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Notable Upcoming Events

Discounted Tuition Offer for AARS Members to Acne CME Virtual Event, Acne: A Dialogue with the Experts, led by Emmy Graber, MD, MBA, AARS Board Member. This will be held on Wednesday, October 28, 2020 5:00 PM – 9:15 PM EDT.

- *Debunking Isotretinoin Myths: What's the Evidence?*, Hilary Baldwin, MD
- *Antibiotics: How to Choose an Oral Antibiotics*, Diane S. Berson, MD
- *Hormonal Acne: Patient Selection and Management Pearls*, John Barbieri, MD
- *What's New in Acne*, Emmy Graber, MD, MBA
- *Missteps in Acne Management: Where the Experts Went Wrong*, Panel discussion with Q&A
- *Ask Us Anything (About Acne!)*, Panel discussion with Q&A

Registration fee is \$150, but existing AARS members receive a 50% discount by entering code: AARS on the payment page of the online registration form. For further details and to register online and view more information, proceed to this website today: <https://www.mdmeetingdesigns.com/AcneMeeting>.

If you need to check your AARS membership status or apply for annual membership, please visit our member page on our website at <https://acneandrosacea.org/membership>.

This activity is jointly provided by Medical Education Resources and Meeting Designs.

Physician Credit

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Medical Education Resources (MER) and Meeting Designs. MER is accredited by the ACCME to provide continuing medical education for physicians.

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Medical Education Resources is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. This CE activity provides 4 contact hours of nursing education.

New Medical Research

Efficacy and safety of systemic isotretinoin treatment for moderate to severe acne (insights from the real-life clinical setting). Tolino E, Skroza N, Proietti I, et al. *Dermatol Ther.* 2020 Oct 9;e14392. doi: 10.1111/dth.14392. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33037685/>

Acne is a chronic inflammatory relapsing disease that affect predominantly adolescents, with scarring as a frequent sequela. Early and appropriate therapy allows better management of the disease, longer remission, scars risk reduction and improvement of quality of life. According to therapeutic algorithm, systemic isotretinoin can be used in severe acne and also in moderate forms resistant to other systemic treatments. The aims of this real-life observational study were to determine and compare the effectiveness of isotretinoin evaluated by Global Acne Grading System (GAGs) and Acne Quality of Life (AQoL) in moderate and in severe acne, correlation between efficacy and cumulative dose of isotretinoin, tolerability and recurrence rate. Moreover, the differences in efficacy and tolerability between male and female patients were compared. The treatment with systemic isotretinoin led to an improvement in acne severity and quality of life in all observed subjects.

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Clinical experience with adalimumab biosimilar Imraldi® in hidradenitis suppurativa. Ricceri F, Rosi E, Cesare AD, et al. *Dermatol Ther.* 2020 Oct 8;e14387. doi: 10.1111/dth.14387. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33030281/>

Adalimumab is the only biologic therapy approved for the treatment of patients with hidradenitis suppurativa, a chronic and disabling skin condition. To date, there are no studies in the literature about the effectiveness of adalimumab biosimilar SB5 in hidradenitis suppurativa. The aim of this study was to evaluate its efficacy and safety. A retrospective observational study was performed in hidradenitis suppurativa adalimumab naive patients and in patients who were switched from the adalimumab originator. 11 patients were included in the study. Our results support adalimumab SB5 as an effective and well tolerated drug, with a good interchangeability with its originator also for the treatment of hidradenitis suppurativa.

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Clinical and demographic features of hidradenitis suppurativa: A multicenter study of 1221 patients with an analysis of risk factors associated with disease severity. Özkur E, Karadağ AS, Üstüner P, et al. *Clin Exp Dermatol.* 2020 Oct 8. doi: 10.1111/ced.14478. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33030217/>

Background: Hidradenitis suppurativa (HS) is a chronic, relapsing, and debilitating inflammatory disease associated with profound morbidity. Objective: In this multicenter study, we investigated the demographic and clinical features of HS and determined risk factors of disease severity. Methods: A total of 1221 patients diagnosed with HS from 29 centers were enrolled, and the medical records of each patient were reviewed. Results: The mean age of disease onset was 26.2 ± 10.4 years and almost 70% ($n = 849$) of patients were current or former smokers. Mean disease duration was 8.9 ± 8.4 years with a diagnosis delay of 5.8 ± 3.91 years. Twenty-one percent ($n = 256$) of patients had a family history of HS. The axillary, genital, and neck regions in males and the inframammary region in females were more frequently affected ($p < 0.05$ for all). Acne (40.8%), pilonidal sinus (23.6%), and diabetes mellitus (12.6%) were the most prevalent associated diseases. Among systemic therapies, antibiotics (76.4%) were most common followed by retinoids (41.7%), surgical interventions (32.0%), and biologic agents (15.4%). Logistic regression analysis revealed the most important determinants of disease severity were male sex (odds ratio [OR] 2.211), and involvement of the genitals (OR 3.387) and inguinal region (OR 2.253). Patients with a comorbidity, longer disease duration, longer diagnosis delay, and a higher number of smoking pack-years had more severe disease. Conclusions: Our nationwide cohort study found HS shows demographic and clinical variation, and it may help broaden the understanding of HS and factors associated with disease severity.

Long-term analysis of adalimumab in Japanese patients with moderate to severe hidradenitis suppurativa: Open-label phase 3 results. Morita A, Takahashi H, Ozawa K, et al. *J Dermatol.* 2020 Oct 7. doi: 10.1111/1346-8138.15605. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33029861/>

This phase 3, multicenter, open-label single-arm study evaluated adalimumab (ADA) in Japanese patients with moderate to severe hidradenitis suppurativa (HS). Fifteen patients received ADA 160 mg s.c. at week 0, 80 mg at week 2 and 40 mg at week 4 and every week thereafter. At any time after week 52, patients were given the option to receive 80 mg ADA every other week or remain on 40 mg every week. The primary end-point (achievement of HS Clinical Response [HiSCR] at week 24) and results up to week 24 were published previously. Secondary end-points included total abscess and inflammatory nodule (AN) count, 30% or more and 1 unit or more reduction in Patient's Global Assessment of Skin Pain Numeric Rating Scale (NRS30), modified Sartorius score and quality of life (QoL). After 12 weeks of ADA treatment, the achievement rate in HiSCR was 86.7%; HiSCR achievement rate was sustained through week 52 at 66.7%. Improvements at week 12 were also seen in the proportion of patients achieving an AN count of 0-2; NRS30 response rate among the nine patients with a baseline NRS of 3 or more; mean decrease in

modified Sartorius score (61.4); and QoL as assessed by Dermatology Life Quality Index and Treatment Satisfaction Questionnaire; these improvements were maintained through 52 weeks. Similar efficacy was observed when patients switched dosing from ADA 40 mg every week to ADA 80 mg every other week. There were no new safety findings with ADA 40 mg weekly dosing during the study, and no differences in safety were found between patients who switched to 80 mg ADA every other week and patients who remained on 40 mg every week. The results of this study indicate that long-term ADA treatment is effective and well tolerated in Japanese patients with moderate to severe HS.

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Rosacea in acne vulgaris patients: Subtype distribution and triggers assessment--a cross-sectional study.

Chen H, Lai W, Zheng Y. *J Cosmet Dermatol*. 2020 Oct 6. doi: 10.1111/jocd.13762. Online ahead of print.

<https://pubmed.ncbi.nlm.nih.gov/33025720/>

Background: Recent studies have reported that the incidence of acne combined with rosacea is increasing. However, the clinical feature and inducing factor of this two diseases co-occurrence is remain unclear. This study aims to investigate the classification and severity of female patients combining with acne and rosacea. Methods: Female Patients with facial acne combined with rosacea, 15-50 years old, were included from dermatology out-patient department from January 2019 to December 2019. The severity of acne was classified according to the Pillsbury grading system. Rosacea was diagnosed and classified according to the Standard issued by National Rosacea Society Expert Committee. Questionnaire was designed to collect the information of rosacea triggers from each patient. Results: 563 vulgaris acne combined with rosacea patients (mean age 23.2±43), included 70.33% severe acne (n=396), 15.81% moderate acne(n=89) and 13.85% mild acne(n=78), had finished the study. In severe acne group 72.47% combine with erythematotelangiectatic rosacea (ETR), 22.47% combined with papulopustular rosacea (PPR) and 5.05% combine with phymatous rosacea (PHR). In moderate acne group, 53.93% combine with ETR, 43.82% combined with papulopustular rosacea (PPR) and 2.24%combine with PHR. All patients in moderate acne subject group was combined with ETR (100%). Patients that did not use skin care produces presented 12.79 times higher rate to combine with ETR than that frequently using skin care products (P = 0.014). Discussion/conclusions: Erythema telangiectasia rosacea is the most common rosacea type in female acne patients. There is a need to be vigilant about the combination of sever /moderate acne and papulopustular rosacea. Rational daily use of skin care products can reduce the incidence of rosacea in acne patients. For acne patients without family history of rosacea, dermatologists should also not ignore the healthy education to avoid potential triggers of rosacea.

Antibiotic susceptibility of cutibacterium acnes strains isolated from israeli acne patients. Sheffer-Levi S,

Rimon A, Lerer V, et al. *Acta Derm Venereol*. 2020 Oct 6. doi: 10.2340/00015555-3654. Online ahead of print.

<https://pubmed.ncbi.nlm.nih.gov/33021324/>

Antibiotic-resistant Cutibacterium acnes has been reported worldwide, but data from Israeli patients with acne is currently lacking. This study evaluated the antibiotic susceptibility of C. acnes, isolated from 50 Israeli patients with acne to commonly prescribed antibiotics, using the Epsilometer test (E-test). Matrix-assisted laser desorption ionization-time of flight (MALDI-TOF) analysis, 16S rRNA sequencing and single locus sequence typing (SLST) molecular typing were used to identify and characterize Cutibacterium acnes. Among 36 strains isolated, phylotype IA1 was most common. Resistance to at least one antibiotic was found in 30.6% of tested strains. Resistance rates were highest for erythromycin (25.0%), followed by doxycycline (19.4%), clindamycin (16.7%), minocycline (11.1%) and tetracycline (8.3%). Significant correlation was found between resistance to multiple antibiotics, with 5.6% of isolates resistant to all antibiotics tested. When reviewing resistances rates worldwide antibiotic resistance was found to be prevalent in Israel. Measures to limit the emergence of antibiotic-resistant strains of Cutibacterium acnes should

be taken and alternative treatments should be sought.

Brazilian Society of Dermatology consensus on the use of oral isotretinoin in dermatology. Bagatin E, Costa CS, Rocha MADD, et al. *An Bras Dermatol.* 2020 Oct 3;S0365-0596(20)30233-6. doi: 10.1016/j.abd.2020.09.001. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33036809/>

Background: Isotretinoin is a synthetic retinoid, derived from vitamin A, with multiple mechanisms of action and highly effective in the treatment of acne, despite common adverse events, manageable and dose-dependent. Dose-independent teratogenicity is the most serious. Therefore, off-label prescriptions require strict criteria. Objective: To communicate the experience and recommendation of Brazilian dermatologists on oral use of the drug in dermatology. Methods: Eight experts from five universities were appointed by the Brazilian Society of Dermatology to develop a consensus on indications for this drug. Through the adapted DELPHI methodology, relevant elements were listed and an extensive analysis of the literature was carried out. The consensus was defined with the approval of at least 70% of the experts. Results: With 100% approval from the authors, there was no doubt about the efficacy of oral isotretinoin in the treatment of acne, including as an adjunct in the correction of scars. Common and manageable common adverse events are mucocutaneous in nature. Others, such as growth retardation, abnormal healing, depression, and inflammatory bowel disease have been thoroughly investigated, and there is no evidence of a causal association; they are rare, individual, and should not contraindicate the use of the drug. Regarding unapproved indications, it may represent an option in cases of refractory rosacea, severe seborrheic dermatitis, stabilization of field cancerization with advanced photoaging and, although incipient, frontal fibrosing alopecia. For keratinization disorders, acitretin performs better. In the opinion of the authors, indications for purely esthetic purposes or oil control are not recommended, particularly for women of childbearing age. Conclusions: Approved and non-approved indications, efficacy and adverse effects of oral isotretinoin in dermatology were presented and critically evaluated.

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Rationale for use of combination therapy in rosacea. Stein Gold L, Baldwin H, Harper JC. *J Drugs Dermatol.* 2020 Oct 1;19(10):929-934. doi: 10.36849/JDD.2020.10.36849/JDD.2020.5367.

<https://pubmed.ncbi.nlm.nih.gov/33026776/>

Background: Rosacea is a chronic skin condition characterized by primary and secondary manifestations affecting the centropacial skin. The primary diagnostic phenotypes for rosacea are fixed centropacial erythema with periodic intensification, and phymatous changes. Major phenotypes, including papules and pustules, flushing, telangiectasia, and ocular manifestations, may occur concomitantly or independently with the diagnostic features. The phenotypes of rosacea patients may evolve between subtypes and may require multiple treatments concurrently to be effectively managed. We report the proceedings of a roundtable discussion among 3 dermatologists experienced in the treatment of rosacea and present examples of rosacea treatment strategies that target multiple rosacea symptoms presenting in individual patients. Methods: Three hypothetical cases describing patients representative of those commonly seen by practicing dermatologists were developed. A roundtable discussion was held to discuss overall and specific strategies for treating rosacea based on the cases. Results/discussion: With few exceptions, the dermatologists recommended combination therapy targeting each manifestation of rosacea for each case. These recommendations are in agreement with the current American Acne and Rosacea Society treatment guidelines for rosacea and are supported by several studies demonstrating beneficial results from combining rosacea treatments. Conclusions: Rosacea is an evolving condition; care should take into account all clinical signs and symptoms of rosacea that are present in an individual patient, understanding that symptoms may change over time, and utilize combination therapy when applicable to target all rosacea symptoms.

Evaluation of skin problems and dermatology life quality index in health care workers who use personal protection measures during COVID-19 pandemic. Daye M, Cihan FG, Durduran Y. *Dermatol Ther.* 2020 Sep 28;e14346. doi: 10.1111/dth.14346. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32985745/>

The aim of this study was to evaluate the skin problems and dermatological life quality of the health care workers (HCWs) due to personal protection equipment (PPE) use, who are at high risk for COVID-19 infection. A questionnaire about HCWs' PPE use, their skin symptoms, and prevention, management methods and Dermatology Life Quality Index (DLQI) was fulfilled. The median age of 440 participants was 33.5 (21.0-65.0) years old. Skin problems were found to be 90.2%, the most common were dryness, itching, cracking, burning, flaking, peeling and lichenification. The presence of skin problems ($P < .001$) was higher in those who did not use moisturizers. Of all, 22.3% ($n = 98$) stated that the use of PPE increased the severity of their previously diagnosed skin diseases and allergies ($P < .01$). Only 28.0% ($n = 123$) stated that they know the skin symptoms that may develop by using PPE. The proper hand washing rate was higher as education level increased ($P < .001$). Skin problems were higher in those using mask with metal nose bridge ($P: .02$ and $P: .003$, respectively). As the mask using period prolonged, acne was more common ($P: .02$). DLQI was significantly affected in women ($P = .003$), and with increased skin problems related to PPE ($P < .001$). It is important to organize trainings on prevention and management of possible skin symptoms due to PPE use according to guidelines.

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Correlation between depression, quality of life and clinical severity in patients with hidradenitis suppurativa.

Sampogna F, Fania L, Mastroeni S, et al. *Acta Derm Venereol.* 2020 Sep 28. doi: 10.2340/00015555-3647. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32985674/>

Depression is frequent in patients with hidradenitis suppurativa. However, its relationship with quality of life and clinical severity needs further investigation. In this cross-sectional study, 341 adult, consecutive patients with hidradenitis suppurativa completed the 12-item General Health Questionnaire (GHQ-12), which has been shown to be able to identify cases of major depressive disorder in dermatological patients. The frequency depression in hidradenitis suppurativa patients was 29.0%. In patients with depression, severity (International hidradenitis suppurativa Severity Score System (IHS4)), quality of life (Skindex-17; Dermatology Life Quality Index (DLQI)), and health status (36-item Short Form Health Survey (SF-36)) were significantly worse compared with patients with no depression. The highest linear correlation was observed between GHQ-12 and the psychosocial scale of the Skindex-17 and the SF-36 mental scale. In contrast, correlation between GHQ-12 and clinical severity was poor. Depression is an important comorbidity in hidradenitis suppurativa, which is strongly associated with impairment in quality of life, but not linearly correlated with clinical severity.

Clinical Reviews

Evidence-based topical treatments (azelaic acid, salicylic acid, nicotinamide, sulfur, zinc, and fruit acid) for acne: An abridged version of a Cochrane systematic review. Liu H, Yu H, Xia J, et al. *J Evid Based Med.* 2020 Oct 9. doi: 10.1111/jebm.12411. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33034949/>

Objective: The effects of topical azelaic acid, salicylic acid, nicotinamide, sulfur, zinc, and fruit acid (alpha-hydroxy acid) for acne are unclear. We aimed to assess the effects of these topical treatments by collecting randomized controlled trials. Methods: We searched The Cochrane Skin Group Specialised Register, CENTRAL, MEDLINE, Embase, and LILACS up to May 2019. We also searched five trials registers. Two review authors independently extracted data and assessed risk of bias. Meta analyses were performed by using Review Manager 5 software. Results: We included a total of 49 trials involving 3880 participants. In terms of treatment response (measured using

participants' global self-assessment of acne improvement, PGA), azelaic acid was probably less effective than benzoyl peroxide (RR = 0.82, 95% CI 0.72-0.95). However, there was probably little or no difference in PGA when comparing azelaic acid to tretinoin (RR = 0.94, 95% CI 0.78-1.14). There may be little or no difference when comparing salicylic acid to tretinoin (RR = 1.00, 95% CI 0.92-1.09). There were no studies measured PGA when evaluating nicotinamide. With respect to alpha-hydroxy acid, there may be no difference in PGA when comparing glycolic acid to salicylic-mandelic acid (RR = 1.06, 95% CI 0.88-1.26). We were uncertain about the effects of sulfur and zinc. Adverse events associated with these topical treatments were always mild and transient. Conclusions: Moderate-quality evidence was available for azelaic acid and low- to very-low-quality evidence for other topical treatments. Risk of bias and imprecision limit our confidence in the evidence.

Metformin therapy for acne in patients with polycystic ovary syndrome: A systematic review and meta-analysis. Yen H, Chang YT, Yee FJ, Huang YC. *Am J Clin Dermatol.* 2020 Oct 13. doi: 10.1007/s40257-020-00565-5. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33048332/>

Background: Acne is one of the cutaneous manifestations of polycystic ovary syndrome (PCOS). There is limited evidence on metformin use for treatment of acne in PCOS patients. Objective: Our aim was to conduct a systematic review and meta-analysis to evaluate the efficacy of metformin for treatment of PCOS-related acne. Methods: On November 23, 2019, we searched PubMed, the Cochrane Library, and Embase databases for human clinical studies in any language. The keywords included 'acne' and 'polycystic ovary syndrome' combined with 'metformin,' 'biguanide,' or 'glucophage.' We included randomized controlled trials (RCTs), non-randomized controlled trials (NRCTs), and open-label studies on patients with PCOS treated with metformin. We calculated standardized mean differences (SMDs) for acne scores and odds ratios (ORs) for presence of acne, with 95% confidence intervals (CIs). Quality assessment was performed using the Cochrane Collaboration risk of bias instrument for RCTs. NRCTs and open-label studies were assessed using the adapted methodological index for nonrandomized studies (MINORS). Results: We included 51 studies on 2405 PCOS patients. Metformin as adjuvant therapy led to greater improvement of acne scores than the same therapy without metformin (SMD - 0.256; 95% CI - 0.439 to - 0.074). Pooling pre- and post-metformin therapy data showed significant decrease of acne scores after metformin use (SMD - 0.712; 95% CI - 0.949 to - 0.476). Presence of acne decreased significantly after metformin treatment (OR 0.362; 95% CI 0.271 to 0.485). Limitations: There was heterogeneity across some studies due to different acne assessment scales, metformin dosages, and treatment durations. Conclusions: For PCOS patients, metformin as stand-alone or adjuvant therapy was associated with improvement of acne. More randomized controlled trials are needed to validate these results.

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Aetiology and pathogenesis of hidradenitis suppurativa. Wolk K, Join-Lambert O, Sabat R. *Br J Dermatol.* 2020 Oct 13. doi: 10.1111/bjd.19556. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33048349/>

Hidradenitis suppurativa (HS) is a chronic inflammatory disorder. Patients develop inflamed nodules and abscesses and, at later stages of disease, epithelialized tunnels and scars in skinfolds of axillary, inguinal, gluteal and perianal areas. Quality of life is affected due to severe pain, purulent secretion, restricted mobility and systemic involvement. Genetics and lifestyle factors including smoking and obesity contribute to the development of HS. These factors lead to microbiome alteration, subclinical inflammation around the terminal hair follicles, and infundibular hyperkeratosis, resulting in plugging and rupture of the follicles. Cell-damage-associated molecules and propagating bacteria trigger inflammation and lead to massive immune cell infiltration that clinically manifests as inflamed nodules and abscesses. The immune system plays a key role also in the progression and chronification of skin alterations. Innate proinflammatory cytokines (e.g. interleukin-1 β and tumour necrosis factor- α), mediators of activated T helper (Th)1 and Th17 cells (e.g. interleukin-17 and interferon- γ), and effector mechanisms of neutrophilic granulocytes,

macrophages and plasma cells are involved. Simultaneously, skin lesions contain anti-inflammatory mediators (e.g. interleukin-10) and show limited activity of Th22 and regulatory T cells. The inflammatory vicious circle finally results in pain, purulence, tissue destruction and scarring. Chronic inflammation in patients with HS is also frequently detected in organs other than the skin, as indicated by their comorbidities. All these aspects represent a challenge for the development of therapeutic approaches, which are urgently needed for this debilitating disease. This scholarly review focuses on the causes and pathogenetic mechanisms of HS and the potential therapeutic value of this knowledge.

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Clascoterone: First approval. Dhillon S. *Drugs*. 2020 Oct 8. doi: 10.1007/s40265-020-01417-6. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33030710/>

Clascoterone (Winlevi®) is an androgen receptor inhibitor being developed as a topical cream and solution by Cassiopea (a spin-out company of Cosmo Pharmaceuticals) for the treatment of androgen-dependent skin disorders, including androgenetic alopecia and acne vulgaris. Although the exact mechanism of action of clascoterone for the topical treatment of acne vulgaris is unknown, the drug is believed to compete with the androgen dihydrotestosterone for binding to androgen receptors in the sebaceous gland and hair follicles to attenuate signalling necessary for acne pathogenesis. In August 2020, clascoterone cream 1% received its first approval in the USA for the topical treatment of acne vulgaris in patients 12 years of age or older. Clinical studies of a different formulation of clascoterone (a solution containing a higher concentration of the drug) for the treatment of androgenetic alopecia are underway in Germany and the USA. This article summarizes the milestones in the development of clascoterone leading to this first approval for the topical treatment of acne vulgaris.

Psychodermatology of acne: Psychological aspects and effects of acne vulgaris. Stamu-O'Brien C, Jafferany M, Carniciu S, Abdelmaksoud A. *J Cosmet Dermatol*. 2020 Oct 8. doi: 10.1111/jocd.13765. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33031607/>

Acne is an inflammatory skin condition seen commonly in adolescence and young adulthood. Acne has significant psychological comorbidity. Acne lesions have been seen to be exacerbated by stress. Anxiety, depression, somatization and in rare cases psychosis have been reported in patients with acne. Acne excoriee is the severe presentation of acne where patients pick their acne and produce raw areas and disfigurement on their face, upper chest and back. This review will describe prevalence, common clinical features, different clinical presentations, differential diagnoses, and treatment recommendation. Special focus has been put on psychological aspects.

Acne in the first three decades of life: An update of a disorder with profound implications for all decades of life. Greydanus DE, Azmeh R, Cabral MD, et al. *Dis Mon*. 2020 Oct 8;101103. doi: 10.1016/j.disamonth.2020.101103. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33041056/>

Acne vulgaris is a chronic, inflammatory, skin condition that involves the pilosebaceous follicles and is influenced by a variety of factors including genetics, androgen-stimulation of sebaceous glands with abnormal keratinization, colonization with *Cutibacterium acnes* (previously called *Propionibacterium acnes*), and pathological immune response to inflammation. Acne can occur at all ages and this discussion focuses on the first three decades of life. Conditions that are part of the differential diagnosis and/or are co-morbid with acne vulgaris are also considered. Acne in the first year of life includes neonatal acne (acne neonatorum) that presents in the first four weeks of life and infantile acne that usually presents between 3 and 6 months of the first year of life with a range of 3 to 16 months after birth. Acne rosacea is a chronic, inflammatory, skin condition that is distinct from acne vulgaris, typically presents in adults, and has four main types: erythemato-telangiectatic, papulopustular, phymatous and ocular. Treatment options for acne vulgaris include topical retinoids, topical benzoyl peroxide, antibiotics (topical, oral), oral contraceptive pills,

isotretinoin, and others. Management must consider the increasing impact of antibiotic resistance in the 21st century. Psychological impact of acne can be quite severe and treatment of acne includes awareness of the potential emotional toll this disease may bring to the person with acne as well as assiduous attention to known side effects of various anti-acne medications (topical and systemic). Efforts should be directed at preventing acne-caused scars and depigmentation on the skin as well as emotional scars within the person suffering from acne.

Depression, psychiatric comorbidities and psychosocial implications associated with acne vulgaris. Sood S, Jafferany M, Sushruth V. *J Cosmet Dermatol.* 2020 Oct 2. doi: 10.1111/jocd.13753. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33006820/>

Acne vulgaris is a highly prevalent skin condition associated with considerable psychological burden. Acne and its sequelae can affect many domains of life leading to social problems as well as psychiatric issues. Social dysfunction and educational shortcomings are known to be associated with acne. Psychiatric conditions like depression is found to be two to three times more prevalent in acne patients as compared to general population. It is cardinal to pay special attention to the mental health of acne patients. Screening tools in outpatient departments can help dermatologists assess the psychological state of the patient. This article studies the impact of acne across the various aspects of life and highlights the importance of a timely diagnosis and referral. This can be helpful in preventing the long-term consequences of acne in terms of physical as well as psychological health.

A review of advancement on influencing factors of acne: An emphasis on environment characteristics. Yang J, Yang H, Xu A, He L. *Front Public Health.* 2020 Sep 17;8:450. doi: 10.3389/fpubh.2020.00450. eCollection 2020. <https://pubmed.ncbi.nlm.nih.gov/33042936/>

Background: Acne vulgaris is known as a commonly-seen skin disease with a considerable impact on the quality of life. At present, there have been a growing number of epidemiological, medical, demographic and sociological researches focusing on various influencing factors in the occurrence of acne. Nevertheless, the correlation between environmental factors and acne has yet to be fully investigated. Objective: To assess the impacts of individual, natural and social environmental factors on acne and to construct a framework for the potential impact of built environment on acne. Methods: A thorough review was conducted into the published social demographical, epidemiological, and environmental studies on acne through PubMed, Google Scholar and Web of Science, with reference made to the relevant literature. Results: The influencing factors in acne are classed into four major categories. The first one includes individual socio-economic and biological factors, for example, gender, age, economic level, heredity, obesity, skin type, menstrual cycle (for females), diet, smoking, cosmetics products, electronic products, sleep quality and psychological factors. The second one includes such natural environmental factors as temperature, humidity, sun exposure, air pollution and chloracne. The third one relates to social environment, including social network and social media. The last one includes built environmental factors, for example, population density, food stores, green spaces, as well as other built environment characteristics for transport. Acne can be affected negatively by family history, overweight, obesity, oily or mixed skin, irregular menstrual cycles, sugary food, greasy food, dairy products, smoking, the improper use of cosmetics, the long-term use of electronics, the poor quality of sleep, stress, high temperature, sun exposure, air pollution, mineral oils and halogenated hydrocarbons. Apart from that, there are also potential links between built environment and acne. Conclusions: It is necessary to determine the correlation between the built environment and acne based on the understanding of the impact of traditional factors (sociology of population and environment) on acne gained by multidisciplinary research teams. Moreover, more empirical studies are required to reveal the specific relationship between built environment and acne.

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