



*Visit acneandrosacea.org
to Become an AARS
Member and
Donate Now on
acneandrosacea.org/donate*

Our Officers

J. Mark Jackson, MD
AARS President

Andrea Zaenglein, MD
AARS President-Elect

Joshua Zeichner, MD
AARS Treasurer

Bethanee Schlosser, MD
AARS Secretary

James Del Rosso, DO
Director

Emmy Graber, MD
Director

Jonathan Weiss, MD
Director

Stacey Moore
Executive Director
info@aarsmember.org

TABLE OF CONTENTS

AARS News

[We invite you to take a sneak peek at our exciting new educational series](#).....2

New Medical Research

[An evaluation of the efficacy of a single-session 577 nm pro-yellow laser](#).....3

[Impact of COVID-19 pandemic on the continuity of care for dermatologic patients](#)...3

[Evaluating the barriers to isotretinoin treatment for acne vulgaris](#).....4

[Acne and social media: A cross-sectional study of content quality](#)4

[Therapeutic drug monitoring in patients with suboptimal response to adalimumab](#)...5

[Dynamic leukocyte populations are associated with early- and late-stage lesions](#)5

[The comparative study of efficacy between 1064-nm long-pulsed Nd:YAG laser](#)6

[GPs' perspectives on acne management in primary care](#)6

[Topical 0.5% timolol maleate significantly enhances skin-barrier restoration](#)6

[Activation of Janus kinase signaling pathway in acne lesions](#).....7

[Relationship between acne and the use of cosmetics](#).....7

Clinical Reviews

[Vitamins A, B, C, and D: A short review for the dermatologist](#)8

[Spironolactone in the treatment of adolescent acne](#).....8

[Efficacy and safety of topical clascoterone cream for treatment of acne vulgaris](#).....9

[Inositols in PCOS](#).....10

[A molecular perspective on the potential benefits of metformin](#)10

[Bilateral phlyctenular keratoconjunctivitis in the context of hidradenitis suppurativa](#)10

[Foray into concepts of design and evaluation of microemulsions](#)11

[The challenge of nanovesicles for selective topical delivery for acne treatment](#).....11

[Surgical treatment of extensive perianal hidradenitis](#)11



AARS News

We invite you to take a sneak peek at our exciting new educational series 'Clearing It Up with the AARS' on the pages of our website and in our social channels. Please take a look at our first installment with AARS Past President and Board Member, Dr. James Del Rosso. Stay tuned for more information and ask us if you'd like to become a sponsor of upcoming content with us in the future! Click the image to watch the video.



Support the AARS through Amazon - Start with a Smile this Holiday Season!

You can support the AARS when you shop for holiday essentials, gifts, decorations and more through AmazonSmile. Buy your gifts through smile.amazon.com and Amazon will donate a percentage directly to the American Acne & Rosacea Society!



New Medical Research

An evaluation of the efficacy of a single-session 577 nm pro-yellow laser treatment in patients with post-acne erythema and scarring. Sarac G, Kapicioglu Y, Cenk H. *Dermatol Ther.* 2020 Dec 1;e14611. doi: 10.1111/dth.14611.

Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33258538/>

Purpose: Erythema and scarring are among the most common complications of severe inflammatory acne. In this study, we aimed to share our experience with pro-yellow laser and document the efficacy and safety of this treatment in post-acne erythema and scarring. **Methods:** The study included 40 patients, 24 (60%) females, and 16 (40%) males with a mean age of 29.5 ± 8.16 (min. 18 years, max. 57 years). The pro-yellow laser was applied to all patients as a single session with irradiation of 22 j / cm^2 . Improvement in post-acne erythema and scars were evaluated after the treatment. **Results:** The study included 40 patients, 24 patients (60%) were females and 16 patients (40%) were males with the mean age of 29.5 ± 8.16 (ranged between 18- 57 years old). A total of 21 patients (52.5%) had good improvement (51-75% regression), 10 patients (25%) had excellent improvement (76% -100% regression), and a moderate improvement (26% -50%) was detected in 9 patients (22.5%). Also, there were mild improvement (1% - 25%) in 20 patients (76.9%) and a moderate improvement (26% -50%) in 6 patients (23.1%). **Conclusion:** We found that pro-yellow laser is highly effective in the treatment of post-acne erythema, while its effectiveness was mild to moderate in atrophic acne scars. Also, It has been observed that the pro-yellow laser system can be used safely immediately after cessation of systemic isotretinoin treatment.

[Download Reference Document](#)

Impact of COVID-19 pandemic on the continuity of care for dermatologic patients on systemic therapy during the period of strict lockdown. Alshiyab DM, Al-Qarqaz FA, Muhaidat JM. *Ann Med Surg (Lond).* 2020 Dec;60:571-574. doi: 10.1016/j.amsu.2020.11.056. <https://pubmed.ncbi.nlm.nih.gov/33251007/>

<https://pubmed.ncbi.nlm.nih.gov/33251007/>

Background: The world has changed dramatically since the COVID-19 pandemic began. Jordan was among countries which enforced early lock-down for most non-vital services. Health care was mainly directed to cope with COVID-19 cases. The pandemic posed challenges for all patients, including dermatology patients especially those on systemic treatments. This resulted in interruption of medical care and exacerbation of pre-existing skin diseases for many patients. **Material and methods:** A cross-sectional, questionnaire-based study of dermatology patients on systemic treatment prior to corona pandemic. After lockdown was lifted, patients taking systemic treatments were evaluated for continuity of care during lockdown period and how that affected their skin condition. Demographic data, details of skin condition, continuity of care and impact on skin condition data were collected and analyzed. **Results:** 154 patients (120 males, 34 females) were included. The majority (around 80%) of patients were unable to attend to dermatology clinics or do the needed lab monitoring. Around one fifth of patients had drug interruption mostly due to no access to hospital pharmacy. Most patients were using oral isotretinoin for acne, others include methotrexate and other immune suppressive agents. Patients with acne and oral isotretinoin treatment were more likely to continue their treatment during lockdown period. Amongst those who stopped treatment, around 42% had flare up of their disease. **Conclusion:** COVID-19 pandemic had an important impact on various aspects of care for dermatology patients especially those on systemic therapy. This study demonstrated limited access to specialist care, inability to do lab tests and discontinuation of treatment during lockdown. Some patients (42%) had flare up of their skin condition as a result.

[Download Reference Document](#)

Evaluating the barriers to isotretinoin treatment for acne vulgaris in pediatric patients. Shah N, Smith E, Kirkorian AY. *J Am Acad Dermatol.* 2020 Nov 28;S0190-9622(20)33104-2. doi: 10.1016/j.jaad.2020.11.055. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33259877/>

Early and effective treatment for acne is crucial to prevent long-term dermatologic and psychosocial consequences. Under the iPLEDGE program, successful isotretinoin prescription is challenging and requires meticulous coordination between patients, physicians, insurances, and pharmacies. Studies find gender and racial differences in isotretinoin prescription; however, little is known about the barriers contributing to the differences. This study expands on the barriers pediatric patients face to isotretinoin treatment and evaluates for sociodemographic differences. Chart review was conducted for all patients under 21 years receiving isotretinoin for acne from 2010-2020 at Children's National Hospital. Missed prescription windows only applied for females and is defined as inability to retrieve isotretinoin within 7-days from the pregnancy test. Early termination was considered for any patient with a cumulative dose <120 mg/kg. The study included 200 patients, 40% females. 52.5% of females missed at least one prescription window and 49% of all patients terminated treatment early. The most common reasons for missed windows included delays with insurance and pharmacy processing and patient issues with iPLEDGE (Table 1). The most common reason for early termination was failure to follow-up. The odds of missing a window was nine times higher in black patients than white patients (Table 2). Females who missed windows resided in communities with a higher distress level (DCI=34.95±12.49) than females who did not miss windows (DCI=25.05±17.15). The odds of early termination were almost two times higher in females than males and three times higher in black patients than white patients. The majority of patients encountered at least one barrier, highlighting the complexity of isotretinoin treatment. On average, prior authorizations required more than 48 hours to be approved by insurances, a significant amount of time within the 7-day window. As majority of prior authorizations are approved, their utility should be evaluated because they delay treatment. Some insurances require 30-days between prescription refills, and misalignment between the 7-day iPLEDGE and 30-day insurance timeline can prevent medication retrieval and delay treatment. Patient issues with iPLEDGE included limited understanding of iPLEDGE, limited access to computers or internet, inability to navigate the website, language barriers, and technical errors. Utilization of educational videos instead of brochures may improve patient understanding of iPLEDGE. Physicians may provide computers for patients to complete iPLEDGE requirements. Difficulty accessing an iPLEDGE participating pharmacy can be explained by the limited number of iPLEDGE pharmacies available in low income communities. Errors in the pharmacy's iPLEDGE portal, such as inaccurately marking prescriptions as dispensed, also prevents timely retrieval of medication by the patient. Early termination may be secondary to patient discouragement from monthly iPLEDGE requirements and the financial burden of treatment. The burden of monthly visits can be overcome by alternatives such as e-visits. As a single-site study, the barriers may be specific to the patient demographic, location, and resources available, and may not be generalizable to the entire nation. A small sample size and no control group also limit this study. Isotretinoin treatment is burdensome and barriers to treatment must be addressed to minimize gender and racial differences.

[Download Reference Document](#)

Acne and social media: A cross-sectional study of content quality on TikTok. Zheng DX, Ning AY, Levoska MA, et al. *Pediatr Dermatol.* 2020 Nov 28. doi: 10.1111/pde.14471. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33247602/>

Our objective was to assess the quality of acne-related medical information present on TikTok, the world's fastest growing social media platform. We queried the TikTok mobile application for videos tagged with "#acne" on May 1, 2020 and assessed the top 100 videos meeting inclusion criteria for content quality using DISCERN, a validated and reliable instrument for evaluating consumer health information. The mean content quality rating of videos was 2.03 (SD 0.47) which, according to the DISCERN instrument, indicates information with serious to potentially important

shortcomings. Dermatologists should be aware that adolescents are using TikTok to gather acne-related information and should prioritize acne education in this patient demographic due to the generally low content quality of such information.

Therapeutic drug monitoring in patients with suboptimal response to adalimumab for hidradenitis suppurativa: A retrospective case series. Abdalla T, Mansour M, Bouazzi D, et al. *Am J Clin Dermatol.* 2020 Nov 26. doi: 10.1007/s40257-020-00575-3. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33242185/>

Background: Adalimumab, a tumor necrosis factor- α inhibitor, is a biologic used for the treatment of moderate-to-severe hidradenitis suppurativa (HS). It is well known that patients may experience loss of efficacy from its use in other conditions, and it is suggested that developing a strategy for therapeutic drug monitoring (TDM) may help secure optimal clinical outcomes. Objectives: We sought to determine serum adalimumab concentrations and anti-adalimumab antibody (AAA) status in patients with moderate-to-severe HS. Methods: A retrospective case series of 38 patients with suboptimal response to adalimumab 40 mg weekly was conducted at a community dermatology clinic. Adalimumab serum trough levels, AAA status, and inflammatory biomarkers were collected. Blood was drawn on identification of suboptimal response (after a minimum of 12 weeks) and was collected once prior to receiving the next scheduled dose. Kruskal-Wallis and Chi-squared tests were used for data analysis. Results: A total of 38 patients had a median adalimumab trough concentration of 8.76 (interquartile range [IQR] 1.3-12.5) $\mu\text{g/mL}$. The median duration of adalimumab therapy of all patients was 21 (IQR 12-24) months. AAAs were detected in nine patients (24%), and all had subtherapeutic serum concentrations ($< 6 \mu\text{g/mL}$). Patients who were AAA+ had a significantly lower median adalimumab concentration than those who were AAA- (0.02 $\mu\text{g/mL}$ [range 0.02-0.81] vs. 10.14 [range 0.76-48.00]; $p = 0.0006$). Conclusion: Patients with AAAs had significantly lower serum adalimumab levels. The current study suggests that TDM may identify underlying reasons for suboptimal response and detect patients who may benefit from dose optimization strategies.

[Download Reference Document](#)

Dynamic leukocyte populations are associated with early- and late-stage lesions in hidradenitis suppurativa.

Altman SR, Criswell SL. *J Histochem Cytochem.* 2020 Nov 26;22155420978535. doi: 10.1369/0022155420978535. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33238789/>

Hidradenitis suppurativa (HS) is a chronic inflammatory skin condition typically targeting the axillary and anogenital regions of the body. The massive inflammatory cell infiltrate produced in this cryptogenic condition has led investigators in the attempt to link particular inflammatory cell fractions and cytokines to disease development, and ultimately to disease treatment. This study qualitatively and quantitatively analyzes the white blood cell fractions of macrophages, B-lymphocytes, T-lymphocytes, plasma cells, and granulocytes in 104 HS lesions on formalin-fixed paraffin-embedded tissues using immunohistochemistry (IHC). Four dermis-associated epithelial categories were investigated from persons with HS: 15 unaffected HS skin (US), 19 distended but unruptured follicle epithelium (UF), 62 migrating stratified squamous epithelium (MSSE) from ruptured follicles, and 35 degraded migrating epithelial sheets (DMES). In addition, 27 control skin (CS) from persons without HS were evaluated. Analysis of cell counts indicated that non-migratory dermal epithelium (CS, US, and UF) stimulated very little inflammatory response. However, contrary to previous studies which indicated macrophages to be the chief inflammatory cell in HS, this study showed that plasma cells were the primary cell type present in early-stage HS lesions (MSSE), whereas granulocytes were the major cell population seen in late-stage HS lesions (DMES).

The comparative study of efficacy between 1064-nm long-pulsed Nd:YAG laser and 595-nm pulsed dye laser for the treatment of acne vulgaris. Chalermuwattanan N, Rojhirunsakool S, Kamanamool N, et al. *J Cosmet Dermatol.* 2020 Nov 23. doi: 10.1111/jocd.13832. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33226176/>
 Background: The popularity of laser therapy in acne treatment has been increasing recently due to its safety, effectiveness, and convenience. Both 595-nm pulsed dye laser (PDL) and 1064-nm long-pulsed neodymium:yttrium-aluminum-garnet laser (Nd:YAG) have been successful in treating inflammatory acne lesions. However, clinical data from controlled comparative studies are still lacking. Aims: To compare the clinical efficacy of 1064-nm Nd:YAG with 595-nm PDL for the treatment of acne vulgaris. Methods: Thirty-four participants with mild to moderate facial acne were enrolled and then randomized to receive three, 2-week interval treatments with 1064-nm Nd:YAG on one side of the face and 595-nm PDL on the other side. Clinical assessments including acne lesion counts, acne erythema grading, and erythema index were performed at baseline, 2nd, 4th, and 8th week. Participants' satisfaction, preference, and adverse effects were recorded. Results: As compared with baseline, the significant reduction of mean inflammatory acne lesion counts, acne erythema grading, and erythema index was demonstrated on 595-nm PDL-treated sides and 1064-nm Nd:YAG-treated sides. However, there were no significant differences between both sides. The participants were satisfied with both laser treatments, but the participants preferred 1064-nm Nd:YAG over 595-nm PDL treatment. The adverse effects were less on 1064 nm Nd: YAG-treated sides. Conclusions: 1064-nm Nd:YAG and 595-nm PDL treatments are equally effective in reducing inflammatory acne lesions and acne erythema in mild to moderate facial acne vulgaris.

GPs' perspectives on acne management in primary care: A qualitative interview study. Platt D, Muller I, Sufray A, et al. *Br J Gen Pract.* 2020 Nov 23;bjgp20X713873. doi: 10.3399/bjgp20X713873. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33257464/>

Background: Acne is a common skin condition, affecting most adolescents at some point. While guidelines recommend topical treatments first-line, long courses of oral antibiotics are commonly prescribed. Aim: To explore GPs' perspectives on managing acne. Design and setting: Qualitative interview study with GPs in South West England. Method: GPs were invited to participate via existing email lists used by GP educators to disseminate information. Purposive sampling was used to recruit a range of participants by sex, number of years in practice, and whether their practice was rural or urban. Semi-structured telephone interviews followed an interview guide and were audio recorded and transcribed. Data were explored using inductive thematic analysis facilitated by NVivo software (version 11). Results: A total of 102 GPs were invited, of whom 20 participated. Analysis revealed uncertainties regarding topical treatments, particularly around available products, challenges regarding side effects, and acceptability of topical treatments. GPs generally either perceived topical treatments to be less effective than oral antibiotics or perceived pressure from patients to prescribe oral antibiotics due to patients' views of topical treatments being ineffective. GPs described a familiarity with prescribing oral antibiotics and expressed little concern about antimicrobial stewardship in the context of acne. Some seemed unaware of guidance suggesting that antibiotic use in acne should not exceed 3 months, while others spoke about avoiding difficult conversations with patients regarding discontinuation of antibiotics. Conclusion: GPs expressed uncertainty about the use of topical treatments for acne and either felt that treatments were of low effectiveness or perceived pressure from patients to prescribe oral antibiotics.

Topical 0.5% timolol maleate significantly enhances skin-barrier restoration after fractional carbon dioxide laser treatment for acne scars. Kimwattananukul K, Noppakun N, Asawanonda P, Kumtornrut C. *Lasers Surg Med.* 2020 Nov 19. doi: 10.1002/lsm.23354. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33211352/>
 Background and objectives: Skin barrier is often compromised following ablative fractional carbon dioxide laser

(AFCO2) therapy for acne scarring. The resultant downtime, even of a few days' duration, can be of significant concern to patients. We evaluated the efficacy and safety of topical 0.5% timolol maleate (TM) for its role in short-term restoration of the skin's biophysical properties after laser treatments. Study design/materials and methods: This double-blind, placebo-controlled trial included participants aged 18-50 years with atrophic acne scars for at least 3 months. After undergoing laser therapy, they applied 0.5% TM to one cheek and normal saline to the contralateral cheek (control) for 7 days. Corneometry, transepidermal water loss (TEWL) measurement, colorimetry, and clinical outcome parameters (erythema, edema, crusting, pruritus, and tightness scores) were evaluated at baseline and 48, 96, and 168 hours after AFCO2 treatment. Results: Twenty-five healthy participants completed the study. Most participants had Fitzpatrick skin phototype IV. The TM-treated side showed statistically higher corneometry values and lower TEWL than the control side at every follow-up visit ($P < 0.001$). The crusting score at 96 hours post-AFCO2 treatment was also significantly better on the TM side. No adverse events occurred during the follow-up period. Conclusions: Application of topical 0.5% TM twice daily improves the skin-barrier function and might promote re-epithelialization after laser procedures.

Activation of Janus kinase signaling pathway in acne lesions. Awad SM, Tawfik YM, El-Mokhtar MA, et al. *Dermatol Ther.* 2020 Nov 19;e14563. doi: 10.1111/dth.14563. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33210790/>

The Janus kinase/signal transducer and activator of transcription (JAK/STAT) signaling pathway has been linked to the pathogenesis of many inflammatory skin diseases; however, the role of JAKs in the pathogenesis of acne vulgaris has not been previously elucidated. We aimed to analyze the cutaneous expression of JAK1/2/3 proteins in acne vulgaris and investigate the possible role of JAK signaling in acne pathogenesis. This case-control study was carried out on 28 patients with inflammatory acne vulgaris vs 20 age- and sex-matched healthy volunteers. Acne severity was assessed using Global acne severity grading system (GAGS). Skin biopsies were collected from lesional and non-lesional skin of patients and from control group. The expression of JAK1/2/3 proteins was examined by real-time quantitative polymerase chain reaction. JAK1 and JAK3 were overexpressed in acne lesions, compared to non-lesional skin and the control group. No significant difference was found in JAK2 expression between patients and controls. JAK1 and JAK3 showed no significant relation with the patients' age, sex, family history, duration of acne, or GAGS score. Our results suggest the activation of JAK pathway in acne lesions, indicating that it may play a pivotal role in the inflammatory disease process. JAK1 and JAK3 may be possible new targets for acne therapy.

[Download Reference Document](#)

Relationship between acne and the use of cosmetics: Results of a questionnaire study in 539 Korean individuals. Suh DH, Oh H, Lee SJ, et al. *J Cosmet Dermatol.* 2020 Nov 18. doi: 10.1111/jocd.13853. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33206430/>

Background: Acne vulgaris is one of the most common dermatological diseases, and it is known that various factors are related to triggering this condition in a patient. In particular, although the use of cosmetics is thought to be associated with the onset of a patient developing acne, there are few studies that have been conducted to date on this disease and its related factors. Methods: To begin with, a total of 539 patients with acne vulgaris, who visited three dermatologic clinics in Korea, were asked to complete a questionnaire regarding their condition in relation to clinical features and exacerbating factors, including the use of cosmetics. The patients all provided an accurate acne treatment history as well. Results: Among the respondents, 38.1% of patients who failed treatment answered that the condition of their acne was worsened by the continued use of cosmetics, which was significantly higher than 26.3% of the surveyed treatment-naive patients ($P < .05$). In this relation, double cleansing (cleansing twice using oil and water-based cleanser) and the number of cosmetics in use were also noted in higher numbers than in the treatment-

failure patients. As noted, the liquid-type foundation and concealer were frequently used in this group. Conclusions: This study showed the influence of cosmetics, especially in acne patients with a history of treatment failures. These results also show differences according to specific cosmetic types and formulations. Therefore, overall dermatologists should consider advising about cosmetic use to acne patients along with medical treatment options for the patients with acne.

Clinical Reviews

Vitamins A, B, C, and D: A short review for the dermatologist. Coerdts KM, Goggins CA, Khachemoune A. *Altern Ther Health Med.* 2020 Nov 27;AT6264. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33245705/>

Background: Vitamins and their derivatives are used extensively in the field of dermatology to treat a range of conditions, both benign and malignant. Additionally, over the past decade, vitamin supplements have been heavily advertised for improving overall health. Due to the widespread use of vitamins and their derivatives for dermatologic conditions, a comprehensive review of the evidence is needed. Objective: Here we review several of the well-established uses of vitamins A, B, C, and D in the management of dermatologic conditions ranging from acne vulgaris to malignant melanoma. Additionally, we examine the dermatologic consequences of both deficiency and excess of vitamins A, B, C, and D. Finally, we delve into newer applications for these vitamins and evaluate the evidence behind them. Conclusion: Vitamins, in both topical and oral forms, play a key role in treating many dermatologic conditions. Some of the newer applications of vitamins, such as the use of vitamin B3 for non-melanoma skin cancer prevention, vitamin B6 for prevention of chemotherapy-induced alopecia, and vitamin C as an adjuvant treatment for malignant melanoma, appear promising. Further data is needed to validate these findings. Additionally, many people use vitamin B7 for hair, skin, and nail health. There is evidence that supports vitamin B7 supplementation in patients with uncombable hair syndrome, brittle nail syndrome, and seborrheic dermatitis. Some studies have also demonstrated a benefit in healthy individuals, although other studies have shown a neutral effect. Further randomized controlled trials are needed. Likewise, the use of vitamin D for the treatment of atopic dermatitis has conflicting results and requires further investigation. New research continues to emerge regarding vitamin supplementation, and it is an important topic for dermatologists.

Spirolactone in the treatment of adolescent acne: A retrospective review. Berman HS, Cheng CE, Hogeling M. *J Am Acad Dermatol.* 2020 Nov 27;S0190-9622(20)33090-5. doi: 10.1016/j.jaad.2020.11.044. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33253846/>

Spirolactone is used to treat hormonal acne via anti-androgen properties and by reducing sebum production. Its use is on the rise for acne in female adolescents, however most studies on spiro lactone efficacy focus on adults. The purpose of this study is to fill this knowledge gap by evaluating spiro lactone in adolescent acne treatment. We performed a retrospective chart review at the University of California, Los Angeles between January 2013 and April 2020, evaluating patients with a diagnosis of acne vulgaris via ICD-9 or 10 code, who were prescribed spiro lactone by a dermatologist at age 19-years or younger. Patient characteristics and treatment outcomes are shown in Tables 1 and 2 respectively. Two-thirds (68%) of patients demonstrated either resolution or improvement in their acne following spiro lactone treatment. Consistent with findings in adults, adolescent patients whose acne resolved or improved had a longer average treatment duration than those whose acne remained unchanged (349.6 vs. 169.2 days, $p = 0.0052$). Patients treated with spiro lactone and an oral contraceptive pill (OCP), a combination known as hormonal antiandrogen acne treatment (HAAT), showed more acne resolution or improvement compared to those treated with spiro lactone alone (83% vs 46% $p = 0.010$). Of those treated with HAAT, 18% had acne resolution and 65% improved, while no patients on spiro lactone alone had acne resolution and only 46% improved. Some adult

studies consider spironolactone a “solo agent” if started after at least 6 months of OCP treatment, as presumably the OCP has reached its maximum acne modulating effect after this time. While we did not use this classification, notably 58% of patients in the HAAT group started OCPs over 6 months prior to spironolactone, and 67% of these patients showed improvement or resolution after adding spironolactone. These findings highlight the benefit of a multimodal treatment approach to hormonal acne. Spironolactone provides an additional therapeutic option when other agents are inappropriate or ineffective. Some studies challenge the efficacy of oral isotretinoin for hormonal acne, and Tugrul-Ayanoglu et al. found that 13.3% of participants declined oral isotretinoin treatment after discussing the medication with a dermatologist. In our study, nine patients previously tried isotretinoin and had acne relapse after treatment or did not tolerate it, and one patient had isotretinoin contraindications. Spironolactone must be considered with its own restrictions as some patients experience medication side effects. Four patients in our study discontinued spironolactone due to side effects, including menstrual irregularities, breast tenderness, and syncope. Limitations include small sample size and single institution study. Results are dependent on physician documentation, and do not reflect the degree of acne improvement nor differences in improvement between body regions. Additionally, most patients in our study had acne distributed on the chin and jawline and other features consistent with hormonal acne (Table 1), making it difficult to evaluate spironolactone in non-hormonal acne. More research is warranted to compare spironolactone against other oral acne medications in adolescent patients. Despite these limitations, our results should empower dermatologists to prescribe spironolactone to their adolescent acne patients.

[Download Reference Document](#)

Efficacy and safety of topical clascoterone cream for treatment of acne vulgaris: A systematic review and meta-analysis of randomized placebo-controlled trials. Alkhodaidi ST, Al Hawsawi KA, Alkhodaidi IT, et al.

Dermatol Ther. 2020 Dec 1;e14609. doi: 10.1111/dth.14609. Online ahead of print.

<https://pubmed.ncbi.nlm.nih.gov/33258536/>

Objective: To systematically and meta-analytically pool evidence from randomized placebo-controlled trials that examined the efficacy and safety of topical clascoterone cream in patients with acne vulgaris. Methods: Four databases were screened from inception to 10-October-2020. Included studies were assessed for risk of bias. Efficacy outcomes included investigator's global assessment (IGA) treatment success and absolute change in inflammatory lesion counts (ILCs) and non-inflammatory lesion counts (NILCs). Safety outcomes included the proportion of patients with any treatment-emergent adverse event (TEAE) as well as incidence of any TEAE, serious adverse events (AEs), AEs related to study drug, AEs leading to study drug discontinuation, nasopharyngitis, headache, oropharyngeal pain, and vomiting. Dichotomous data were analyzed using the risk ratio (RR) and 95% confidence interval (95% CI) whereas continuous data were analyzed using the mean difference (MD) and 95% CI. Review Manager Software version 5.4.1 was used for statistical analysis. Results: Five clinical trials, comprising 2457 patients (1357 and 1100 patients received clascoterone and placebo, respectively) were included. Studies revealed an overall low risk of bias. Clascoterone significantly increased IGA success rates (RR=2.87, 95% CI [2.11, 3.89], p<0.001) and decreased NILCs (MD=-5.64, 95% CI [-8.41, -2.87], p<0.01) without substantially impacting the ILCs (MD=-3.40, 95% CI [-5.74, -1.06], p=0.004). No significant differences were noted between both groups for all safety outcomes, except for nasopharyngitis which was significantly lower in the clascoterone group (RR=0.47, 95% CI [0.27, 0.83], p=0.01). Conclusion: Topical clascoterone cream is safe and effective in the treatment of acne vulgaris.

[Download Reference Document](#)

Inositols in PCOS. Kamenov Z, Gateva A. *Molecules*. 2020 Nov 27;25(23):E5566. doi: 10.3390/molecules25235566. <https://pubmed.ncbi.nlm.nih.gov/33260918/>

Background: Myoinositol (MI) and D-chiro-inositol (DCI) are involved in a number of biochemical pathways within oocytes having a role in oocyte maturation, fertilization, implantation, and post-implantation development. Both inositols have a role in insulin signaling and hormonal synthesis in the ovaries. Methods: Literature search (with key words: inositols, myo-inositol, d-chiro-inositol, PCOS) was done in PubMed until Sept. 2020 and 197 articles were identified, of which 47 were of clinical trials (35 randomized controlled trials). Results: Many studies have demonstrated that in patients with polycystic ovarian syndrome (PCOS) MI treatment improved ovarian function and fertility, decreased the severity of hyperandrogenism including acne and hirsutism, positively affected metabolic aspects, and modulated various hormonal parameters deeply involved in the reproductive axis function and ovulation. Thus, treating with MI has become a novel method to ameliorate PCOS symptoms, improve spontaneous ovulation, or induce ovulation. The current review is focused on the effects of MI and DCI alone or in combination with other agents on the pathological features of PCOS with focus on insulin resistance and adverse metabolic outcomes. Conclusions: The available clinical data suggest that MI, DCI, and their combination in physiological ratio 40:1 with or without other compound could be beneficial for improving metabolic, hormonal, and reproductive aspects of PCOS.

A molecular perspective on the potential benefits of metformin for the treatment of inflammatory skin disorders. Chang JE, Choi MS. *Int J Mol Sci*. 2020 Nov 25;21(23):E8960. doi: 10.3390/ijms21238960. <https://pubmed.ncbi.nlm.nih.gov/33255783/>

Due to its anti-hyperglycemic effect, metformin is the first-line medication for the treatment of type 2 diabetes, particularly in people who are obese. However, metformin is a drug with a very wide range of pharmacological properties and reports of its therapeutic effect on diseases including inflammation and cancer are increasing. Numerous research groups have reported that metformin has beneficial effects on a variety of inflammatory skin disorders including psoriasis, acanthosis nigricans, acne, hidradenitis suppurativa, and allergic contact dermatitis. According to these reports, in addition to the well-known action of metformin, that is, its anti-hyperglycemic effect, NF- κ B inhibition and the resulting alteration to the cytokine network may be the potential targets of metformin. Its anti-hyperandrogenism effect has also been confirmed as the major action of metformin in some inflammatory skin diseases. Moreover, novel regulatory mechanisms, including autophagy and antioxidant processes, have been suggested as promising mechanisms of action for metformin in inflammatory skin disorders.

Bilateral phlyctenular keratoconjunctivitis in the context of hidradenitis suppurativa: A case report and literature review. Gargallo-Benedicto A, Clemente-Tomás R, Pastor-Espuig M, et al. *Ocul Immunol Inflamm*. 2020 Nov 23;1-3. doi: 10.1080/09273948.2020.1833223. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33226311/>

Purpose: To report a case of severe bilateral phlyctenular keratoconjunctivitis (PKC) associated to hidradenitis suppurativa (HS). Case report: A 26-year-old male with reactivation of HS in the last few months presented with concurrent pain and vision loss secondary to bilateral PKC resistant to topical treatment. There were no other infectious or autoimmune disorders. Systemic immunosuppression was needed, with simultaneous improvement of the ophthalmological and dermatological findings. Conclusions: Different inflammatory eye diseases have been reported in the context of HS. Acute inflammation in HS reactivation would trigger an autoimmune response, acting as a common causal mechanism in this association. We have reported a new case of inflammatory eye disease - HS in the form of PKC, not previously described in the literature, and consistent with immune dysregulation where the systemic *Staphylococcus aureus* burden due to HS may act as an additional causal factor.

Foray into concepts of design and evaluation of microemulsions as a modern approach for topical applications in acne pathology. Talianu MT, Dinu-Pîrvu CE, Ghica MV, et al. *Nanomaterials* (Basel). 2020 Nov 19;10(11):2292. doi: 10.3390/nano10112292. <https://pubmed.ncbi.nlm.nih.gov/33228156/>

With a fascinating complexity, governed by multiple physiological processes, the skin is considered a mantle with protective functions which during lifetime are frequently impaired, triggering dermatologic disorders. As one of the most prevalent dermatologic conditions worldwide, characterized by a complex pathogenesis and a high recurrence, acne can affect the patient's quality of life. Smart topical vehicles represent a good option in the treatment of a versatile skin condition. By surpassing the stratum corneum known for diffusional resistance, a superior topical bioavailability can be obtained at the affected place. In this direction, the literature study presents microemulsions as a part of a condensed group of modern formulations. Microemulsions are appreciated for their superior profile in matters of drug delivery, especially for challenging substances with hydrophilic or lipophilic structures. Formulated as transparent and thermodynamically stable systems, using simplified methods of preparation, microemulsions have a simple and clear appearance. Their unique structures can be explained as a function of the formulation parameters which were found to be the mainstay of a targeted therapy.

[Download Reference Document](#)

The challenge of nanovesicles for selective topical delivery for acne treatment: Enhancing absorption whilst avoiding toxicity. Mancuso A, Cristiano MC, Fresta M, Paolino D. *Int J Nanomedicine*. 2020 Nov 19;15:9197-9210. doi: 10.2147/IJN.S237508. eCollection 2020. <https://pubmed.ncbi.nlm.nih.gov/33239876/>

Acne is a common skin disease that affect over 80% of adolescents. It is characterized by inflammation of the hair bulb and the attached sebaceous gland. To date, many strategies have been used to treat acne as a function of the disease severity. However, common treatments for acne seem to show several side effects, from local irritation to more serious collateral effects. The use of topical vesicular carriers able to deliver active compounds is currently considered as an excellent approach in the treatment of different skin diseases. Many results in the literature have proven that drug delivery systems are useful in overcoming the toxicity induced by common drug therapies, while maintaining their therapeutic efficacy. Starting from these assumptions, the authors reviewed drug delivery systems already realized for the topical treatment of acne, with a focus on their limitations and advantages over conventional treatment strategies. Although their exact mechanism of permeation is not often completely clear, deformable vesicles seem to be the best solution for obtaining a specific delivery of drugs into the deeper skin layers, with consequent increased local action and minimized collateral effects.

[Download Reference Document](#)

Surgical treatment of extensive perianal hidradenitis. Kocinec V, Bártlová A, Salavec M, et al. *Rozhl Chir*. Fall 2020;99(9):408-412. doi: 10.33699/PIS.2020.99.9.409-413. <https://pubmed.ncbi.nlm.nih.gov/33242970/>

Introduction: Perianal hidradenitis suppurativa is a chronic recurrent inflammatory, suppurative, and fistulising disease of apocrine glands, adjacent anal canal and soft tissues. Perianal area is the second most common affected area after axilla. There are three grades of the disease. Hidradenitis suppurativa represents a chronic, recurrent, deep-seated folliculitis resulting in abscesses, followed by the formation of sinus tracts and subsequent scarring. Perianal hidradenitis suppurativa is the last and the most serious grade of the disease and a specific access is needed for patient preparation and surgical treatment alone. The currently preferred method of treatment for patients with extensive perianal hidradenitis is excision and closure with combination of skin flaps, primary suture and skin graft in one or two stages. Case reports: There are three case reports of perianal hidradenitis suppurativa in this article. The local and overall initial treatment of patients followed by a radical excision and closure with a rotation skin flaps and skin grafts is described. The final results were satisfactory, with no recurrence or serious complication.