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Notable Upcoming Events

The AARS will be exhibiting and highlighting our annual Corporate Benefactors at ASDS and SDPA. Visit the American Acne & Rosacea Society booth in the Virtual Exhibit Hall 1 Engagement Lounge at the [ASDS 2020 Virtual Annual Meeting](#) October 9 – 11, 2020, and at [SDPA Digital 2020](#) October 29 – November 1, 2020 during Networking Breaks.

JDD presents a New Free CME Live Webinar: Recognizing the Role of the Sebaceous Gland in Acne – the Role of Androgen Receptors in the Development and Management of Acne Vulgaris, Faculty - James Q. Del Rosso, DO, FAOCD, FAAD, Moderator - Leon H. Kircik, MD. This will be held on Tuesday, October 13, 2020 7:00 PM – 8:00 PM EST.

Androgen and androgen receptor (AR) may play important roles in several skin related diseases including androgenetic alopecia and acne vulgaris and recent studies suggest AR and androgens play distinct roles in the skin pathogenesis, and AR seems to be a better target than androgens for the treatment of these skin diseases. Tune in as Leon H. Kircik, MD and James Q. Del Rosso, DO, FAOCD, FAAD discuss the mechanisms by which androgen/AR regulate sebocyte activity in acne vulgaris, and how suppressing AR function by treating with antiandrogens alone, or in combination with antibiotics (i.e., to reduce bacterial infection) might be a potential therapeutic approach to treat acne more effectively.

For further details and to register online and view more information, proceed to this website today: <https://event.on24.com/eventRegistration/EventLobbyServlet?target=reg20.jsp&referrer=https://jddonline.com/acne-webinar-series&eventid=2669032&sessionid=1&key=EE96BF55DC57E26E81318D1030114EB6®Tag=&sourcepage=register>

Hosted By: The Journal of Drugs in Dermatology. This continuing education activity is supported by an independent medical education grant provided by Cassiopea, Inc.

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.

Credit Designation

Medical Education Resources designates this virtual live activity for a maximum of 4 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nursing Credit

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.

Industry News

Zilxi from Vyne Therapeutics now available. October 2, 2020. DermWire, Practical Dermatology.

<https://practicaldermatology.com/news/zilxi-from-vyne-therapeutics-now-available?c4src=news-landing:feed>

Zilxi™ (minocycline) topical foam, 1.5% is now available by prescription for the treatment of inflammatory lesions of rosacea in adults. Zilxi, from Vyne Therapeutics, Inc. is the first minocycline product of any form to be approved by the FDA for use in rosacea, a diverse skin condition that most commonly presents with symptoms such as deep facial redness, spider veins (telangiectasia) and acne-like inflammatory lesions (papules and pustules). This new once-daily therapy will be available in retail, community and specialty pharmacies nationwide. "Patients and physicians have been seeking new treatment options for rosacea, a condition that can be difficult to treat, leaving many patients dissatisfied and, in some cases, switching treatments multiple times or discontinuing altogether," says David Domzalski, Chief Executive Officer of Vyne. "By combining a unique topical delivery system for minocycline with strong efficacy and tolerability, ZILXI is positioned to address a very challenging skin condition in a way that could change treatment considerations for rosacea." The Company also announced that the annual list price of Zilxi will be \$485 per 30-gram canister, in parity with the wholesale price of Amzeeq® (minocycline) topical foam, 4%, the Company's topical minocycline indicated for the treatment of inflammatory lesions of non-nodular moderate to severe acne vulgaris in adults and pediatric patients 9 years of age and older. The Company is working to align contracts with commercial insurers, expanding efforts previously undertaken for Amzeeq, to offer the broadest possible access to ZILXI for patients and healthcare professionals. Vyne has also developed a multi-channel tactical marketing plan to reach customers, including deployment of the existing sales force to targeted rosacea-treating providers.

Hoth Therapeutics' HT-003 inhibits acne gene TLR2. September 24, 2020. DermWire, Practical Dermatology.

<https://practicaldermatology.com/news/hoth-therapeutics-ht-003-inhibits-acne-gene-trl2?c4src=news-landing:feed>

Initial data from the first phase of the research reports that toll-like receptor 2 (TLR2) is significantly inhibited by HT-003. Hoth Therapeutics, Inc. completed testing on the ability of HT-003 to block acne pathogenic gene expression in human keratinocytes. Initial data from the first phase of the research reports that toll-like receptor 2 (TLR2) is significantly inhibited by HT-003. In addition, HT-003 at doses as high as 50 µM led to no observable toxicity. Dr. Jonathan Zippin, MD, PhD, Associate Professor of Dermatology at Weill Cornell Medicine and Hoth Senior Scientific Advisor, led the first phase of the study. "Thanks to Dr. Zippin and his team, we have gained insight and gathered significant data with regards to the significance of HT-003 in blocking acne pathogenic gene expression," says Robb Knie, CEO of Hoth Therapeutics, in a news release. "We will continue to monitor the data at lower doses and move onto the testing of rodent skin and carcinogenesis." During the next phase of the research, Dr. Zippin will identify the minimal effective dose required to block TLR2 signaling in response to a broad range of bacteria derived agonists to further elucidate the pathway. "The ability of HT-003 to potentially inhibit TLR2 expression suggests that this drug will not only be effective for acne but may also help a broad range of patients suffering from disease driven by over active

inflammatory responses to bacteria," says Dr. Zippin. Once HT-003 biomarkers have been identified using the in vitro human keratinocytes models, testing will move onto into live rodents.

New Medical Research

Association between demodex folliculorum and metabolic syndrome. Toka Özer T, Akyürek Ö, Durmaz S. J Cosmet Dermatol. 2020 Oct 5. doi: 10.1111/jocd.13721. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33017081/>

Background: Demodex folliculorum mite infestation is associated with many diseases such as rosacea, pityriasis found with acne vulgaris, and blepharitis. Aim: In this research, the aim of this study was to investigate an association between patients who have metabolic syndrome and presence of Demodex folliculorum. Patients/methods: This research was planned prospectively as a case-control study. Fifty cases who have metabolic syndrome and 50 control subjects in good health were included. Metabolic syndrome was diagnosed according to the NCEP Adult Treatment Panel III criteria. Standard superficial skin biopsy was performed for the presence of Demodex folliculorum mite infestation. Results: It was detected that number of Demodex affected from the glucose level and each increase in glucose level cause an increase on Demodex as 0.190 ($P = .00$, $t = 4.746$, $B = 0.190$, $r = 0.57$, Durbin-Watson = 1.801, confidence interval = 0.110 to 0.271 (for glucose)). Conclusion: In this study, the presence of Demodex folliculorum was found to be higher in the cases who have metabolic syndrome compared to the healthy group. These results show that in cases with metabolic syndrome, high blood sugar levels make them more susceptible to infestation of Demodex folliculorum.

Evaluation of treatment of acne scars with 25% trichloroacetic acid chemical peel followed by manual dermasanding. Al-Hamamy HR, Al-Dhalimi MA, Abtan AF. J Cosmet Dermatol. 2020 Sep 30. doi: 10.1111/jocd.13754. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32998175/>

Background: Acne scars are common problems encountered in daily dermatologic practice. Objective: To evaluate the effectiveness and safety of 25% trichloroacetic acid (TCA) alone or followed by manual dermasanding in repeated sessions for the treatment of mild and moderate acne scars. Methods: Thirteen patients (9 females and 4 males) were enrolled. Twenty-five percent TCA superficial peel was performed in all patients, followed in 11 of them by manual dermasanding. Thirteen sessions of TCA peeling, one session for each patient, were done, and twenty-four sessions of dermasanding with different numbers for each patient. Acne scars were graded into a score ranging from 0-20, the score was recorded at each visit, and the results were compared. Results: The score of scarring acne decreased after TCA peeling and each dermasanding session. The improvement was statistically significant. The improvement continued after the last dermasanding session. After both procedures, no significant complications were recorded except persistent erythema and post-inflammatory hyperpigmentation, which disappeared in all patients at three months follow up visit. Conclusion: TCA superficial peel followed by manual dermasanding in separate sessions was effective and the improvement became more significant after repeated dermasanding sessions for the treatment of mild and moderate acne scars.

Effectiveness of clindamycin and rifampicin combination-therapy in hidradenitis suppurativa: A six-months prospective study. Yao Y, Jørgensen AR, Ring HC, Thomsen SF. Br J Dermatol. 2020 Sep 30. doi: 10.1111/bjd.19578. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33000461/>

Treatment of Hidradenitis Suppurativa (HS) with systemic antibiotics are first line therapy according to European S1 guidelines. Yet, despite being the most investigated antibiotic regimen in HS, the evidence-based literature on clindamycin and rifampicin in HS is limited and primarily based on retrospective studies. Additionally, despite the lack

of evidence on the long-term risks, the suggested treatment duration is 10 weeks due to the risk of side effects and concerns regarding antibiotic resistance.

[Download Reference Document](#)

Changes in dermatological complaints among healthcare professionals during the COVID-19 outbreak in Turkey. Metin N, Turan Ç, Utlu Z. *Acta Dermatovenerol Alp Pannonica Adriat.* 2020 Sep;29(3):115-122.

<https://pubmed.ncbi.nlm.nih.gov/32975297/>

Introduction: This questionnaire study evaluates dermatological complaints that may arise due to hygiene measures and anxiety among healthcare professionals (HCPs) during the COVID-19 outbreak. Methods: A total of 526 volunteers, consisting of doctors and nurses, participated. Demographic features, personal hygiene behavior, personal protective equipment (PPE) use, Hospital Anxiety and Depression Scale-Anxiety (HADS-A) parameters, and symptoms of various dermatological diseases (xerosis, eczema, acne, hair loss, palmar hyperhidrosis, xeromycteria, urticaria, aphthous stomatitis, and seborrheic dermatitis) were investigated. Results: Although the frequency and severity of many dermatological complaints increased during the pandemic period, the most frequent increase was observed in the frequency of complaints suggesting xerosis and eczema. We found that complaints suggesting xerosis and eczema were seen on the hands 2.44 and 3.57 times, respectively, as a result of washing hands 10 times/day, and that handwashing times of 10 seconds or more significantly increased the risk of eczema (5.44 times). Another remarkable result was a fivefold increase in acne complaints among those using any mask. The severity of all complaints except hair loss and seborrheic dermatitis correlated significantly with HADS-A. Conclusions: Our study showed that the frequency and severity of some dermatological complaints increased in HCPs.

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Analysis of musculoskeletal side effects of oral Isotretinoin treatment: A cross-sectional study.

Karaosmanoğlu N, Mülkoğlu C. *BMC Musculoskelet Disord.* 2020 Sep 25;21(1):631. doi: 10.1186/s12891-020-03656-w. <https://pubmed.ncbi.nlm.nih.gov/32977793/>

Background/ objectives: Acne vulgaris is a chronic inflammatory disease affecting the pilosebaceous unit. Isotretinoin is an effective treatment option for severe acne. The aim of this study was to evaluate musculoskeletal side effects of systemic isotretinoin treatment. Methods: Ninety-four patients with acne vulgaris and 100 sex- and age-matched controls were enrolled in this study. Only the patients who had musculoskeletal symptoms were evaluated in this study. All participants were firstly assessed by a dermatologist. The patients were asked whether they had any musculoskeletal symptoms after isotretinoin treatment, if so, the feature and duration of the symptoms were recorded. The dosage of the drug, treatment duration, incidence of arthralgia, myalgia, low back pain, sacroiliitis and tendinopathy and laboratory test results were noted. The severity of pain was assessed by visual analog scale (VAS). The severity of acne vulgaris was evaluated by Global Acne Grading Scale (GAGS). Sacroiliac radiography, magnetic resonance imaging (MRI) and rheumatologic blood tests were requested from the patients meeting Assessment of Spondyloarthritis International Society (ASAS) criteria. Results: Of the 94 patients, 71 were female and 23 were male. 47.9% of the patients had arthralgia, 53.2% had myalgia, 70.2% (66) had low back pain, 11.7% had sacroiliitis and 4.3% had tendinopathy. 37.8% of 66 patients with low back pain had inflammatory pain and 62.2% had mechanical pain. Bone marrow edema consistent with sacroiliitis was detected by sacroiliac MRI in 11 patients with inflammatory back pain. The median total cumulative dose of isotretinoin was significantly higher in patients with low back pain than in patients without low back pain ($p = 0.014$). There was no significant correlation between cumulative dose of drug, treatment duration and VAS with ESR and CRP ($p > 0.05$). Also no correlation was found between GAGS scores and musculoskeletal symptoms ($p > 0.05$). Conclusion: Low back pain is one of the very common complications of isotretinoin. It can be mostly mechanical or inflammatory. Isotretinoin-induced low back pain is dose-related, and

inflammatory back pain without sacroiliitis is also frequent. The clinicians should be aware of the back pain may be a reflective of sacroiliitis during isotretinoin usage.

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Anti-acne effects of cembrene diterpenoids from the cultured soft coral *sinularia flexibilis*. Chen LW, Chung HL, Wang CC, et al. Mar Drugs. 2020 Sep 25;18(10):E487. doi: 10.3390/md18100487. <https://pubmed.ncbi.nlm.nih.gov/32992719/>

Acne is a skin disease common in adolescents and increasingly common in the adult population. The major pathologic events of acne vulgaris include increased sebum production, retention hyperkeratosis, carrying commensal skin microbiota, and inflammation. In recent years, more than 10,000 compounds have been isolated and identified from marine organisms. The aim of this study was to discover the potential anti-acne activity of fraction 9 + 10 (SF-E) of *Sinularia flexibilis* extract and six cembrene diterpenoids. We found that the SF-E significantly reduced *Cutibacterium acnes*-induced edema in Wistar rat ears. The cembrene diterpenoids including 11-dehydrosinulariolide (SC-2), 3,4:8,11-bisepoxy-7-acetoxycembra-15(17)-en-1,12-olide (SC-7), and sinularin (SC-9) reduced nitric oxide (NO) production with 50% inhibitory concentration of 5.66 ± 0.19 , 15.25 ± 0.25 , and 3.85 ± 0.25 μM , respectively, and inducible NO synthase expression in RAW 264.7 cells. Moreover, treatment with SC-2, SC-7, and SC-9 significantly suppressed lipopolysaccharide- and heat-killed *C. acnes*-induced expression of proteins involved in mitogen-activated protein kinase pathway in both RAW 264.7 and HaCaT cells. After treatment with SC-2, SC-7, and SC-9, over-proliferation of HaCaT cells was significantly terminated. In summary, SC-2, SC-7, and SC-9 showed anti-inflammatory effects in RAW 264.7 cells, suggesting that these cembrene diterpenoids obtained from *S. flexibilis* are natural marine products with potential anti-acne activities.

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Thyroid disease and active smoking may be associated with more severe hidradenitis suppurativa: Data from a prospective cross sectional single-center study. Liakou AI, Kontochristopoulos G, Marnelakis I, et al. Dermatology. 2020 Sep 23;1-6. doi: 10.1159/000508528. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32966979/>

Introduction: Hidradenitis suppurativa (HS) is an obscure disease presenting with painful, deep-seated nodules and abscess formation in body areas rich in apocrine glands. Several factors, including thyroid disease and active smoking, have been reported to be associated with HS, but it remains unclear if such associations are related to clinical HS severity. The aim of this prospective cross-sectional study is to investigate the association between active smoking and thyroid disease and HS, as well as to determine if these associations are related to HS severity. Methods: Eligible were all patients seen in our HS outpatient clinic between September 2018 and February 2020. Data regarding demographic characteristics, clinical disease severity, comorbidities, and treatment modalities were registered. Descriptive statistics of demographic and disease characteristics was conducted. In order to evaluate the association between the disease stage and certain variables of interest, ordered logistic regression was performed. Results: A total of 290 patients were included in the study. Of these, 48.9% were males, and 51.1% females. The patients had a mean age of 37.3 years. A total of 42.4% of the patients were at Hurley stage I, 43.1% at stage II, and 14.5% at stage III. According to the IHS4 score system, 30.7% of the patients had mild, 50.3% moderate, and 19.0% severe disease. The median duration of disease was 10 years. Among the patients, 56.5% were active smokers, and 55.5% patients reported that stress triggers the disease's flares. Univariable analyses demonstrated that among the various covariates, active smoking and thyroid disease were associated with a higher stage of disease. Conclusion: We conclude that thyroid disease and active smoking may be associated with more severe HS.

Improved anti-Cutibacterium acnes activity of tea tree oil-loaded chitosan-poly(ϵ -caprolactone) core-shell nanocapsules. da Silva NP, Carmo Rapozo Lavinias Pereira ED, Duarte LM, et al. *Colloids Surf B Biointerfaces*. 2020 Sep 19;196:111371. doi: 10.1016/j.colsurfb.2020.111371. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32980571/>

The purpose of this study was to develop tea tree oil (TTO)-loaded chitosan-poly(ϵ -caprolactone) core-shell nanocapsules (NC-TTO-Ch) aiming the topical acne treatment. TTO was analyzed by gas chromatography-mass spectrometry, and nanocapsules were characterized regarding mean particle size (Z-average), polydispersity index (Pdl), zeta potential (ZP), pH, entrapment efficiency (EE), morphology by Atomic Force Microscopy (AFM), and anti-Cutibacterium acnes activity. The main constituents of TTO were terpinen-4-ol (37.11 %), γ -terpinene (16.32 %), α -terpinene (8.19 %), p -cimene (6.56 %), and α -terpineol (6.07 %). NC-TTO-Ch presented Z-average of 268.0 ± 3.8 nm and monodisperse size distribution (Pdl < 0.3). After coating the nanocapsules with chitosan, we observed an inversion in ZP to a positive value ($+31.0 \pm 1.8$ mV). This finding may indicate the presence of chitosan on the nanocapsules' surface, which was corroborated by the AFM images. In addition, NC-TTO-Ch showed a slightly acidic pH (~ 5.0), compatible with topical application. The EE, based on Terpinen-4-ol concentration, was approximately 95 %. This data suggests the nanocapsules' ability to reduce the TTO volatilization. Furthermore, NC-TTO-Ch showed significant anti-C. acnes activity, with a 4 \times reduction in the minimum inhibitory concentration, compared to TTO and a decrease in C. acnes cell viability, with an increase in the percentage of dead cells (17 %) compared to growth control (6.6 %) and TTO (9.7 %). Therefore, chitosan-poly(ϵ -caprolactone) core-shell nanocapsules are a promising tool for TTO delivery, aiming at the activity against C. acnes for the topical acne treatment.

Altered gene expression in acne vulgaris patients treated by oral isotretinoin: A preliminary study. Jiang Y, Chen H, Han L, et al. *Pharmgenomics Pers Med*. 2020 Sep 15;13:385-395. doi: 10.2147/PGPM.S250969. eCollection 2020. <https://pubmed.ncbi.nlm.nih.gov/32982373/>

Background/objective: The role of gene expression changes in acne patients treated by oral isotretinoin (ISO) and in influencing the ISO therapeutic effects is still unclear. In this study, we investigated the gene profiles of patients with severe acne who responded variously to ISO therapy. Methods: The peripheral blood of 113 acne vulgaris patients (Pillsbury IV grade) was collected before treatment. After 8 weeks of oral ISO, nine acne patients were selected and divided into the following groups. A: effectively treated by ISO, group B: ineffectively treated by ISO, group C: ISO-induced acne flare-up, and 3 healthy subjects were included as control group D. The peripheral blood of patients pre- and post-treatment was subjected to high-throughput RNA sequencing technology and bioinformatics analysis of the separate groups (n = 3). The candidate genes were validated by qRT-PCR. Results: Comparing pre- and post-oral ISO treatment, gene expression was changed as 39 genes in ISO-effective group, 345 genes in ISO-ineffective group, and 57 genes in ISO-induced acne flare-up group. Comparing the ISO-induced acne flare-up group with healthy control subjects revealed 34 upregulated genes and 23 downregulated genes, while comparing the ISO-induced acne flare-up group with ISO-ineffective patients identified 1835 changed genes. Expression of GATA2 (2.73 fold, P=0.024512), C4BPA (35.87 folds, P=0.038073), and CCR5 (2.48 folds, P=0.004681) increased in the ISO-induced acne flare-up patients. Meanwhile, the expression of DEFA3 (0.18 fold, P=0.041934), ELANE (0.14 fold, P=0.030767), MMP9 (0.41 fold, P=0.013383), and RPS4Y1 (0.00018 fold, P=0.000986) decreased when compared with ISO-ineffective patients. Conclusion: Oral ISO treatment could temporarily alter gene expression in acne patients. ISO therapeutic mechanisms were involved, not only in regulating the inflammatory reaction but also in the process of DNA repair. GATA2, C4BPA, CCR5, DEFA3, ELANE, MMP9, and RPS4Y1 might be susceptible to genes that could participate in the ISO-induced aggravation of acne.

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Clinical Reviews

Use of spironolactone to treat acne in adolescent females. Roberts EE, Nowsheen S, Davis DMR, et al. *Pediatr Dermatol.* 2020 Oct 3. doi: 10.1111/pde.14391. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33009838/>

Background/objectives: Studies assessing the utility of spironolactone for treating acne in adolescent females are lacking. Thus, we sought to examine spironolactone's role in treating this patient population. Methods: A retrospective review was performed to determine the efficacy of spironolactone treatment in adolescent females seen at Mayo Clinic in Rochester, Minnesota, from 2007 to 2017. Results: In a cohort of 80 pediatric patients with a median age of 19 years (range, 14-20 years), 64 patients (80%) experienced improvement of acne on treatment with spironolactone (median dose, 100 mg daily) with a favorable side effect profile. Approximately a quarter of patients (22.5%) had a complete response; more than half (58.8%) had a complete response or a partial response greater than 50%. Initial and maximal responses were observed at a median of 3 months and 5 months, respectively. Patients received treatment with spironolactone for a median duration of 7 months (range, 3-45 months) with limited side effects. Conclusions: Spironolactone demonstrated efficacy in treating acne in adolescent females and is a safe long-term alternative to systemic antibiotics in these patients.

Anti-drug antibodies to TNF inhibitors in hidradenitis suppurativa: A systematic review. Lu JD, Milakovic M, Piguat V, Alavi A. *Br J Dermatol.* 2020 Oct 2. doi: 10.1111/bjd.19591. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33006769/>

Hidradenitis suppurativa (HS) is a chronic inflammatory condition which affects apocrine gland-rich skin. It primarily develops in intertriginous areas, including the axilla, groin, perianal, and perineal regions and presents with recurrent, painful nodules, abscesses, draining tunnels, and scarring. Despite the continuing research and development of biologics for HS, biologics can lead to the formation of anti-drug antibodies (ADAs) that inactivate the therapeutic effects of the treatment, leading to a decreased drug level and resulting in a suboptimal response.

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Drug repurposing through drug-gene interaction profiles for hidradenitis suppurativa/acne inversa treatment. Zouboulis CC, Nogueira da Costa A. *J Eur Acad Dermatol Venereol.* 2020 Oct 2. doi: 10.1111/jdv.16976. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/33007126/>

Despite the evidence-based effectiveness of several drugs, treatment of hidradenitis suppurativa (HS) is still empirical and challenging. The required discovery of candidate treatment targets may be accomplished through an integrated approach using combined molecular tools. Current transcriptome and proteome studies have identified potential biomarkers for HS both in entire involved skin and in involved skin apocrine glands. These and other studies may support the identification of novel therapeutic targets for HS. Computational drug repurposing/repositioning screening approaches have been previously engaged to identify existing compounds as potential drugs for dermatologic conditions including a study on moderate-to-severe HS.

Recent patents on phytoconstituents based formulations for treatment of acne infection: A review. Singh V, Verma R, Kaushik D, Mittal V. *Recent Pat Antiinfect Drug Discov.* 2020 Sep 29. doi: 10.2174/1574891X15666200929150103. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32990540/>

Background: Acne is a skin infection of skin, occurs in both men and women during their life span. There are various natural or synthetic products available in the market to prevent and cure this disease. Introduction: The majority of the world population depends on the herbs or natural resources for the relief in acne disease. These are used to lessen the cost of treatment and side effects of synthetic analogs. Methodology: We have explored the various

authentic web resources to compile information regarding different patented and marketed herbal formulations for acne treatment. Results: It has been found that most of the herbal formulation for acne include the plant actives/extracts having the potential activity against the Propionibacterium acne. The occurrence of this skin disease also associated with the presence of free radicals in the body, which also causes the inflammation and redness of the skin. Further, the study of various patents also revealed that herbs with antioxidant properties used in most of the herbal anti-acne formulations. Moreover, the various patents also give the idea that herbal formulations also prevent the appearance of pimples on the skin. Conclusion: It has been concluded that the herbal anti-acne formulation not only used to treat the acne but also acts in the prevention of this disease in a safely and economically manner.

Evaluation of the efficacy of subantimicrobial dose doxycycline in rosacea: A systematic review of clinical trials and meta-analysis. Husein-ElAhmed H, Steinhoff M. J Dtsch Dermatol Ges. 2020 Sep 28. doi: 10.1111/ddg.14247. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32989925/>

Background: Low-dose doxycycline (SDD) is an antimicrobial agent that appears to improve common inflammatory skin diseases. Few data are available regarding the overall effectiveness, appropriate length of treatment and optimal patient selection for rosacea. We therefore reviewed the efficacy of sub-antimicrobial doses of SDD in papulopustular rosacea (PPR) and aimed to determine the most suitable patients for this approach. Methods: From July to September 2019, we carried out a comprehensive search of literature from five databases, using a combination of "rosacea" AND "doxycycline". Results: Our search yielded 532 potentially relevant studies. Our meta-analysis showed no significant difference between SDD and a comparator (RR: 1.12, 95 % CI: 0.78-1.62, I2 = 86 %). Subgroup analysis of studies comparing doxycycline with placebo yielded a clear difference in favor of doxycycline (RR: 1.45, 95 % CI: 1.22-1.72, I2 = 31 %), while subgroup analysis of studies comparing active drugs revealed no difference between interventions (RR: 0.52, 95 % CI: 0.17-1.63, I2 = 90 %). Conclusions: There is strong evidence that SDD is more effective than placebo. However, other drugs such as minocycline or isotretinoin have shown outcomes at least similar to that of SDD. We suggest that the anti-inflammatory properties of SDD may be of more value for mild cases of rosacea than for moderate to severe cases, for which higher (antimicrobial) doses of doxycycline may be a more suitable choice.

Endocrinological disorders and inflammatory skin diseases during COVID-19 outbreak. A review of the literature. Marasca C, Fabbrocini G, Barrea L, et al. Minerva Endocrinol. 2020 Sep 24. doi: 10.23736/S0391-1977.20.03248-4. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32969629/>

Introduction: In the next future, dermatologists, endocrinologist and physicians may cope with the impact of extent SARS-CoV-2 (COVID 19) infection over chronic inflammatory skin diseases and their treatment. COVID-19 pandemic obliged many countries to impose social restrictions, resulting in the need to adapt daily lifestyle habits and working activities. These changes have drastically reduced physical activity and social interactions, with the possible increase of anxiety, eating disorders and weight gain. Evidence acquisition: We searched for relevant studies (trials, real-life studies and case reports, meta-analysis, pooled data analysis, reviews) on endocrine disorders and inflammatory skin diseases. The database used was PubMed. The studies included were those published in the English language between January 1, 2018 and May 5, 2020. Evidence synthesis: Several studies have been previously showed the association of overweight and obesity, with the metabolic syndrome and insulin-resistance. It has been demonstrated how these conditions correlate with the worsening of such chronic inflammatory skin diseases, such as psoriasis, hidradenitis suppurativa, and acne. Many evidences suggest an important role of adipose tissue in the production of pro-inflammatory cytokines (Leptin, adiponectin, TNF α , IL-6, MCP-1, PAI-1), involved in the pathogenesis and the exacerbations of these skin diseases. In addition, we should expect an increasing incidence rate of hypovitaminosis D in the next future due to reduced sun exposure caused by isolation at home and missed holidays. Scientific evidences already show the important immunomodulating role of vitamin D in inflammatory skin diseases.

Conclusions: Our study pays attention on medium-long term effects of COVID-19 outbreak on inflammatory skin disorders, due to the lifestyle changes. In such context this review considers how a multidisciplinary approach, involving dermatologists, nutritionists and endocrinologists, may lead to a better management of dermatologic patients.

Diagnosis and management of hidradenitis suppurativa in women. Collier EK, Parvataneni RK, Lowes MA, et al. Am J Obstet Gynecol. 2020 Sep 24;S0002-9378(20)31127-3. doi: 10.1016/j.ajog.2020.09.036. Online ahead of print. <https://pubmed.ncbi.nlm.nih.gov/32980357/>

Hidradenitis suppurativa is a chronic inflammatory disease that disproportionately affects women of childbearing age. Hidradenitis suppurativa is characterized by painful nodules, abscesses, draining dermal tunnels, and scarring with predilection for intertriginous sites, such as the axilla, groin, and breast regions. Delay in diagnosis and treatment of hidradenitis suppurativa often results in long-term sequelae leading to significant morbidity, and rarely mortality, in these patients. This Clinical Opinion suggests that Obstetrician-Gynecologists (ob-gyns) are uniquely poised to recognize early signs of hidradenitis suppurativa during routine well-woman exams and initiate treatment or referral to dermatology. Herein, we provide clinical pearls for ob-gyns caring for female patients with hidradenitis suppurativa, including strategies for comprehensive management and recommendations to improve comfort of hidradenitis suppurativa patients during exams.

Successful treatment of synovitis, acne, pustulosis, hyperostosis, and osteitis and paradoxical skin lesions by *Tripterygium wilfordii hook f*: A case report. Zhang X, Wu X, Li C. J Int Med Res. 2020 Sep;48(9):300060520949100. doi: 10.1177/0300060520949100. <https://pubmed.ncbi.nlm.nih.gov/32962502/>

Synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome is a rare autoinflammatory disorder without standardized therapy. Anti-tumor necrosis factor (TNF)- α agents, which have been widely used in recent treatment of SAPHO syndrome, may elicit severe paradoxical psoriasiform lesions. Therefore, physicians must reverse the paradoxical skin lesions in affected patients, while improving their clinical symptoms of SAPHO syndrome. Herein, we describe a patient with SAPHO who exhibited TNF- α antagonist-induced paradoxical skin lesions and benefitted from treatment with *Tripterygium wilfordii hook f* (TwHF). A 58-year-old woman with SAPHO developed paradoxical psoriasiform lesions and exacerbation of primary palmoplantar pustulosis after 7 weeks of etanercept treatment. She then received TwHF treatment, which resulted in rapid and remarkable improvement in her skin lesions and osteoarticular pain. These findings suggest that TwHF might be a suitable treatment option for patients with SAPHO who exhibit TNF- α antagonist-induced paradoxical skin lesions.

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