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Industry News

Vyome's acne treatment demonstrates positive phase 2 results. Healio Dermatology. June 29, 2020. https://www.healio.com/news/dermatology/20200629/vyomes-acne-treatment-demonstrates-positive-phase-2-results

VB-1953, a first-in-class topical bactericidal and TLR-MD2 inhibitor, showed a statistically significant difference in inflammatory lesions in the treatment of moderate to severe acne, according to a press release from Vyome Therapeutics. The phase 2 randomized, multicenter, double-blind, dose-ranging trial evaluated the safety and efficacy of VB-1953 gel when applied once or twice daily for 12 weeks. It included 471 subjects across 13 U.S. sites. "These results demonstrate that VB-1953, with its dual mechanism of action directly killing resistant and non-resistant C. acnes strains while blocking inflammation through TLR-MD2 inhibition, has the potential to become a safe and effective topical treatment for facial acne and an alternative to oral systemic drugs," Shiladitya Sengupta, PhD, scientific co-founder of Vyome, said in the release. In the intent to treat group, the mean absolute inflammatory lesion change in the VB-1953 once-daily group was 20.4 compared with 17.8 in the vehicle group ($P < .003$). In the per protocol group, the mean change was 20.4 in the treatment arm and 16.6 in the vehicle arm ($P < .001$). "We are very pleased to have met the primary endpoint of the study and to demonstrate the continued safety of the molecule. Patients need a highly effective drug, and our data shows a very high response, and our data shows a very high response, which is encouraging as we plan to advance to phase 3 with a once-daily dose," Vyome CEO Venkat Nelabhotla said in the release.

New Medical Research

The effect of isotretinoin therapy on oxidative damage in rats isotretinoin and oxidative damage in rats. Daye M, Belviranlı M, Okudan N, et al. Dermatol Ther. 2020 Jul 31. doi: 10.1111/dth.14111. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32737933/

Isotretinoin is prescribed in many dermatologic disorders, but mostly in acne. There is limited research about oxidative stress induced by isotretinoin and its effects on the liver tissue, muscle tissue, and blood. In this study, oxidative damage of isotretinoin on the liver, muscles, and blood in rats at the therapeutic dosage for humans, is evaluated. Thirty, 2-months-old Wistar albino rats were randomly divided into 4 groups. Isotretinoin was administered at the human equivalent low dose of 7.5 mg/kg by gavage. Blood, liver, and skeletal muscle samples were taken from the animals under anesthesia. Oxidative stress and antioxidant defense markers such as Malondialdehyde (MDA), Protein carbonyl (PC), 8-OHDG (8-hydroxy-deoxyguanosine), SOD (Superoxide dismutase), GSH(Glutathione), GPX (glutathione peroxidase), NO (Nitric Oxide) levels, Aspartate aminotransferase (AST), Alanine aminotransferase (ALT), creatine kinase (CK) levels were measured. There were significant differences between the ALT values of the control group and the third month of isotretinoin treatment group. Oxidative stress markers such as 8-OHDG, PC, GSH, GPX, and NO values significantly differed in month 3. SOD was significantly lower in the treatment groups compared to the control group. Our study supports that the levels of oxidative markers are increasing with the isotretinoin treatment so this may flare acne. GPX levels increased at the muscle tissue level, and may be responsible for the myopathy that is seen in acne patients. Addition of antioxidants to isotretinoin treatment may be beneficial in reducing oxidative damage.

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Isotretinoin plus 420 nm intense pulsed light versus isotretinoin alone for the treatment of acne vulgaris: A randomized, controlled study of efficacy, safety, and patient satisfaction in Chinese subjects. Li Y, Zhu J, Zhang Y, et al. Lasers Med Sci. 2020 Jul 30. doi: 10.1007/s10103-020-03113-z. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32728814/

Either isotretinoin or intense pulsed light (IPL) proved to be effective to alleviate acne lesions, but the combined treatment has rarely been reported. The study aimed to evaluate the efficacy, safety, and patient satisfaction of isotretinoin and 420 nm IPL combined treatment. Forty-seven patients with facial acne with Global Evaluation Acne (GEA) graded 2-4 were randomized into study group and control group. The patients in the control group received oral isotretinoin for 8 weeks. The patients in the study group were treated with oral isotretinoin for 8 weeks, together with a biweekly 420 nm IPL treatment for 4 weeks. Topical agents included adapalene and fusidic acid. Efficacy was evaluated using digital photographs taken at baseline and week 12 by an independent dermatologist, including GEA grade, lesion count, lesion reduction percentage, and effective rate. All patients completed a questionnaire about dermatology life quality index (DLQI) and satisfaction visual analog scale (VAS) on week 12, and were followed up for another 2 months. Adverse events were recorded. The patients in the study group experienced significant reduction in GEA grade, total lesions, and inflammatory lesions on week 12, compared with the control group ($p < 0.05$). The patients in the study group reported lower DLQI and higher VAS satisfaction ($p < 0.05$) and experienced lower incidence of relapse ($p < 0.05$). No severe adverse event was identified in both groups. Compared with isotretinoin alone, isotretinoin and 420 nm IPL combined treatment proved to be more effective within limited treatment duration. It was well-tolerated and the patients' satisfaction was high.

A comparison of the effectiveness of azelaic and pyruvic acid peels in the treatment of female adult acne: A randomized controlled trial. Chilicka K, Rogowska AM, Szyguła R, et al. Sci Rep. 2020 Jul 28;10(1):12612. doi: 10.1038/s41598-020-69530-w. https://pubmed.ncbi.nlm.nih.gov/32724156/

Chemical peels are widely used as therapeutic agents in dermatology and cosmetology. This study aims to explore the differences in the effectiveness of azelaic and pyruvic acid peels in the treatment of acne vulgaris. Eligibility criteria for participants were: female gender, 18-25 years of age, no dermatological treatment within the last 12 months and mild to moderate papulopustular acne. We treated 120 young women (with a mean age of 22 years old) with six peeling sessions at 2-week intervals. In the parallel clinical study design, one randomized group (n = 60, 50%) was treated using azelaic acid (AA), whereas the second group participated in pyruvic acid (PA) sessions. We evaluated the patients clinically twice (before and after treatment), using the Scale of Hellegren-Vincent Severity Symptoms to assess the acne diagnosis, and the Nati Analyzer to estimate the skin properties (oily skin, desquamation, porosity, and moisture). The clinical evaluation of the patients demonstrated a significant reduction of acne severity symptoms in both the AA and PA groups, after the peeling sessions. An effect was also found in terms of decreasing desquamation and the oiliness of the skin. PA showed a more significant reduction of greasy skin than AA. In conclusion, after the six peeling sessions using AA and PA, all patients showed better skin parameters in term of reduced oiliness and desquamation. Both AA and PA peelings are a safe and efficient treatment for mild acne, however, during the selection of one of the two acids, side effects, skin properties, and patients' preferences should be taken into account. This study was registered in the ISRCTN registry (registration number ISRCTN79716614, 17/01/2020).

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Stem cell membrane-coated isotretinoin for acne treatment. Wang S, Jiang R, Meng T, et al. J Nanobiotechnology. 2020 Jul 28;18(1):106. doi: 10.1186/s12951-020-00664-9. https://pubmed.ncbi.nlm.nih.gov/32723398/

Background: Topical isotretinoin is commonly used to treat acne. However, topical isotretinoin has side effects and can hardly permeate through the stratum corneum, the most important skin barrier. Therefore, this study aimed to demonstrate the efficacy of nanoparticles as stable carriers with great curative effects, low side effects, and strong transdermal ability. Results: In a rabbit model of hyperkeratinization, STCM-ATRA-NPs showed significant therapeutic efficacy. By contrast, negative therapeutic efficacy was observed in a golden hamster model of hyper sebum production. Scanning electron microscopy and Fourier transform infrared spectral analyses showed that nanoparticles could penetrate the stratum corneum. Western blotting demonstrated that the nanoparticles could enhance the transdermal efficacy of isotretinoin by reducing the effect of keratin and tight junction proteins. Further, nanoparticles enhanced endocytosis, thereby promoting drug penetration and absorption into the skin. Conclusion: STCM-ATRA-NPs were demonstrated to control isotretinoin release, reducing its side effects, and efficiently permeating through the skin by reducing the effect of keratin and tight junction proteins and enhancing endocytosis.

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Efficacy of non-ablative fractional 1440-nm laser therapy for treatment of facial acne scars in patients with rosacea: A prospective, interventional study. Wang B, Deng YX, Yan S, et al. Lasers Med Sci. 2020 Jul 27. doi: 10.1007/s10103-020-03107-x. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32719961/

Acne scarring is one of the most common facial skin disorders. The appropriate treatments for acne scars in patients with rosacea have not been studied. This study was designed to evaluate the efficacy and safety of non-ablative fractional 1440-nm laser (1440-nm NAFL) therapy for treatment of atrophic acne scars in patients with rosacea. In this prospective, interventional study, 32 patients with rosacea and acne scars underwent three sessions of 1440-nm NAFL therapy. Therapy efficacy, epidermal barrier function, and side effects were evaluated. Thirty patients completed and the median acne scar scores significantly reduced from 45 (30, 50) to 15 (15, 30) after three treatments ($P < 0.001$). The improvement score of acne scars was 2.7 ± 0.7; 22 (73.3%) were satisfied or highly satisfied. The rosacea erythema scores changed from 2.1 ± 0.4 to 1.9 ± 0.5 ($P = 0.326$), and flushing, burning, and stinging were not worse. The oil content after treatments was significantly reduced ($P < 0.001$), while there was no significant difference in other indicators of skin barrier function. The quality-of-life score decreased from 17.5 ± 3.8 to 14.1 ± 3.0 ($P < 0.001$). No serious side effects were observed. The 1440-nm NAFL therapy is effective in the treatment of acne scaring in patients with rosacea with little damage to the skin barrier.

Lactobacillus paraplantarum THG-G10 as a potential anti-acne agent with anti-bacterial and anti-inflammatory activities. Cha H, Kim SK, Kook M, Yi TH. Anaerobe. 2020 Jul 23;102243. doi: 10.1016/j.anaerobe.2020.102243. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32712375/

Cutibacterium acnes (formerly Propionibacterium acnes) is the main bacterium targeted for the prevention and medical treatment of acne vulgaris. Lactic acid bacteria (LAB) are a group of microorganisms classified by their ability to produce lactic acid through fermentation. Although the activities of LAB have been studied, their potential anti-acne effects are not well known. Here, Lactobacillus paraplantarum THG-G10, which has anti-bacterial activity against C. acnes, was isolated from traditional Kimchi in Republic of Korea. The anti-acne effects of dried cell-free supernatant of L. paraplantarum THG-G10 (DC-G10) were evaluated by determining its anti-microbial and anti-inflammatory activities. Anti-microbial activity was examined by a broth dilution assay: 25 mg/ml of DC-G10 inhibited the growth of C. acnes KCTC 5012 and KACC 1194; salicylic acid and benzoyl peroxide for acne treatment inhibited the growth of C. acnes KCTC 5012 and KACC 11946 at concentrations of 1.25 and 7.5 mg/ml, respectively; and tea tree oil inhibited

the growth of C. acnes KCTC 5012 but not the growth of C. acnes KACC 11946 at 50 mg/ml. Anti-inflammatory activity was evaluated by a nitric oxide (NO) assay: only DC-G10 and ascorbic acid reduced LPS-induced NO production in RAW 264.7 cells in a dose-dependent manner. In addition, the toxicities of erythromycin, salicylic acid, benzoyl peroxide, tea tree oil, and DC-G10 were examined in HaCaT cells and normal human dermal fibroblasts (NHDFs). In these cells, the cytotoxic effects of DC-G10 were weaker than the effects of erythromycin, benzoyl peroxide, and ascorbic acid. Furthermore, scanning electron microscopy revealed that DC-G10 induces deleterious morphological changes in the bacterial cell membrane. These results demonstrate that DC-G10 may be an effective and safe treatment for acne vulgaris.

Topical application of autophagy activating peptide improved skin barrier function and reduced acne symptoms in acne-prone skin. Lee Y, Shin K, Shin KO, et al. J Cosmet Dermatol. 2020 Jul 22. doi: 10.1111/jocd.13636. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32697858/

Background: Recent studies about the important roles of autophagy signaling in sebaceous lipogenesis and epidermal differentiation suggest potential benefits of autophagy activation in acne. Objective: To investigate the effects of an autophagy activator on acne-prone skin. Methods: Autophagy signaling in human immortalized SZ95 sebocytes, normal human epidermal keratinocytes and 3D reconstituted skin was examined. Effects of an autophagy-activating peptide on sebaceous lipogenesis was measured by fluorescence microscopic analysis. The clinical efficacy in acne-prone skin was evaluated through an eight week, double-blind, randomized, vehicle-controlled study. Changes in skin surface lipid compositions were further analyzed. Results: In cultured sebocytes and keratinocytes, the investigated autophagy-activating peptide increased LC3-II expression, indicating a stimulation of autophagy signaling. Testosterone and linoleic acid treatment induced lipogenesis in cultured sebocytes and further inhibited by the autophagy activator peptide treatment. Increased expression of differentiation marker proteins in cultured keratinocytes was also observed by autophagy activating peptide. In clinical study, reduction of closed comedones and the amount of skin surface lipids as well as of trans-epidermal water loss (TEWL) was observed in acne-prone skin after autophagy activating peptide application. In addition, reduction of squalene and increase of cholesterol were observed after an 8-week of application. Conclusions: Topical application of an autophagy activator down-regulated sebaceous lipogenesis and improved the skin barrier function. Considering the important roles of sebum and skin barrier function in acne pathogenesis, autophagy activation might represent a new therapeutic option in early forms of acne.

PEG-8 laurate fermentation of staphylococcus epidermidis reduces the required dose of clindamycin against cutibacterium acnes. Marito S, Keshari S, Huang CM. Int J Mol Sci. 2020 Jul 19;21(14):E5103. doi: 10.3390/ijms21145103. https://pubmed.ncbi.nlm.nih.gov/32707723/

The probiotic activity of skin Staphylococcus epidermidis (S. epidermidis) bacteria can elicit diverse biological functions via the fermentation of various carbon sources. Here, we found that polyethylene glycol (PEG)-8 Laurate, a carbon-rich molecule, can selectively induce the fermentation of S. epidermidis, not Cutibacterium acnes (C. acnes), a bacterium associated with acne vulgaris. The PEG-8 Laurate fermentation of S. epidermidis remarkably diminished the growth of C. acnes and the C. acnes-induced production of pro-inflammatory macrophage-inflammatory protein 2 (MIP-2) cytokines in mice. Fermentation media enhanced the anti-C. acnes activity of a low dose (0.1%) clindamycin, a prescription antibiotic commonly used to treat acne vulgaris, in terms of the suppression of C. acnes colonization and MIP-2 production. Furthermore, PEG-8 Laurate fermentation of S. epidermidis boosted the activity of 0.1% clindamycin to reduce the sizes of C. acnes colonies. Our results demonstrated, for the first time, that the PEG-8 Laurate fermentation of S. epidermidis displayed the adjuvant effect on promoting the efficacy of low-dose clindamycin against C. acnes. Targeting C. acnes by lowering the required doses of antibiotics may avoid the risk of creating drug-

resistant C. acnes and maintain the bacterial homeostasis in the skin microbiome, leading to a novel modality for the antibiotic treatment of acne vulgaris.
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Lymecycline versus clindamycin plus rifampicin in hidradenitis suppurativa treatment: Clinical and ultrasound evaluation. Caposiena Caro RD, Molinelli E, Brisigotti V, et al. Clin Exp Dermatol. 2020 Jul 19. doi: 10.1111/ced.14388. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32683727/
Background: Antibiotic therapy remains the first-line treatment for hidradenitis suppurativa (HS). However, literature data on comparative clinical efficacy and safety are limited. Aim: To investigate the efficacy of tetracycline (lymecycline 300 mg daily) versus the combination therapy clindamycin and rifampicin (600 mg plus 600 mg daily). Methods: The study retrospectively analyzed 52 patients divided in two groups of 26 patients receiving lymecycline (group A) and clindamycin plus rifampicin (group B) for 10 weeks. Subjects had mild, moderate and severe HS. The clinical and ultrasonography extent of disease was measured with Hurley scoring, Sonographic Score of Hidradenitis Suppurativa (SOS-HS), International Hidradenitis Suppurativa Severity Score System (IHS4), pain Visual Analogue Scale (pain-VAS), and Dermatology Life Quality Index (DLQI). The primary outcome was to evaluate and compare the clinical response at the end of antibiotic treatment (10 weeks) between the two groups, according to the Hidradenitis Suppurativa Clinical Response measure (HiSCR). Result: Both groups showed a significant improvement in IHS4, pain VAS and DLQI from baseline, particularly group A. The reductions in nodule counts were similar between the two groups, whereas the number of abscess and draining tunnels decreased more in group B. Disease free survival was similar between the two groups. Conclusions: Lymecycline and clindamycin plus rifampicin are both effective treatments of moderate-severe patients with HS. "Nodular" type HS seems to respond better to lymecycline, but predominantly "abscesses-tunnel" type to clindamycin plus rifampicin.

Transcriptomic analysis of hidradenitis suppurativa skin suggests roles for multiple inflammatory pathways in disease pathogenesis. Rumberger BE, Boarder EL, Owens SL, Howell MD. Inflamm Res. 2020 Jul 13. doi: 10.1007/s00011-020-01381-7. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32661800/
Objective: Hidradenitis suppurativa (HS) is a chronic inflammatory disease with limited treatment options; therefore, the current study investigated the downstream signaling pathways that are differentially expressed in HS subjects and may drive disease pathogenesis. Methods: The expression of 144 genes was evaluated in the skin of 16 healthy subjects and 34 subjects with mild to severe HS using QuantiGene Plex assay. Results: One hundred and twenty-nine genes were significantly elevated in lesional HS skin as compared to the skin of healthy controls including pro-inflammatory cytokines (IL-1α, IL-6, TNF-α), IL-17-associated cytokines (IL-17A, IL-17F, IL-23A), the IL-10 family of cytokines (IL-10, IL-19, IL-20, IL-22, IL-24), and IFN family members (IFNA1, IFNB1, IFNG, IL-12B). This corresponded with increased expression of tyrosine kinases (JAK1, JAK3, BTK, SYK) and their downstream signaling partners (STAT1, STAT2, STAT3, STAT5A, STAT5B, STAT6). Conclusion: These data illustrate the diverse immune activation in lesional HS skin and suggest that deeper interrogation of the disease heterogeneity may reveal unique opportunities for targeted therapies in designated subpopulations.

Novel polymeric tazarotene 0.045% lotion for moderate-to-severe acne: Pooled phase 3 analysis by race/ethnicity. Bhatia N, Weiss JS, Sadick N, et al. J Drugs Dermatol. 2020 Jul 1;19(7):727-734. doi: 10.36849/JDD.2020.5125. https://pubmed.ncbi.nlm.nih.gov/32726105/
Background: Acne vulgaris and inflammation-associated sequelae are highly prevalent in black and Hispanic populations. In a phase 2 study, a novel polymeric emulsion formulation of tazarotene 0.045% lotion had relatively fewer adverse events than tazarotene 0.1% cream, but with comparable efficacy. The objective was to evaluate

tazarotene 0.045% lotion by race and ethnicity in the pivotal trials. Methods: In two phase 3, double-blind, 12-week studies (NCT03168334; NCT03168321), participants with moderate-to-severe acne were randomized 1:1 to tazarotene 0.045% lotion or vehicle lotion (N=1,614). This pooled, post hoc analysis included subsets of participants that self-identified as white (n=1191) or black (n=262) and Hispanic (n=352) or non-Hispanic (n=1262). Coprimary endpoints were inflammatory/noninflammatory lesion counts and treatment success (defined as at least a 2-grade reduction from baseline in Evaluator's Global Severity Score and a score of 'clear' or 'almost clear'). Treatment-emergent adverse events (TEAEs) and cutaneous safety and tolerability were evaluated. Results: At week 12, tazarotene 0.045% lotion led to significantly greater percent reductions in inflammatory and noninflammatory lesions compared with vehicle in white, Hispanic, and non-Hispanic participants (P<0.05, all). Black participants had significantly greater reductions in noninflammatory lesions following treatment with tazarotene 0.045% versus vehicle (P<0.05). Treatment success rates in all subpopulations were higher with tazarotene 0.045% lotion (29.4-34.1%) versus vehicle (16.4-23.1%). TEAE rates were similar across tazarotene-treated groups and most were mild-to-moderate in severity. The incidence of hyperpigmentation decreased in black tazarotene-treated participants from baseline to week 12. Conclusions: Tazarotene 0.045% lotion demonstrated efficacy and was well tolerated across racial and ethnic subpopulations in this pooled analysis.

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Clinical Reviews

The versatility of azelaic acid in dermatology. Searle T, Ali FR, Al-Niaimi F. J Dermatolog Treat. 2020 Jul 30;1-31. doi: 10.1080/09546634.2020.1800579. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32730109/

Azelaic acid has numerous pharmacological uses in dermatology. Its anti-inflammatory and anti-oxidant properties are thought to correlate with its efficacy in papulopustular rosacea and acne vulgaris, amongst other cutaneous conditions. We conducted a review of the literature on the use of azelaic acid in dermatology using key terms "acne," "azelaic acid," "dermatology," "melasma," "rosacea," searching databases such as MEDLINE, EMBASE and PubMed. Only articles in English were chosen. The level of evidence was evaluated and selected accordingly listing the studies with the highest level of evidence first using the Oxford Centre of Evidence-Based Medicine 2011 guidance. This review found the strongest evidence supporting the use of azelaic acid in rosacea, followed by its use off-label in melasma followed by acne vulgaris. Weaker evidence is currently available to support the use of azelaic acid in several other conditions such as hidradenitis suppurativa, keratosis pilaris and male androgenic alopecia. Azelaic acid, as a monotherapy or in combination, could be an effective first-line or alternative treatment, which is well-tolerated and safe for a range of dermatological conditions.

Current insights for the management of acne in the modern era. Singh N, Singh A, Pandey K, Nimisha. Recent Pat Antiinfect Drug Discov. 2020 Jul 29. doi: 10.2174/1574891X15999200729192138. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32729430/

Background: Acne Vulgaris a chronic disease which is caused by blockage of the sebaceous gland is commonly seen in almost every human being at some point of their lives. There are 20-25% chances of progression of acne to severe case which leads to permanent scarring that results in psychological problems like depression, social isolation, lowered self-esteem, and lowered self-confidence. Objective: Though several conventional treatments are available in the market but still there are various adverse effects associated with topical antiacne agents due to which it lacks in patient compatibility. The present study is undertaken to find out the major shortcomings like why the current therapies are lacking in giving the desired therapeutic results. Conclusion: Novel drug delivery strategies can play a crucial role in the enhancement of topical delivery of antiacne agents by escalating their dermal localization and

reducing their adverse effects. Consumption of medicinal plants like Aloe vera, Withania somniferia etc. have clinical evidences regarding the effective management of acne. The current inclination towards nanotechnology is considerable due to several changes in the pharmaceutical research area. To secure the research work in different pharmaceutical fields patents are filed against various agents like Galderma Research & Development have filed for adapalene and benzoyl peroxide for the management of acne vulgaris. The current review highlights the potential of various novel drug delivery approaches like liposomes, niosomes, ethosomes, transfersomes etc. in enhancing the topical delivery of antiacne agents.

A retrospective evaluation of laboratory parameters and hyperuricemia in patients with acne vulgaris under systemic isotretinoin treatment. Sarac N, Pancar GS, Ozdemir S, Atilla S. J Dermatolog Treat. 2020 Jul 24;1-14. doi: 10.1080/09546634.2020.1800575. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32705916/
Background: Acne vulgaris is a chronic inflammatory disease affecting the pilosebaceous unit. Systemic isotretinoin (SI) is an effective, synthetic vitamin A derivative in the treatment of resistant acne or nodulocystic acne. This study aimed to investigate uric acid levels and laboratory parameters in patients receiving isotretinoin treatment. Materials and methods: This study included 114 patients who were under SI treatment of 0.2-0.5mg/kg/day aged between 17 and 44 years old. We retrospectively evaluated total cholesterol, triglyceride, aspartate aminotransferase (AST), alanine aminotransferase (ALT), urea, creatinine, creatinine kinase, uric acid, thrombocyte (Plt) and leucocyte (WBC) levels prior and on the fourth month of the treatment from the patients' records and compared these data statistically. Results: The AST, creatinine kinase, cholesterol, triglyceride and thrombocyte levels were significantly different ($p < 0.001$, $p < 0.001$, $p < 0.001$, $p < 0.001$ and $p = 0.02$, respectively), and no statistically significant differences were noted among the uric acid, creatinine, ALT and WBC levels in the comparison of the baseline values and values at the fourth month of treatment ($p > 0.05$). Conclusions: SI treatment of 0.2-0.5mg/kg/day did not make significant alterations on serum uric acid levels. Besides, all alterations occurred within normal ranges.

Emerging drugs for the treatment of hidradenitis suppurativa. Folkes AS, Hawatmeh FZ, Wong A, Kerdel FA. Expert Opin Emerg Drugs. 2020 Jul 22;1-11. doi: 10.1080/14728214.2020.1787984. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32667213/
Introduction: Hidradenitis suppurativa (HS) is a severe, chronic inflammatory disorder that causes recurrent occlusion of hair follicles in the intertriginous regions of the skin. Mild to moderate HS has been successfully treated with oral antibiotics, topical therapy, and lifestyle modifications. However, moderate to severe HS is known to be refractory to conventional treatments. Wide excision surgery is a treatment option for severe HS, but often leads to functional impairments. Additionally, recurrence is common. The proper management of moderate to severe HS continues to be a challenge to practitioners. Areas covered: A comprehensive literature search was conducted to identify published HS treatments using PubMed databases, in addition, ongoing studies were sought in clinicaltrials.gov. Search terms included 'hidradenitis suppurativa,' 'treatment,' and 'management.' Expert opinion: Although adalimumab is currently the only biologic approved by the United States Food and Drug Administration for treatment of HS, there are many studies underway involving the development of drugs with a variety of immunological targets. Those potential HS therapies in either Phase II or Phase III trials show much promise. Since HS is a complicated disease that involves both pathological and environmental factors, treating HS continues to involve a multidisciplinary approach and monotherapy tends to not be efficacious.

A case paradoxical hidradenitis suppurativa (HS) with janus kinase inhibitor, literature review and pooled analysis of biological agent-induced HS. Shaharir SS, Jamil A, Chua SH, et al. Dermatol Ther. 2020 Jul 16. doi: 10.1111/dth.14021. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32677247/

Hidradenitis suppurativa (HS) is a debilitating chronic inflammatory skin disease. Biological therapy has revolutionized it's the treatment. Paradoxical HS occur with various biological and targeted agents. We report a patient with juvenile rheumatoid arthritis who developed HS after 6 months of tofacitinib therapy. A comprehensive literature review identified 43 cases of paradoxical HS among patients on biological and targeted agents. Pooled analysis of the cases showed Crohn's disease 18(41.8%) and RA 9(20.9%) as commonest indications for biological therapy. Adalimumab 20(46.5%) followed by infliximab 9(20.9%) were the commonest offending agent. Duration of biological treatment prior to HS manifestation was 12(1-120) months. Smoking 21(48.8%) and overweight or obese 20(46.5%) were most frequent HS risk factors. Fourteen (32.6%) patients had a second paradoxical event, 11(25.6%) developed psoriasis and 4(9.3%) Crohn's disease. Presence of ≥1 risk factor for HS, continuation of the implicated biological agent and occurrence of more than one paradoxical event were factors associated with poor paradoxical HS outcome.

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Understanding the relationship between smoking and hidradenitis suppurativa. Bukvić Mokos Z, Miše J, Balić A, Marinović B. Acta Dermatovenerol Croat. 2020 Jul;28(1):9-13. https://pubmed.ncbi.nlm.nih.gov/32650845/

Hidradenitis suppurativa (HS) is a chronic skin disease affecting hair follicles in intertriginous areas, characterized by deep, recurrent, painful nodules and abscesses, fistulae, sinus tracts, and scarring. With a prevalence of 1-4%, HS is not an uncommon disease. Several risk factors have been linked with the development of HS, such as genetic predisposition, smoking, and obesity, leading to the hypothesis that HS develops as a result of environmental triggers in a genetically susceptible individual. Smoking has been recognized as one of the environmental factors with the most impact on HS. This review aims to provide a comprehensive and holistic view on how smoking habits affect the incidence, severity, treatment, and pathophysiology of HS. A growing body of published literature has reported the association between smoking and HS, despite limitations in proving the causal relationship due to the retrospective design of the available studies. There is a consensus that patients with HS who are active smokers have a higher number of affected body areas than patients with HS who do not smoke or have stopped smoking. Similarly, it is recommended for patients with HS to discontinue tobacco use because of its association with weaker treatment response. Studies on the pathophysiological mechanism of smoking on the skin show that tobacco smoke with many of its chemicals as well as nicotine promote the proinflammatory cytokines found in HS lesions, activate the nicotinic acetylcholine (nAChRs) and aryl hydrocarbon receptors (AHRs), and further suppress Notch signaling pathway.

Treating inflammation in rosacea: Current options and unmet needs. Tan J, Jackson JM. J Drugs Dermatol. 2020 Jun 1;19(6):585-591. doi: 10.36849/JDD.2020.10.36849/JDD.2020.5187.
https://pubmed.ncbi.nlm.nih.gov/32574018/

Rosacea is a disease resulting from dysregulation of innate, adaptive, and neurovascular immune systems. Inflammatory pathways activated in rosacea can explain many of its signs and symptoms. Current treatments address some of these inflammatory processes, alleviating erythema and decreasing papules and pustules. However, for the majority of patients, complete clearance of these features is not currently achievable even with combination therapy. There is a need to address the spectrum of inflammatory processes involved in rosacea and for more efficacious agents with the goal of providing complete clearance for patients.

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