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American Acne & Rosacea Society Member Newsletter | www.acneandrosacea.org

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AARS News

AARS Completed Successful National Acne Awareness Month Campaigns throughout June

The AARS was excited to release several tools for use in dermatology offices to better explain resources for acne patients, as well as lots of social media videos featuring AARS members combating myths and misperceptions around acne causes and treatments. Feel free to continue to access the American Acne and Rosacea Society (AARS) Social Media Toolkit for cover images, banners, and photos you can use on your social channels. You'll also find popular hashtags and sample text for posting. All assets are free for use by AARS members by downloading them here. Acne Awareness Month presented an opportunity for Board-certified dermatologists, the nurse practitioners (NPs) and physician assistants (PAs) who work with them, and other medical staff to promote medically-based care for acne.

"As experts in the diagnosis and management of acne, AARS members want to reach individuals of all ages to educate them about acne and the many advancements in treatment," says Andrea Zaenglein, MD, FAAD, President of AARS. "There is a lot of confusion and misinformation about acne, especially online. This month is a great time to emphasize the facts." Follow us on social media on Facebook, Instagram, and on LinkedIn as we celebrate our patients and increase our efforts to help them understand acne causes, treatments, and quality of life options. Like and share informative content, such as our video series debunking acne myths on TikTok. Hosted at acneandrosacea.org and posted on social media, videos feature our members sharing #AcneFacts to support patients' skin health.

Industry News

FDA clears AviClear® as a long-term treatment for mild to severe acne. Cutera, Inc. June 15, 2023. https://ir.cutera.com/news-releases/news-release-details/fda-clears-aviclearr-long-term-treatment-mild-severe-acne

AviClear by Cutera® makes history with another first to market milestone proving to be safe and effective across all skin types with long lasting results. BRISBANE, Calif., Jun. 15, 2023 - Cutera, Inc. (Nasdaq: CUTR) a global leader in aesthetic and dermatology solutions, today announces a new U.S. Food and Drug Administration Clearance of AviClear as a long-term treatment for mild to severe inflammatory acne vulgaris. This is the first acne therapy to claim long term effectiveness for mild, moderate and severe acne. AviClear initially received FDA clearance in March 2022 following an extensive clinical trial. Now after months of clinical data evaluation, the FDA has additionally recognized AviClear as a clinically efficacious and proven treatment for the long-term treatment of acne. AviClear selectively targets and suppresses the sebaceous glands, eliminating acne at the source, offering a durable and prescription free option for patients and providers. "Those of us who have been using AviClear on our patients since the initial FDA Clearance recognized that the results of the treatment get progressively better with time," said Emmy M. Graber, MD, MBA, the Founder of The Dermatology Institute of Boston and an internationally known acne expert. "I am thrilled that the FDA has now acknowledged these long-lasting results, giving both patients and dermatology providers greater confidence in the efficacy and durability of AviClear results." As the first 1726nm laser to be introduced to the market, AviClear continues to challenge the status quo in the acne landscape. In three, 30-minute treatment sessions 90% of patients experienced visible improvement in their acne six months after their third session.1 According to 12-month clinical data, improvement increases to 92%2, confirming long-term efficacy of acne clearance and skin quality over time. "We are proud to receive such a significant and landmark designation. The success of AviClear is a testament to Cutera's ingenuity and innovation as a pioneering force in results-driven technology," said Sheila A. Hopkins, Interim CEO at Cutera. "Throughout Cutera's 25-year history, we have continued to develop devices that offer physicians and their patients breakthrough treatment options, and AviClear is a great example of our game changing technologies." Interested providers and patients are encouraged to visit www.AviClear.com for more information.

About Cutera, Inc.: Brisbane, California-based Cutera is a leading provider of aesthetic and dermatology solutions for practitioners worldwide. Since 1998, Cutera has been developing innovative, easy-to-use products that harness the power of science and nature to enable medical practitioners to offer safe and effective treatments to their patients. For more information, call +1 415-657-5500 or 1-888-4CUTERA or visit Cutera.com.
1,2 Data on file. FDA clearance study. Cutera, Inc.
Media: EvolveMKD – Cutera@EvolveMKD.com
Investor Relations: Greg Barker, VP of FP & A – IR@Cutera.com
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New Medical Research

The effect of oral isotretinoin therapy on meibomian gland characteristics in patients with acne vulgaris. Zakrzewska A, Wiącek MP, Słuczanowska-Głąbowska S, et al. Ophthalmol Ther. 2023 Aug;12(4):2187-2197. doi: 10.1007/s40123-023-00737-6. Epub 2023 Jun 10. https://pubmed.ncbi.nlm.nih.gov/37301783/
Introduction: The aim of the study was to determine the effect of oral isotretinoin therapy on the functional and morphological condition of the anterior segment of the eye, with particular emphasis on the meibomian glands. Methods: Twenty-four patients (48 eyes) with a diagnosis of acne vulgaris were involved in the survey. All patients underwent a thorough ophthalmological examination at three time points: before therapy, 3 months after the start of therapy, and 1 month after the completion of isotretinoin therapy. The physical examination included the following elements: blink rate, analysis of the lid margin abnormality score (LAS), tear film break-up time (TFBUT) and Schirmer's test, meibomian gland loss (MGL), and the evaluation of the meibum quality score (MQS) and meibum expressibility score (MES). Additionally, the total score of an ocular surface disease index (OSDI) questionnaire was analysed. Results: In comparison with pretreatment values, significant increases in OSDI during and after the treatment ($p = 0.003$ and $p = 0.004$, respectively) were observed. Substantial deterioration during the treatment was observed for MGL ($p < 0.0001$), MQS ($p < 0.001$) and LAS ($p < 0.0001$), while an improvement in those parameters after isotretinoin cessation was observed ($p = 0.006$, $p = 0.02$ and $p = 0.0003$, respectively). The frequency of using artificial eye drops was positively associated with MGL during (Spearman's rank correlation coefficient (Rs) = + 0.31; $p = 0.03$) and after the cessation of the therapy (Rs = + 0.28; $p = 0.04$). Meibomian gland atrophy correlated significantly with MQS during (Rs = + 0.29; $p = 0.04$) and after treatment (Rs = + 0.38; $p = 0.008$). The decrease in TFBUT values correlated with increased LAS (Rs = - 0.31; $p = 0.03$) during the course of isotretinoin usage. We found no changes in Schirmer's test or blink rates. Conclusion: Isotretinoin therapy leads to increased ocular complaints related to lipid tear film component dysfunction. This is due to reversible changes in meibomian gland morphology and function observed during drug usage.
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Prevalence and risk factors of acne scars in patients with acne vulgaris. Liu L, Xue Y, Chen Y, et al. Skin Res Technol. 2023 Jun;29(6):e13386. doi: 10.1111/srt.13386. https://pubmed.ncbi.nlm.nih.gov/37357642/
Background: Acne scar is a persistent complication of acne vulgaris. However, the prevalence and risk factors are still unclear. This study aimed to assess the global prevalence and risk factors of acne scars in patients with acne. Materials and methods: A systematic search of published studies in three databases was performed and the meta-analyses were conducted. Results: Finally, we included 37 studies involving 24 649 acne patients. And, the pooled prevalence of acne scars in these patients was 47% (95% confidence interval [CI]: 38-56%). Besides, the differences in prevalence were observed based on the subgroup analysis for age, gender, acne severity, source of patients, and

so on. Subsequently, we quantified the relationship of three risk factors with acne scars: male gender (odds ratio [OR]: 1.58, 95% CI: 1.19-2.09), positive family history of acne (OR: 2.73, 95% CI: 1.26-5.91), and acne severity (OR for moderate acne: 2.34, 95% CI: 1.54-3.57; OR for severe acne: 5.51, 95% CI: 2.45-12.41). Conclusion: Herein, we found that 47% of acne patients suffered from acne scars and identified three risk factors: male gender, positive family history of acne, and acne severity. In order to reduce acne scarring, attention and effective therapy early in the course of acne is important.

Hyperspectral assessment of acne skin exposed to intense pulsed light (IPL) intense pulsed light in acne treatment. Zdrada-Nowak J, Stolecka-Warzecha A, Odrzywołek W, et al. Skin Res Technol. 2023 Jun;29(6):e13338. doi: 10.1111/srt.13338. https://pubmed.ncbi.nlm.nih.gov/37357661/

Background: The mechanism of intense pulsed light action on the skin is based on selective photothermolysis. The light delivered to the tissue is scattered and absorbed by chromophores that absorb a beam of radiation of a specific length. The skin reflectance changes depending on the physiological state of the tissue, as shown by the hyperspectral camera. The aim of the study was to assess the hyperspectral reflectance of acne skin before and after intense pulsed light (IPL) therapy and to compare it with the reflectance of healthy skin. Materials and methods: The study involved 27 volunteers with diagnosed moderate acne. The control group consisted of 20 people without acne lesions. All acne volunteers underwent a series of four treatments using IPL at weekly intervals. The volunteers with acne lesions were photographed before the series of treatments and a week after the 4th treatment. Results: Acne skin shows lower reflectance than healthy skin. Acne skin after IPL therapy is characterized by a higher reflectance compared to acne skin before the therapy and resembles the reflectance of the skin of the control group. A statistically significant difference was found between the acne skin before the treatments and the skin of the control group. Conclusions: The effect of IPL therapy on acne skin is the increase of its reflectance by reducing the number of chromophores, which brings it closer to the reflectance value of healthy skin. Hyperspectral imaging allows for: the evaluation of the treated skin at each stage, a precise selection of the light wavelength depending on the problem, and therefore, for optimizing the number of irradiations and increasing the safety of the therapy.

Topical metformin 30% gel in the treatment of acne vulgaris in women, a split face, placebo-controlled study. El-Komy MHM, Abdo NMK, Shamma RN, Bedair NI. Exp Dermatol. 2023 Jun 26. doi: 10.1111/exd.14868. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37357907/

Acne vulgaris (AV), a widely common disorder, that negatively affects the quality of life. Metformin is a relatively safe, cheap and well tolerated drug that is widely used in the treatment of Diabetes. Systemic metformin has demonstrated promising results in treating acne, while topically it was studied for melasma and recalcitrant central centrifugal cicatricial alopecia. To study the safety and efficacy of topical metformin 30% in the treatment of AV. Twenty-seven female AV patients were asked to blindly apply metformin and placebo gels to either side of the face for 12 weeks. AV lesion count was performed at baseline, at each visit and 4 weeks after end of treatment. At the end of the treatment period, the treated side showed significant improvement of comedones, papules and nodules but not pustules. Although, lesions count increased 1 month after stopping treatment, comedones and papules numbers were still significantly less on the metformin side compared to placebo. No side effects were reported. The limited number of patients studied and the limited follow-up period. The metformin effect was not studied on cellular and molecular levels. Topical metformin nanoemulsion gel can be a promising safe and effective treatment of AV.

Acne among Japanese patients with atopic dermatitis receiving upadacitinib in the phase 3 rising up study. Hayashi N, Ikeda M, Liu J, et al. Dermatol Ther (Heidelb). 2023 Jun 25. doi: 10.1007/s13555-023-00961-9. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37356075/

Introduction: Upadacitinib, an oral selective Janus kinase (JAK) inhibitor, is used to treat moderate-to-severe atopic dermatitis (AD). Acne is the most common treatment-emergent adverse event in patients with AD treated with upadacitinib. In this post hoc analysis, we describe the acne events in Japanese patients with AD who received upadacitinib during the Rising Up study. Methods: In this phase 3, double-blind, 3-year trial evaluating the safety and efficacy of upadacitinib 15 mg or 30 mg in Japanese patients with moderate-to-severe AD, patients were randomized 1:1:1 to receive upadacitinib 15 mg, 30 mg, or placebo for up to 16 weeks. At week 16, placebo-treated patients were re-randomized 1:1 to receive upadacitinib 15 mg or 30 mg. The incidence, characteristics, and management of treatment-emergent acne events up to the 52-week cutoff date were summarized. Results: Among 272 patients in this analysis, the incidence of acne was higher in patients receiving upadacitinib compared with patients who received placebo. The rate of acne was higher in patients receiving upadacitinib 30 mg (32.4%) compared with those taking upadacitinib 15 mg (17.3%) during the long-term treatment period. All cases of acne were mild or moderate; no cases led to study drug discontinuation. The mean (range) of acne onset was 135.4 (7-465) days after starting study drug. Most acne occurred on the face; inflammatory papules were the most common morphology. Risk factors for acne included relevant concomitant medications (e.g., corticosteroids) started before acne onset and family and personal history of acne. Acne was generally managed with topical treatments. Conclusion: Mild or moderate acne reported in Japanese patients with AD receiving upadacitinib occurred in a dose-dependent manner and had a variable onset time. Acne was readily managed with topical treatments. Patients and clinicians should be aware of the risk of acne associated with upadacitinib treatment for AD.

Efficacy and safety of microencapsulated benzoyl peroxide and microencapsulated tretinoin for the treatment of acne vulgaris: Results from two phase 3 double-blind, randomized, vehicle-controlled studies. Del Rosso J, Sugarman J, Green L, et al. J Am Acad Dermatol. 2023 Jun 23;S0190-9622(23)01182-9. doi: 10.1016/j.jaad.2023.05.093. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37356627/

Background: Benzoyl peroxide and tretinoin are commonly prescribed acne treatments. Historically, they have been difficult to combine in a single formulation due to chemical instability, and both medications are potentially irritating. Microencapsulation helps overcome these challenges. Objective: Examine efficacy, safety, and tolerability of encapsulated BPO/encapsulated tretinoin (E-BPO/T) cream, 3%/0.1%. Methods: Subjects ≥9 years old with moderate to severe acne were enrolled in 2 multicenter, double-blind, vehicle-controlled, parallel trials and randomized (2:1) to 12 weeks of once-daily E-BPO/T (n=571) or vehicle cream (n=287). Results: E-BPO/T was significantly superior to vehicle in both studies, with more subjects achieving IGA success with E-BPO/T (38.5%/25.4%) versus vehicle (11.5%/14.7%; P<.001/P= .017). The change from baseline in inflammatory lesion count for E-BPO/T was -21.6 versus -14.8 for vehicle (P<.001) in study 1 and -16.2 versus -14.1 (P=.018) in study 2. The changes from baseline in noninflammatory lesions for E-BPO/T were -29.7 versus -19.8 for vehicle (P<.001) and -24.2 and -17.4 (P<.001) in studies 1 and 2, respectively. E-BPO/T was well tolerated in both studies. Limitations: Long-term data are not available. Conclusion: E-BPO/T provided statistically significant and clinically relevant improvements in IGA and inflammatory and noninflammatory lesion counts and was well tolerated in subjects with moderate to severe acne.

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Acne characteristics in Latin American patients and the potential role of trifarotene. da Rocha MAD, Fierro-Arias L, Cohen Sabban EN, et al. Int J Dermatol. 2023 Jun 20. doi: 10.1111/ijd.16754. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37340535/

Background: Individualization of treatment based on acne type and severity, location, disease burden, and patient preference is required to maximize efficacy, safety, and adherence to therapy. Latin American populations have unique attributes that must be considered as part of this process to improve clinical success and achieve patient goals. Acne is more common among patients with darker skin phototypes, in whom it is often associated with postinflammatory hyperpigmentation and scarring-the most important acne sequelae-potentially due to more frequent and more severe underlying inflammatory processes in this population. Discussion: These data argue for an early and proactive approach to managing acne in these patients with agents that target the inflammatory processes that underlie acne and its sequelae. As a class, retinoids offer a spectrum of activity that may be useful in addressing the unique needs of Latin American populations. Conclusion: Trifarotene, a novel, selective retinoid, has been evaluated in relevant patient populations.

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Targeting inflammation in acne: Current treatments and future prospects. Cruz S, Vecerek N, Elbuluk N. Am J Clin Dermatol. 2023 Jun 16. doi: 10.1007/s40257-023-00789-1. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37328614/

Acne is a common, chronic inflammatory condition affecting millions of people worldwide, with significant negative impact on quality of life and mental health. Acne is characterized by comedones, inflammatory papules, pustules, and nodulocystic lesions, with long-lasting sequelae including scarring and dyspigmentation, the latter of which is more common in skin of color. The four main pillars of acne pathophysiology include alteration of sebum production and concentration, hyperkeratinization of the follicular unit, Cutibacterium acnes strains, and an inflammatory immune response. Newer research has provided greater insight into these pathophysiologic categories. This greater understanding of acne pathogenesis has led to numerous new and emerging treatment modalities. These modalities include combinations of existing treatments, repurposing of existing agents historically used for other conditions, new topical treatments, novel antibiotics, topical and oral probiotics, and various procedural devices. This article will provide an overview of emerging treatments of acne and their link to our current and improved understanding of acne pathogenesis.

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Novel 1726 nm laser demonstrates durable therapeutic outcomes and tolerability for moderate-to-severe acne across skin types. Alexiades M, Kothare A, Goldberg D, Dover JS. J Am Acad Dermatol. 2023 Jun 14;S0190-9622(23)01075-7. doi: 10.1016/j.jaad.2023.05.085. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37328000/

Background: Traditional acne management with topical therapy, systemic antibiotics, hormonal agents, or oral isotretinoin requires compliance and may produce significant side effects. However, alternative treatments with lasers had failed to demonstrate durable clearance. Objective: To assess the tolerability and therapeutic outcomes of a novel 1726-nm laser treatment of moderate-to-severe acne across skin types. Methods: A prospective, open-label, single-arm, IDE-approved, IRB-approved study of 104 subjects with moderate-to-severe facial acne and Fitzpatrick Skin Types ranging from II-to-VI was conducted. Subjects received three laser treatments at 3(-1/+2)-week intervals. Results: Following final treatment, ≥50% reduction in active acne inflammatory lesions was 32.6% at 4-weeks follow-up, increasing further to 79.8% and 87.3% at 12 and 26-weeks, respectively. The percentage of subjects clear or almost clear increased from 0% at baseline to 9%, 36.0%, and 41.8% at 4-, 12- and 26-weeks follow-up. No serious adverse events were observed related to device or protocol; treatments were well tolerated, requiring no anesthetic.

Therapeutic outcomes and discomfort were similar across all skin types. Limitations: Lack of control group. Conclusions: The study findings demonstrate the novel 1726 nm laser is well tolerated with durable progressive post-treatment improvement to at least 26 weeks for moderate-to-severe acne across skin types.
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Fractional picosecond laser for atrophic acne scars: A meta-analysis. Li J, Duan F, Kuang J. J Cosmet Dermatol. 2023 Jun 13. doi: 10.1111/jocd.15862. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37310182/
Background: Conventional fractional lasers (FLs) are well-established treatments for acne scars with some inevitable adverse events. Fractional picosecond laser (FPL) is increasingly used for acne scars. Aims: To compare the efficacy and safety of FPL with non-picosecond FLs for acne scars. Methods: PubMed, Embase, Ovid, Cochrane Library, and Web of Science databases were searched. We also searched ClinicalTrials, WHO ICTRP, and ISRCTN websites. A meta-analysis was conducted to assess the clinical improvement and adverse events after FPL compared with other FLs. Results: Overall, seven eligible studies were included. Three physician evaluation systems showed no difference between FPL and other FLs in clinical improvement of atrophic acne scars (MD = 0.64, 95% CI:-9.67 to 10.94; MD = -0.14, 95% CI:-0.71 to 0.43; RR = 0.81, 95% CI:0.32 to 2.01). Patient-assessed effectiveness was also not significantly different between FPL and other FLs (RR = 1.00, 95% CI:0.69 to 1.46). Although temporary pinpoint bleeding was more common after FPL (RR = 30.33, 95% CI:6.14 to 149.8), the incidence of post-inflammatory hyperpigmentation (PIH) and pain level were lower for FPL (RR = 0.16, 95% CI:0.06 to 0.45; MD = -1.99, 95% CI:-3.36 to -0.62). Additionally, edema severity after treatment did not differ between the two groups (MD = -0.35, 95% CI:-0.72 to 0.02). As for the duration of erythema, no difference between FPL and nonablative FL groups (MD = -1.88, 95% CI:-6.28 to 2.51). Conclusions: FPL seems similar to other FLs regarding clinical improvement of atrophic acne scars. With lower PIH risk and pain scores, FPL is more suitable for acne scar patients prone to PIH or sensitive to pain.
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An overlooked burden of acne in adolescents: The psychosocial well-being of their families. Tuğrul B, Demirdağ HG, Aslan C, et al. An Pediatr (Engl Ed). 2023 Jun 12;S2341-2879(23)00130-8. doi: 10.1016/j.anpede.2023.06.009. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37316404/
Introduction: Acne vulgaris is significantly associated with an increased burden of care and has an important impact on the quality of life (QoL) and self-esteem of affected individuals. We aimed to assess the QoL of adolescents with acne and their families as well as the association of QoL with acne severity, treatment response, duration of acne and localization of lesions. Material and methods: The sample included a total of 100 adolescents with acne vulgaris, 100 healthy controls and their parents. We collected data on sociodemographic characteristics, presentation of acne, duration of acne, treatment history, treatment response, and parental sex. We used the Global Acne Severity scale, Children's Dermatology Life Quality Index (CDLQI), and the Family Dermatology Life Quality Index (FDLQI). Results: In the group of patients with acne, the mean CDLQI score in the patients was 7.89 (SD, 5.43) and the mean FDLQI score in the parents was 6.01 (SD, 6.11). In the control group, the mean CDLQI score in healthy controls was 3.92 (SD, 3.88) and the mean FDLQI score in their family members was 2.12 (SD, 2.91). We found a statistically significant difference between the acne and control groups in CDLQI and FDLQI scores ($P < .001$). There were also statistically significant differences in the CDLQI score based on the duration of acne and the response to treatment. Conclusions: Patients with acne and their parents had a decreased QoL compared with healthy controls. Acne was associated with impaired QoL in family members. Assessing QoL in the family in addition to that of the patient may allow an improved management of acne vulgaris.
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Serum amyloid A: A potential new marker of severity in hidradenitis suppurativa. Iannone M, Salvia G, Fidanzi C, et al. Skin Appendage Disord. 2023 Jun;9(3):165-168. doi: 10.1159/000528658. Epub 2023 Feb 20. https://pubmed.ncbi.nlm.nih.gov/37325280/

Introduction: Hidradenitis suppurativa (HS) is a chronic inflammatory skin disease with systemic inflammation and high impact on quality of life. Treatment strategies are still inadequate with a lack of inflammation biomarkers. We conducted a prospective study to assess the correlation between serum amyloid A (SAA) levels and active lesion count; disease severity; Dermatology Life Quality Index (DLQI); smoking; BMI; and lesion sites. Methods: Forty-one patients (M/F: 22/19) were enrolled. Demographic, clinical, laboratory, and therapeutic data were assessed at baseline on patients not under treatment or in wash-out from systemic treatment for at least 2 weeks. Associations were investigated by univariate and multivariate analyses. Results: SAA levels were significantly associated with number of nodules ($p = 0.005$), abscesses ($p < 0.001$), fistulas ($p = 0.016$), and severe IHS4 ($p = 0.088$ and $r = 0.514$). Gluteal localization was correlated with high values of mSartorius and severe IHS4. Conclusions: We recommend assessment of SAA levels to monitor therapeutic response in patient with HS in order to prevent disease's flare and potential complications.

Efficacy and safety of detachable microneedle patch containing triamcinolone acetonide in the treatment of inflammatory acne. Thantaviriya S, Kamanamool N, Sansureerungsikul T, et al. Clin Cosmet Investig Dermatol. 2023 Jun 5;16:1431-1441. doi: 10.2147/CCID.S411378. eCollection 2023. https://pubmed.ncbi.nlm.nih.gov/37303985/

Background: Detachable microneedles (DMNs) are dissolvable microneedles that detach from the base during administration. The use of DMNs-containing steroids for acne has never been investigated. Methods: Thirty-five patients with facial inflammatory acne were evaluated for acne treatment efficacy and safety of DMNs and DMNs containing triamcinolone acetonide (TA) via a 28-day randomized, double-blind, controlled trial. Four inflammatory acne lesions were selected from each participant and randomly treated with a single application of 700 μm DMNs containing 262.02 ± 15.62 μg TA (700DMNTA), 1000 μm DMNs containing 160.00 ± 34.92 μg TA (1000DMNTA), 700 μm DMN without TA (700DMN), and a control. Efficacy was measured by assessing physical grading, diameter, volume, erythema index, and melanin index. Safety was evaluated by assessing reports of adverse effects from patients and physicians. Results: All three treatment groups achieved resolution of inflammatory acne significantly faster than the control group, with median times for resolution of 4.6, 5.25, 6.7, and 8.1 days in the 1000DMNTA, 700DMNTA, 700DMN, and control, respectively. When compared to the control group, the diameters and post-acne erythema of inflammatory acne were significantly reduced in the treatment groups. The 1000DMNTA decreased acne size and erythema more than other treatments. DMNTA also tended to decrease acne size and erythema more than DMN with no TA, but there was no statistically significant difference. All participants preferred DMN over conventional intralesional steroid injection due to less pain and self-application. No adverse effect was observed. Conclusion: DMNTA is a safe, effective alternative treatment for inflammatory acne and significantly reduces post-acne erythema. Download Reference Document

Development of a specific variant of Patient Benefit Index (PBI) assessing patient needs, goals and benefits in rosacea treatment. Augustin M, Sommer R, Blome C, et al. Patient Prefer Adherence. 2023 Jun 1;17:1335-1345. doi: 10.2147/PPA.S378724. eCollection 2023. https://pubmed.ncbi.nlm.nih.gov/37284248/

Introduction: Evaluation of patient-reported outcomes including health-related quality of life (HRQoL) and perceived benefits from treatment has become a fundamental component of medical decision-making. Standardized evaluation of treatment benefits in rosacea based on patient preferences is still lacking. Objective: Development and validation of an instrument for recording patient-defined benefits in rosacea therapy based on the Patient Benefit Index (PBI)

methodology. Patients and methods: In an open survey of n = 50 patients, potential benefits of therapy from the patient's perspective were examined. The generated item pool was combined with pre-existing PBI items for other skin conditions and reviewed by an expert panel of dermatologists, psychologists and patients. Items were condensed to n = 25 and converted into a Likert-scaled questionnaire. The validity and feasibility of the resulting Patient Benefit Index for rosacea (PBI-RO) were tested on individuals with rosacea recruited from a German rosacea patient organization. Results: N = 446 patients with rosacea completed the PBI-RO. The internal consistencies measured by Cronbach's alpha were high (Patient Needs Questionnaire [PNQ] 0.94). Mean PBI-RO was 1.9 ± 1.2 (scale from 0 = no benefit to 4 = maximum benefit), 23.5% of the patients experienced a PBI-RO < 1 (no clinically relevant benefit). The PBI-RO correlated with HRQoL, health state, current extent of rosacea lesions and treatment satisfaction. The highest correlation was found between PBI-RO and satisfaction with previous treatment (r = -0.59, p < 0.001); correlation with the extent of rosacea lesions was low (r = 0.16, p < 0.001). Conclusion: The PBI-RO shows satisfying internal consistency and construct validity. It offers the option of a patient-weighted evaluation of the therapeutic benefit of rosacea therapy and may add to more stringent goal orientation in therapy.
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Clinical Reviews

Oxidative stress and metabolic syndrome in acne vulgaris: Pathogenetic connections and potential role of dietary supplements and phytochemicals. Bungau AF, Radu AF, Bungau SG, et al. Biomed Pharmacother. 2023 Aug;164:115003. doi: 10.1016/j.biopha.2023.115003. Epub 2023 Jun 12. https://pubmed.ncbi.nlm.nih.gov/37315434/
Acne vulgaris is a highly prevalent skin condition caused by androgen-induced elevated sebum secretion, abnormal keratinization, bacterial colonization, and inflammation. Current research indicates a link between acne vulgaris and the metabolic syndrome, a group of disorders that includes obesity, insulin resistance, hypertension, and dyslipidemia. This link is thought to be modulated by excessive concentrations of oxidative stress markers and chronic inflammation, which are included in the pathophysiological mechanisms shared by both conditions. Excessive generation of reactive oxygen species damages cellular components and initiates an inflammatory response, hence promoting the development of both disorders. The current narrative review focuses on the molecular implications of inflammatory, hormonal, and environmental factors in the acne-metabolic syndrome correlation. Furthermore, it outlines the current state of knowledge related to the phyto-therapeutic approach to these conditions as an adjuvant strategy to allopathic treatment, but future multicenter and larger-scale research studies are needed establish new algorithms to be included in the future management of patients with these conditions.
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Hidradenitis Suppurativa. Jenkins T, Isaac J, Edwards A, Okoye GA. Dermatol Clin. 2023 Jul;41(3):471-479. doi: 10.1016/j.det.2023.02.001. https://pubmed.ncbi.nlm.nih.gov/37236715/
Hidradenitis suppurativa (HS) is a chronic disease characterized by recurrent painful abscesses and chronic sinus tracts in intertriginous areas. In the United States, HS disproportionally affects adults of African-American heritage. Depending on the severity of disease, the consequences of HS can be far-reaching, significantly affecting mental health and quality of life. In recent years, concerted research efforts have been made to better understand the pathophysiology of the disease as well as identify emerging new treatment targets. Herein, we discuss the clinical presentation, diagnostic criteria, and treatment approach of HS with a focus on skin of color.
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The updates and implications of cutaneous microbiota in acne. Huang C, Zhuo F, Han B, et al. Cell Biosci. 2023 Jun 21;13(1):113. doi: 10.1186/s13578-023-01072-w. https://pubmed.ncbi.nlm.nih.gov/37344849/

Acne is a chronic inflammatory skin disorder that profoundly impacts the quality of life of patients worldwide. While it is predominantly observed in adolescents, it can affect individuals across all age groups. Acne pathogenesis is believed to be a result of various endogenous and exogenous factors, but the precise mechanisms remain elusive. Recent studies suggest that dysbiosis of the skin microbiota significantly contributes to acne development. Specifically, Cutibacterium acnes, the dominant resident bacterial species implicated in acne, plays a critical role in disease progression. Various treatments, including topical benzoyl peroxide, systemic antibiotics, and photodynamic therapy, have demonstrated beneficial effects on the skin microbiota composition in acne patients. Of particular interest is the therapeutic potential of probiotics in acne, given its direct influence on the skin microbiota. This review summarizes the alterations in skin microbiota associated with acne, provides insight into its pathogenic role in acne, and emphasizes the potential of therapeutic interventions aimed at restoring microbial homeostasis for acne management.

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The role and benefits of dermocosmetics in acne management in Japan. Kurokawa I, Kobayashi M, Nomura Y, et al. Dermatol Ther (Heidelb). 2023 Jun 20. doi: 10.1007/s13555-023-00943-x. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/37338719/

In Japan, as in other countries around the world, acne vulgaris is a common disease and a frequent reason for patients to consult dermatologists. For optimal management of acne, it is important to understand how available products to support skin health can be used both with and without prescription products. Dermocosmetics can be defined as skincare agents with dermatologically active ingredients that directly support or care for the symptoms of various skin conditions (distinct from vehicle effects). There are products with active ingredients-including familiar ones such as niacinamide, retinol derivatives, and salicylic acid-that target important aspects of acne pathophysiology. Others, including ceramides, glyercin, thermal spring water, and panthenols, may have positive effects on skin barrier function that are useful in managing acne. This publication will discuss the roles of dermocosmetics in acne either as monotherapy to manage the milder forms of acne and help prevent relapses, or as adjuncts to prescription therapy to increase efficacy or adherence and assist in prevention of local adverse effects. Dermocosmetics may also have active ingredients that positively impact the skin microbiome.

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Metformin in hidradenitis suppurativa: Is it worth pursuing further? Tsentemeidou A, Vakirlis E, Papadimitriou I, et al. Skin Appendage Disord. 2023 Jun;9(3):187-190. doi: 10.1159/000529359. Epub 2023 Mar 29. https://pubmed.ncbi.nlm.nih.gov/37325287/

Hidradenitis suppurativa (HS) often coexists with obesity, metabolic syndrome, diabetes mellitus, or impaired glucose tolerance and insulin resistance and polycystic ovarian syndrome. Metformin is a medication used for the treatment of diabetes, acting in multiple ways. There is evidence that it decreases inflammatory cytokines, some of which are implicated in the pathogenesis of HS (TNF-α, IL-17). We performed a systematic review of data regarding the efficacy and safety of metformin for the treatment of HS. Four electronic databases (MEDLINE, ScienceDirect, Cochrane Library, and ClinicalTrials.gov), as well as the abstracts compendia of major dermatologic congresses, were searched. A total of 133 patients received metformin for HS across 6 studies, 117 of whom received it as monotherapy. The great majority of participants were female, in their thirties and overweight or obese, with one study including only children. The efficacy tools employed varied widely. Four studies (106 patients) documented improvement, 1 documented treatment failure, and 1 had mixed results. Only mild and transient side effects were noted. Metformin

has been tried in few HS patients with acceptable efficacy in a fair number of them. As it is generally well tolerated and reasonably priced, carefully designed clinical trials comparing it with placebo are worth performing.

The role of cosmetology in an effective treatment of rosacea: A narrative review. Sobkowska D, Szałapska A, Pawlaczyk M, et al. Clin Cosmet Investig Dermatol. 2023 Jun 5;16:1419-1430. doi: 10.2147/CCID.S412800. eCollection 2023. https://pubmed.ncbi.nlm.nih.gov/37303984/

Rosacea is a chronic inflammatory facial skin disease usually occurring in middle-aged patients. It manifests itself as an inflammatory condition with perivascular infiltrate, dilated blood vessels, lymphoedema, hyperplasia of sebaceous glands, and disorders of connective tissue structures brought on by fibrosis. Rosacea is characterized by multifactorial inflammatory mechanisms, and therefore it requires an interdisciplinary approach including adequate skin care, topical and/or systemic therapy, and physical modalities to successfully treat the various symptoms and disease subtypes. However, data regarding the possible role of cosmetologists in rosacea remains scanty and equivocal. The objectives of cosmetology therapy include restoration and regeneration, anti-inflammatory effects, the strengthening of blood vessels and regulation of their permeability, and the regulation of keratinization. Vascular abnormalities can be targeted with specific light and laser devices. Therefore, the present paper aims to review the latest advances and summarize different aspects concerning skin care in rosacea. Particular attention has been paid to the co-operation of cosmetologists with other specialists in order to bring about the interdisciplinary management of rosacea. It is also important to keep in mind that it is usually necessary to combine various methods of treatment, as this approach is more effective than monotherapy for attaining satisfactory cosmetic results in rosacea patients.

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Pyoderma gangrenosum following anti-TNF therapy in chronic recurrent multifocal osteomyelitis: drug reaction or cutaneous manifestation of the disease? A critical review on the topic with an emblematic case report. Romagnuolo M, Moltrasio C, Iannone C, et al. Front Med (Lausanne). 2023 May 31;10:1197273. doi: 10.3389/fmed.2023.1197273. eCollection 2023. https://pubmed.ncbi.nlm.nih.gov/37324147/

Chronic recurrent multifocal osteomyelitis (CRMO) is a rare autoinflammatory disease, clinically characterized by chronic and recurrent episodes of osteoarticular inflammation, that generally presents in children and adolescents. From a dermatological point-of-view, CMRO can be associated with skin rashes mainly including psoriasis, palmoplantar pustulosis and acne. Pyoderma gangrenosum (PG) is a rare immune-mediated inflammatory skin disease classified within the spectrum of neutrophilic dermatoses that, in some cases, has been reported as cutaneous manifestation in CMRO patients. This paper presents a 16-year female patient diagnosed with CMRO, who presented PG lesions located on the lower leg, that arose after the administration of the tumour necrosis factor (TNF)-α inhibitor adalimumab. Cases of PG have been reported in patients being treated with certain medications, including TNF-α antagonists, leading to classified them in a setting aptly termed "drug-induced PG." In this paper, we discuss the co-occurrence of PG and CRMO, in the light of recent evidence on the pathogenesis of both diseases and giving ample space to a literature review on drug induced PG. In our case, it is plausible that PG could be considered a cutaneous manifestation of CRMO, although the mechanisms underlying this intriguingly relationship remain to be fully unraveled.

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Impact of topical vehicles and cutaneous delivery technologies on patient adherence and treatment outcomes in acne and rosacea. Stein Gold L, Kwong P, Draelos Z, et al. J Clin Aesthet Dermatol. 2023 May;16(5):26-34. https://pubmed.ncbi.nlm.nih.gov/37288283/

Objective: Topical therapies remain the mainstay in treating patients with acne and rosacea. However, emerging real-world evidence demonstrates that desired treatment outcomes might not be achieved if patient satisfaction and adherence are low. Poor tolerability of active drug(s) and vehicle components and/or the drug delivery system could negatively influence adherence. Additionally, adherence might be lower with complex treatment regimens involving the application of multiple topical formulations. Optimizing vehicle tolerability and simplifying regimens that use fixed-dose combinations may improve treatment outcomes, better patient satisfaction, and reduce overall treatment costs. This qualitative review discusses several innovative drug delivery technologies and formulations aimed at improving patient satisfaction and adherence. Methods: The authors conducted a search of current and emerging topical drug delivery technologies used in clinical studies, reviewed primary literature on the chemical characteristics of topical dosage forms, and compared the impacts on treatment outcomes for acne and rosacea. Results: This article provides insight into innovative vehicles and drug delivery systems that have emerged allowing for fixed-dose combinations of incompatible active drugs and improving the tolerability of historically irritative active ingredients. Limitations: Further research is needed to fully highlight the impact of patient satisfaction and modern topical formulations on adherence and treatment outcomes. Conclusion: Drug microencapsulation is a delivery technology that has enabled development of a topical fixed-dose combination of benzoyl peroxide and tretinoin preventing the oxidation of tretinoin by benzoyl peroxide and improving the tolerability of the active ingredients.

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