>

Acne vulgaris, a common and chronic disorder of the pilosebaceous unit, affects up to 85% of adolescent and young adults. Although the current treatment options are effective, they are associated with unwanted side effects, chronicity, relapses, and recurrences. Recently, the Food and Drug Administration approved topical application of gold microparticles for selective photothermolysis to treat acne vulgaris. Here, we report two cases showing the efficacy of gold nanoshell-mediated photothermal therapy for recurrent acne that were refractory to previous treatments. In both cases, three sessions of photothermal therapy prevented the development of new lesions during a follow-up period of 3-4 months without causing any adverse effects. The two cases reported here demonstrate the possibility of gold nanoshell-mediated photothermal therapy as a safe and effective treatment for recurrent acne vulgaris in Asian patients.

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Topical antiandrogen therapies for androgenetic alopecia and acne vulgaris. Marks DH, Prasad S, De Souza B, et al. *Am J Clin Dermatol.* 2019 Dec 12. doi: 10.1007/s40257-019-00493-z. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31832993>

Androgenetic alopecia (AGA) and acne vulgaris are two conditions commonly seen by dermatologists. Androgens and the androgen receptors play an essential role in the manifestation of both conditions, and some systemic therapies function by interfering in this pathway. The use of topical antiandrogen therapies has gained traction in

recent years due to their potential efficacy in treating AGA and acne vulgaris, as well as their reduced adverse effects compared with systemic drugs. This review discusses the role of androgens in skin physiology and pathology and assesses the potential efficacy and safety of three topical antiandrogen therapies in the treatment of AGA and acne vulgaris. A literature review utilizing the PubMed, US Clinical Trials, and SCOPUS databases was conducted to search for randomized clinical trials, systematic reviews, cohort studies, case reports, and other relevant published studies on the pathogenesis and treatment of each condition with topical finasteride, ketoconazole shampoo, and cortexolone 17 α -propionate (C17P). The results demonstrated that topical formulations of finasteride, ketoconazole, and C17P are promising treatments for male pattern hair loss, especially topical finasteride in combination with topical minoxidil. Limited studies have shown C17P to have potential in treating acne vulgaris in both males and females. Minimal adverse effects have been reported in clinical trials for all topical therapies, although topical finasteride is still contraindicated in pregnancy. Recognizing the preliminary evidence, more peer-reviewed studies on topical antiandrogen treatments for AGA and acne vulgaris are necessary before definitive recommendations can be made regarding efficacy and safety. There is also a critical need to include more women in study populations for these treatments.

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Dietary intervention: An essential part of the management of patients affected by hidradenitis suppurativa.

Marasca C, Cinelli E, Annunziata MC, et al. *Dermatology*. 2019 Dec 5:1-2. doi: 10.1159/000504912. [Epub ahead of print] <https://www.karger.com/Article/FullText/504912>

We have read with great interest the article by Dempsey et al. (2019) who carried out a cross-sectional survey on dietary alterations made by patients affected by hidradenitis suppurativa (HS). Their study highlights how avoidance of particular foods is a common management strategy attempted by HS patients. In our opinion dietary patterns may have an important role in the management of HS, and the patients should be informed by experts about the most appropriate dietary plan for their clinical status. In line with our recent study, we suggest evaluation of individual nutritional status as an essential part in the management of HS patients. In fact, in HS patients, the clinical severity (HS Sartorius score) was negatively and statistically significantly associated with both phase angle (PhA) values and adherence to the Mediterranean diet (MD).

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European Dermatology Forum guidelines on topical photodynamic therapy 2019 Part 2: Emerging indications - field cancerization, photorejuvenation and inflammatory/infective dermatoses.

Morton CA, Szeimies RM, Basset-Séguin N, et al. *J Eur Acad Dermatol Venereol*. 2019 Dec 5. doi: 10.1111/jdv.16044. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31805604>

In addition to approved indications in non-melanoma skin cancer in immunocompetent patients, topical photodynamic therapy (PDT) has also been studied for its place in the treatment of, as well as its potential to prevent, superficial skin cancers in immune-suppressed patients, although sustained clearance rates are lower than for immunocompetent individuals. PDT using a nanoemulsion of ALA in a daylight or conventional PDT protocol has been approved for use in field cancerization, although evidence of the potential of the treatment to prevent new SCC remained limited. High-quality evidence supports a strong recommendation for the use of topical PDT in photorejuvenation as well as for acne, refractory warts, cutaneous leishmaniasis and in onychomycosis, although these indications currently lack approvals for use and protocols remain to be optimized, with more comparative evidence with established therapies required to establish its place in practice. Adverse events across all indications

for PDT can be minimized through the use of modified and low-irradiance regimens, with a low risk of contact allergy to photosensitizer prodrugs, and no other significant documented longer-term risks with no current evidence of cumulative toxicity or photocarcinogenic risk. The literature on the pharmacoeconomics for using PDT is also reviewed, although accurate comparisons are difficult to establish in different healthcare settings, comparing hospital/office-based therapies of PDT and surgery with topical ointments, requiring inclusion of number of visits, real-world efficacy as well as considering the value to be placed on cosmetic outcome and patient preference. This guideline, published over two parts, considers all current approved and emerging indications for the use of topical photodynamic therapy in Dermatology prepared by the PDT subgroup of the European Dermatology Forum guidelines committee. It presents consensual expert recommendations reflecting current published evidence.

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Chemical peeling for acne and melasma: Current status and innovations. Conforti C, Zalaudek I, Vezzoni R, et al. *G Ital Dermatol Venereol.* 2019 Dec 4. doi: 10.23736/S0392-0488.19.06425-3. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31804050>

The skin is a dynamic organ that continuously eliminates an infinite number of keratinized cells through physiological mechanism. Chemical peeling is a widely used cosmetic procedure in medical practice. This technique consists of the application of one or more chemical ablative agents to the skin's surface in order to induce keratolysis or keratocoagulation. Exfoliation is followed by skin and epidermal regeneration from the adjacent epithelium and skin adnexa. Moreover, through an inflammatory reaction and the activation of the inflammation mediators, an increase in fibroblastic synthesis and in the production of new collagen and glycosaminoglycan fibres is induced. After the first treatment session, the appearance and the texture of the skin are significantly improved. Peeling agents may be divided into superficial (epidermis-papillary dermis), medium-depth (papillary to upper reticular dermis) and deep subtypes based on the depth of their penetration (mid-reticular dermis).¹ Superficial peel is mainly used for dyschromia, acne, post-inflammatory hyperpigmentation, melasma and actinic keratosis. Medium depth peel mainly treats solar keratosis or lentigines, pigmentary disorders and superficial scars. Skin photo-ageing, deep scars or wrinkles and precancerous skin lesions require a deep chemical peeling. The aim of this article is to review recent advances in chemical peel of melasma and acne.

Essential oils as topical anti-infective agents: A systematic review and meta-analysis. Deyno S, Mtewa AG, Abebe A, et al. *Complement Ther Med.* 2019 Dec;47:102224. doi: 10.1016/j.ctim.2019.102224. Epub 2019 Oct 24. <https://www.ncbi.nlm.nih.gov/pubmed/31780027>

Objective: This study summarized evidence on the efficacy and safety of essential oils (EOs) in the treatment of topical infections. **Design and setting:** Systematic review of clinical trials conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guideline. Electronic databases of the Cochrane, PubMed, EMBASE, Web of Science, and Scopus were searched from inception to November 2018. **Intervention:** Essential oil of any type, standard treatment and placebo. **Main outcome measures:** Outcomes of the study include total acne count, acne severity index, reduction in total acne surface area, number of non-inflammatory acne lesions and inflammatory acne lesions, microbial cure rate, microbial decolonization rate, and new microbial emergence. **Results:** Non-significant but higher proportion of MRSA was cleared in EOs group (69% [95%CI: 34%, 96%]) compared to routine care (45% [95%CI: 36%, 53%]). Essential oils significantly lowered level of new MRSA emergence (9% [95% CI: 5%, 14%], I² = 86.59%) compared to routine care (53% [95%CI: 30%, 75%], I² = 86.59%). Four of the five studies on acne treatment showed equal or superior efficacy of EOs and the remaining one showed inferior efficacy to a control. In treatment of topical fungal infections, efficacy of essential oils were non-inferior

compared to a standard treatment but superior to a placebo. Conclusion: Essential oils could be considered as alternative treatment for acne, decolonization of MRSA, and topical fungal infections, yet the low quality and heterogeneity among the studies calls for further studies.

The role of exposome in acne: Results from an international patient survey. Dreno B, Shourick J, Kerob D, et al. *J Eur Acad Dermatol Venereol.* 2019 Nov 30. doi: 10.1111/jdv.16119. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31785166>

Background: Acne severity and its response to treatment may be influenced by internal and external factors: the exposome. Objectives: The aim of this international real-life survey was to assess the most involved exposome factors in acne. Methods: 11000 individuals, aged between 15 and 39 years, with clinically confirmed acne or without acne, defined by age, gender and prevalence, were invited to participate in an internet survey of 63 questions in order to assess the frequency of identified acne exposome factors. Results: Data from 6679 questionnaires were used for statistical analysis purposes: 2826 from the acne group and 3853 from the control group. Nibbling, consumption of dairy products, sweets, alcohol, or whey proteins, as well as exposure to pollution, stress, certain mechanical factors and humid or hot weather or sun exposure, were significantly (all $P \leq 0.05$) more frequently reported for the acne group than for the control group. This was not the case for tobacco consumption. Data regarding the impact of cannabis consumption were insufficient for drawing any conclusions. Conclusions: Data from this international, anonymized internet questionnaire conducted with more than almost 6700 participants add new arguments to assumptions made that certain exposome factors have an impact on acne. Nutrition, pollution, stress and harsh skin care, as well as climate and sun exposure may be considered the most frequent factors related to acne.

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Metabolic syndrome and skin diseases. Hu Y, Zhu Y, Lian N, et al. *Front Endocrinol (Lausanne).* 2019 Nov 20;10:788. doi: 10.3389/fendo.2019.00788. eCollection 2019. <https://www.ncbi.nlm.nih.gov/pubmed/31824416>

The increasing prevalence of Metabolic syndrome (MetS) is a worldwide health problem, and the association between MetS and skin diseases has recently attracted growing attention. In this review, we summarize the associations between MetS and skin diseases, such as psoriasis, acne vulgaris, hidradenitis suppurativa, androgenetic alopecia, acanthosis nigricans, and atopic dermatitis. To discuss the potential common mechanisms underlying MetS and skin diseases, we focus on insulin signaling and insulin resistance, as well as chronic inflammation including adipokines and proinflammatory cytokines related to molecular mechanisms. A better understanding of the relationship between MetS and skin diseases contributes to early diagnosis and prevention, as well as providing clues for developing novel therapeutic strategies.

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Isotretinoin-induced pruritic erythematous lesions and acute chest pain in a 15-year-old girl. Doğan Alataş Ö, Alataş ET. *Am J Emerg Med.* 2019 Nov 15:158479. doi: 10.1016/j.ajem.2019.158479. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31784393>

Isotretinoin is widely used in the treatment of acne vulgaris for more than 30 years (1). In addition to its systemic side effects, isotretinoin may also cause mucocutaneous side effects including cheilitis, nasal hemorrhage, dry skin, itching, rash, pigmented purpuric dermatosis, dry nose, purpura, and photosensitivity. We report a case of a 15-year-old girl given isotretinoin for severe acne vulgaris who developed pruritic erythematous lesions and chest pain 5 min after taking the first dose 20 mg of isotretinoin.