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New Medical Research

Evaluation of the efficacy and safety of platelet rich plasma injection in treatment of rosacea. Ghoz MT, Mohamed DA, Ibrahim ZA, Hassan GFR. Dermatol Ther. 2021 Jul 1;e15049. doi: 10.1111/dth.15049. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/34197656/

Rosacea is a chronic relapsing inflammatory skin disease, with a high prevalence among adults. Treatment of rosacea is difficult, with high rate of recurrence. Due to the strong anti- inflammatory and antibacterial effects of platelet rich plasma, it was used in the medicine for treating many inflammatory diseases. To evaluate the role of platelet rich plasma injection in treatment of rosacea. The study was carried on 40 patients with rosacea. They were treated by platelet rich plasma injection in right side of the face (group A) and platelet poor plasma injection in left side (group B). They underwent one session every 2 weeks for 3 months (6 sessions). The patients were assessed clinically before and after treatment by the Rosacea grading scale. Skin biopsies were taken to evaluate the clinical results. There was a statistically significant decrease in Rosacea grading scale after treatment with platelet rich plasma injection, 50% of the patients showed excellent improvement and 50% showed good improvement. The improvement was significantly better in group A than B. There was marked decrease in inflammatory cells by haematoxylin and eosin stain and decrease in expression of nuclear factor kappa βeta after treatment with platelet rich plasma. PRP was effective and safe technique in treatment of rosacea and alternative to other systemic modalities, especially if they are contraindicated.

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Efficacy and safety of non-insulated fractional microneedle radiofrequency for treating difficult-to-treat rosacea: a 48-week, prospective, observational study. Wang B, Deng YX, Li PY, et al. Arch Dermatol Res. 2021 Jul 1. doi: 10.1007/s00403-021-02259-2. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/34196817/

Rosacea is a common chronic facial inflammatory skin disease. However, treatment for "difficult-to-treat rosacea" cases has not been established. This 48-week, prospective, observational study analyzed patients who underwent three non-insulated fractional microneedle radiofrequency (NFMRF) sessions at 2-month intervals. Therapy efficacy, epidermal barrier function, and side effects were evaluated. 34 subjects completed the trial. NFMRF resulted in CEA score reduction from 2.65 ± 0.59 to 1.56 ± 0.50 ($P < 0.001$) and mean DLQI reduction from 16.70 ± 3.55 to 10.48 ± 2.92 ($P < 0.001$). The successes of CEA (44.12 vs. 2.94%), IGA (91.67 vs. 25.00%), and flushing (58.82 vs. 26.47%) were observed. Among 34 patients, 22 reported "excellent" or "good" improvement and 30 were "very" or "relatively" satisfied. Skin barrier results revealed that hemoglobin content significantly decreased from 376.47 ± 71.29 at visit 0 to 161.32 ± 52.86 at visit 3. 2 of 30 patients followed-up at 6 months had a relapse at 18 and 20 weeks, respectively. No serious side effects were observed. NFMRF alone results in visible improvement and has great efficacy for difficult-to-treat rosacea without compromising patient safety or damaging the skin barrier.

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Therapeutic effect of a newly isolated lytic bacteriophage against multi-drug-resistant cutibacterium acnes infection in mice. Lam HYP, Lai MJ, Chen TY, et al. Int J Mol Sci. 2021 Jun 29;22(13):7031. doi: 10.3390/ijms22137031. https://pubmed.ncbi.nlm.nih.gov/34209998/

Acne vulgaris, which is mostly associated with the colonization of Cutibacterium acnes (C. acnes), is a common skin inflammatory disease in teenagers. However, over the past few years, the disease has extended beyond childhood to chronically infect approximately 40% of adults. While antibiotics have been used for several decades to treat acne lesions, antibiotic resistance is a growing crisis; thus, finding a new therapeutic target is urgently needed. Studies have shown that phage therapy may be one alternative for treating multi-drug-resistant bacterial infections. In the

present study, we successfully isolated a C. acnes phage named TCUCAP1 from the skin of healthy volunteers. Morphological analysis revealed that TCUCAP1 belongs to the family Siphoviridae with an icosahedral head and a non-contractile tail. Genome analysis found that TCUCAP1 is composed of 29,547 bp with a G+C content of 53.83% and 56 predicted open reading frames (ORFs). The ORFs were associated with phage structure, packing, host lysis, DNA metabolism, and additional functions. Phage treatments applied to mice with multi-drug-resistant (MDR) C.-acnes-induced skin inflammation resulted in a significant decrease in inflammatory lesions. In addition, our attempt to formulate the phage into hydroxyethyl cellulose (HEC) cream may provide new antibacterial preparations for human infections. Our results demonstrate that TCUCAP1 displays several features that make it an ideal candidate for the control of C. acnes infections.
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Individualized homeopathic treatment of acne-an analysis of 83 patients. Nwabudike LC. Homeopathy. 2021 Jun 29. doi: 10.1055/s-0041-1728666. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/34187050/
Background: Acne is a common disorder of the pilosebaceous follicle. The face, back and chest are usually involved. It leads to significant diminution in quality of life. Numerous treatments are documented in therapeutic guidelines. Naturopathic approaches have been proposed in some, but the role of homeopathy is not examined. Methods: In this study, 83 patients treated for acne with individualized homeopathic medicine alone were reviewed. Most had received conventional acne treatment, with limited success prior to presentation for homeopathy. Each patient was prescribed a single homeopathic medicine and followed up at 6- to 8-week intervals. The individualization process resulted in 17 different medicines being used in this group. Photographic documentation was obtained per patient, with informed consent. Patients were classified as mild (comedonal acne with no papules or pustules), moderate (inflammatory and non-inflammatory lesions) and severe (predominantly inflammatory lesions: pustules, cysts, nodules). Results of treatment were recorded as remission (decrease in new lesion number, duration and intensity), failure to respond, and lost to follow-up (LTF). Results: The average age of patients was 21.5 years (range 11-45 years). The F:M ratio was 55 (66.3%):28 (33.7%). Average pre-treatment duration was 5.5 years (0.25-22 years). Seven (8.4%) patients had mild acne, 37 (44.6%) moderate, and 39 (47%) severe acne. There were 13 (15.7%) LTFs, two (2.4%) failed to respond, and 68 (81.9%) went into remission. Average time to remission was 1.9 months (range 1.5-6 months), with no relapses or side-effects. The most commonly prescribed medicines were Lycopodium (38.6%), Palladium (15.7%) and Platinum (12.1%). Conclusion: Individualized homeopathy may be useful for acne therapy. The most useful medicines appeared to be Lycopodium, Palladium and Platinum, though 17 different medicines were used in this study, underscoring the value of individualization of therapy, a key characteristic of homeopathy.

Rapid wound healing and acne scar improvement after ablative fractional carbon dioxide laser treatment combined with the application of platelet-lyophilized treatment (PLT). Huang CC, Thong HY. Clin Cosmet Investig Dermatol. 2021 Jun 25;14:715-721. doi: 10.2147/CCID.S316505. eCollection 2021. https://pubmed.ncbi.nlm.nih.gov/34211289/
Objective: There are several clinical cases on the application of PRP (platelet-rich plasma) therapies. To improve disadvantages such as the inability to be standardized and stored long term, we proposed a novel platelet-lyophilized treatment (PLT) to enhance the wound healing rate and improve acne scarring. Study design: A single-blinded study at a single health care center was performed. All subjects were treated with a fractional carbon dioxide laser. On the right side of the face, 2 mL PLT solution (dissolved in normal saline) was applied, while on the left side of the face (control group), 2 mL normal saline was applied. The treatment described above was repeated every 3 to 4 weeks, and 4 treatments were performed in total. Assessments were performed prior to each treatment and at the one-month follow-up after the fourth treatment. Subjective assessments included questionnaires administered by the principal

investigator and a self-assessment questionnaire completed by the subjects. Moreover, VISIA complexion analysis was used for objective data collection, and spots, wrinkles, texture, pores, UV spots, brown spots, red areas, and porphyrins were objectively analyzed. Results: Our data indicated that the PLT side showed a more rapid recovery than the saline side; on average, the sloughing off of the crusts was noted on day 5 and day 6. The improvement rate for skin spots, texture, and pores was significantly increased on the PLT side, with the pigment and pore size both having a statistically significant improvement of $p<0.001$, while the texture had a significant improvement of $p<0.01$. Conclusion: The results suggested that the application of PLT could be a novel method to enhance wound healing and improve acne scarring after laser skin rejuvenation.
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Tailoring of retinyl palmitate-based ethosomal hydrogel as a novel nanoplatform for acne vulgaris management: Fabrication, optimization, and clinical evaluation employing a split-face comparative study. Salem HF, Kharshoum RM, Awad SM, et al. Int J Nanomedicine. 2021 Jun 24;16:4251-4276. doi: 10.2147/IJN.S301597. eCollection 2021. https://pubmed.ncbi.nlm.nih.gov/34211271/
Aim: Retinyl palmitate (RP), the most stable vitamin A derivative, is used to treat photoaging and other skin disorders. The need to minimize the adverse effects of topical drug administration has led to an enhanced interest in loading RP on ethosomes for topical drug delivery. The aim of the current study was to prepare and compare the performance of RP decorated ethosomal hydrogel with tretinoin cream in the treatment of acne vulgaris as an approach to improve drug efficacy and decrease its side effects. Methods: RP-loaded ethosomes were prepared using the injection sonication technique. A Box-Behnken design using Design Expert® software was used for the optimization of formulation variables. Particle size, zeta potential (ZP), entrapment efficiency percent (EE%), % drug release, and permeation over 24 h of different formulations were determined. The optimal formulation was incorporated into a hydrogel. Finally, the efficacy and tolerability of the optimized RP ethosomal hydrogel were clinically evaluated for acne treatment using a split-face comparative clinical study. Results: The optimized ethosomal RP showed particle size of 195.8±5.45 nm, ZP of -62.1±2.85 mV, EE% of 92.63±4.33%, drug release % of 96.63±6.81%, and drug permeation % of 85.98 ±4.79%. Both the optimized RP ethosomal hydrogel and tretinoin effectively reduced all types of acne lesions (inflammatory, non-inflammatory, and total lesions). However, RP resulted in significantly lower non-inflammatory and total acne lesion count than the marketed tretinoin formulation. Besides, RP-loaded ethosomes showed significantly improved tolerability compared to marketed tretinoin with no or minimal skin irritation symptoms. Conclusion: RP ethosomal hydrogel is considerably effective in controlling acne vulgaris with excellent skin tolerability. Therefore, it represents an interesting alternative to conventional marketed tretinoin formulation for topical acne treatment.

Ultrasound-guided photodynamic therapy with intralesional methylene blue and a 635 nm light-emitting diode lamp in hidradenitis suppurativa: A retrospective study of 41 patients. Gamissans M, Riera-Martí N, Romaní J, Gilaberte Y. Photodermatol Photoimmunol Photomed. 2021 Jun 22. doi: 10.1111/phpp.12709. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/34157160/
Background: Photodynamic therapy for hidradenitis suppurativa (HS) is a therapeutic alternative with a good safety profile, but its effectiveness has yet to be demonstrated. Objectives: To demonstrate the effectiveness of PDT with intralesional methylene blue in HS lesions. Methods: A retrospective cross-sectional study was performed. Forty-one patients were treated with intralesional methylene blue and a diode lamp. Follow-up was carried out at 1 and 6 months after therapy. Efficacy was determined by the diameter reduction of the lesion measured by high-frequency ultrasound. Results: A reduction of ≥75% in the maximum diameter was recorded in 58.5% of the lesions, while 22% showed a reduction between 50% and 75%, and 19.5% showed a reduction of <50%. Recurrence rate was 12.5%.

The lesions treated in patients with typical forms of HS (Canoui-Poitrine phenotype I) had a better therapeutic response. No statistically significant differences were found in terms of lesion location or concomitant treatment. Conclusion: This therapy may potentially be a cost-effective and well-tolerated local therapy for Hurley I-II patients with superficial abscesses and fistulas.

Antibacterial susceptibility testing of cutibacterium acnes in acne vulgaris patients. Skadins I, Zavorins A, Kroica J, et al. Clin Cosmet Investig Dermatol. 2021 Jun 18;14:671-677. doi: 10.2147/CCID.S311624. eCollection 2021. https://pubmed.ncbi.nlm.nih.gov/34168479/

Introduction: Combination therapy is widely used for the treatment of acne vulgaris (AV), including local anti-inflammatory drugs containing antimicrobials, such as clindamycin or erythromycin, to inhibit Cutibacterium acnes (C. acnes) growth and at the same time reduce the production of inflammatory mediators. The aim of the study is to compare the antibacterial susceptibility of C. acnes to clindamycin and erythromycin in AV patients compared with healthy patients in the control group (CG). Methods: The prospective study included 56 patients with clinically diagnosed AV symptoms and 12 patients were included in the CG who did not have AV. In the AV group, patient specimen was contents of pustules obtained by squeezing pustules, but in the CG, the specimen was content of sebaceous glands. All specimens were cultivated on a combined Mueller-Hinton solid medium. Identification was done by VITEK2 and followed by determination of antibacterial susceptibility of the isolated C. acnes strains by E-test. Results: C. acnes was isolated from samples of 28 (50%) in the AV group, whereas in the CG, C. acnes was isolated from 10 samples (80%). Resistance to clindamycin in both groups was similar, in 6 (21.4%) samples from patients in the AV group and in 2 (20.0%) samples in the CG, but resistance to erythromycin in the AV patients was higher compared to the CG, in 8 (28.6%) and 1 (10%) accordingly. Conclusion: Patients with AV have higher rates of resistance to erythromycin than the CG, while resistance to clindamycin is comparable. Resistance data showed no statistically significant association between use of erythromycin and clindamycin and the development of resistance. More C. acnes were identified in the CG than in the AV group.

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Association of trimethylamine n-oxide (TMAO) with the clinical severity of hidradenitis suppurativa (acne inversa). Barrea L, Muscogiuri G, Pugliese G, et al. Nutrients. 2021 Jun 10;13(6):1997. doi: 10.3390/nu13061997. https://pubmed.ncbi.nlm.nih.gov/34200594/

In this case-control, cross-sectional, observational study, we evaluated circulating trimethylamine n-oxide (TMAO) levels, a gut-derived metabolite associated with inflammation and cardiometabolic risk, in patients with hidradenitis suppurativa (HS), a highly disabling inflammatory skin disease associated with an elevated prevalence of comorbidities, especially cardiovascular and metabolic diseases. In this study, we enrolled 35 naive-treatment patients with HS and 35 controls, matched for sex, age, and body mass index (BMI). HS Sartorius score was 49.0 (33.0-75.0), while according to the Harley system 12 and 23 patients presented grade 1 and grade 2 severity, respectively. HS patients had a lower adherence to the Mediterranean diet (MD) ($p = 0.002$), lower phase angle (PhA) ($p < 0.001$), and higher circulating TMAO levels ($p < 0.001$) than the control group. HS patients with grade 2 rather than grade 1 of Harley grade severity showed a higher BMI ($p = 0.007$), waist circumference ($p = 0.016$), total energy intake ($p = 0.005$), and lower PhA ($p < 0.001$) and adherence to the MD ($p = 0.003$). Of interest, patients with Hurley grade 2 of severity exhibited higher circulating TMAO levels ($p < 0.001$) compared to grade 1. Circulating TMAO levels showed a positive correlation with HS Sartorius score even after adjustment for confounding covariates, including BMI, waist circumference, adherence to the MD, total energy intake, and PhA ($r = 0.570$, $p = 0.001$). Using a linear regression model, circulating TMAO levels and PhA were the main predictors of the clinical severity of HS.

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An open-label study comparing oral zinc to lymecycline in the treatment of acne vulgaris. Tolino E, Skroza N, Mambrin A, et al. J Clin Aesthet Dermatol. 2021 May;14(5):56-58. Epub 2021 May 1. https://pubmed.ncbi.nlm.nih.gov/34188751/

Background: Acne is a chronic multifactorial skin disease with a high prevalence among adolescents. The therapeutic approach for mild to moderate papulopustular acne includes the use of systemic tetracycline. Increased risk of antibiotic resistance necessitates research into alternative therapeutic approaches, such as zinc sulphate. Efficacy of zinc sulphate in acne treatment is widely reported in the literature, but drug comparison studies are lacking. Objective: We sought to compare the efficacy and safety of zinc sulphate to lymecycline for the treatment of mild to moderate papulopustular acne. Methods: One hundred patients were equally randomized to receive either zinc sulphate or lymecycline. Acne severity was evaluated using the subjective Global Acne Grading System (GAGS) and the Acne-specific Quality of Life (AQoL) questionnaire at baseline and after four and 12 weeks. Results: Both zinc sulphate and lymecycline induced a statistically significant reduction in GAGS scores at four and 12 weeks of treatment. The improvements in AQoL scores in patients treated with zinc sulphate were significantly higher than those in the lymecycline group. Conclusions: Our study suggests that zinc sulphate is a valid alternative therapeutic approach in the treatment of mild to moderate papulopustular acne relative to lymecycline in terms of clinical efficacy, tolerability, and the occurrence of side effects.

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Comparison of normal saline injection with pneumatic injector to subcision for the treatment of atrophic acne scars. Pravangsuk J, Udompataikul M, Cheyasak N, Kamanamool N. J Clin Aesthet Dermatol. 2021 May;14(5):50-55. Epub 2021 May 1. https://pubmed.ncbi.nlm.nih.gov/34188750/

Background: Acne scarring is a concerning consequence of acne with a prevalence of 11 to 14 percent after acne resolution. Needle subcision is usually used by clinicians to treat acne scars due to its safety and simplicity. Recently, normal saline injection with a pneumatic injector has shown compatible outcomes in treating acne scars. Objective: This study compared the effectiveness of acne scar treatment with a pneumatic injector and that of hypodermic needle subcision. Methods: Twenty patients with moderate to severe atrophic acne scars were voluntarily enrolled. All consecutive patients were randomly selected and treated with normal saline injection by using a pneumatic injector on one side of the face during three sessions, separated by a four-week interval. The other side of the face was treated with needle subcision at the end of the first week of the protocol. Subjective assessments were performed by self-evaluation and two blinded dermatologists. For objective assessment, the depth and volume of acne scars were estimated by an ultraviolet A light video camera and Vernier calipers at baseline and four, eight, and 12 weeks. Pain score and adverse reactions were also noted at each visit. Results: Eighteen patients with Fitzpatrick Skin Type III or IV completed the study. Differences in the resolution in diameter and the volume of boxcar and rolling acne scars over 12 weeks of follow-up between the pneumatic injection and needle subcision groups were statistically significantly improved relative to at baseline; however, there was no statistically significant difference in the efficacy between the two modalities. Satisfaction with each modality was not statistically different. No serious adverse effects occurred. Minor reactions such as minor hematoma and subcutaneous emphysema resolved within two weeks. Conclusions: The efficacy of normal saline injection with a pneumatic injector is not statistically different from that of needle subcision in treating boxcar and rolling acne scars; however, less side effects were recorded. Given this advantage, the use of pneumatic injectors should be considered for treating acne scars.

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Clinical Reviews

Nanotechnology-based formulations towards the improved topical delivery of anti-acne active ingredients. Paiva-Santos AC, Mascarenhas-Melo F, Coimbra SC, et al. Expert Opin Drug Deliv. 2021 Jul 2. doi: 10.1080/17425247.2021.1951218. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/34214003/

Introduction: Acne vulgaris is a chronic inflammatory skin disorder that affects an extremely concerning percentage of teenagers (ca. 85%), gathering serious negative impacts on the social life and psychological well-being of individuals. Conventional topical formulations for acne show low tolerability and side effects, such as skin irritation, leading to a decrease in the user's adherence to therapy. Nanotechnology-based formulations were developed as new strategies for topical acne management, particularly to overcome the difficulties associated with conventional treatments. Areas covered: This paper presents a critical analysis of reviewed nanosized anti-acne technological strategies, strongly supporting controlled active ingredient release, improved skin permeation, and lower skin irritation. An updated regulatory framework, considering the promising applications in nanomedicine, and the toxicity of these nanosystems are also addressed. Expert opinion: Nanosystems evidence several advantages, attending to the possibility of controlled active ingredient release, better skin permeation, and lower skin irritation. However, novel nanotechnological strategies for acne treatment and care can lead to new side effects, but also environmental nano pollution. Little is known about the toxicology of these nanotechnology-based formulations therefore, as future trends, more studies should be conducted to assure the consumers' health and environmental safety.

Effects and safety of acne vulgaris with external application of herbal medicines: A protocol for systematic review and meta analysis. Zhou J, Li X, Chen H, et al. Medicine (Baltimore). 2021 Jul 2;100(26):e26408. doi: 10.1097/MD.0000000000026408. https://pubmed.ncbi.nlm.nih.gov/34190157/

Background: Acne vulgaris (AV) is a common dermatologic disease. The morbidity is increasing annually. External application of herbal medicines (EAHM) has been pervasively used in the therapy of AV. EAHM , as the traditional Chinese therapy, is widely applied in clinical trials for AV. The aim of this review is to systematically evaluate the efficacy and safety of EAHM in the therapy for AV. Methods: We will conduct an electronic search of 13 databases from their inception to May, 2020, including PubMed, EMBASE, MEDLINE, Web of Science, Cochrane Library, SpringerLink, WHO International Clinical Trials Registry Platform, Wanfang China database, China National Knowledge Infrastructure, Chinese Biomedical Literature Database, Chinese Scientific Journal Database, as well as China's Conference Papers Database and China Dissertation database. Other valid search strategies will also be retrieved to complete this review. All randomized controlled trials in which EAHM was used for the treatment of AV will be adopted. Two researchers will select eligible studies respectively according to a predefined protocol. Methodological quality will be assessed with Cochrane risk of bias by means of RevMan V.5.3.5 software. Results: This systematic view will present a high-quality synthesis based on current evidence of EAHM intervention for AV patients. Conclusion: The summary of our systematic view will provide evidence to judge whether EAHM is an effective and safe intervention for AV patients.

Topical calcineurin inhibitors as a double-edged sword in rosacea: A systematic review. Zhang H, Yang L, Wang Y, et al. J Cosmet Dermatol. 2021 Jun 30. doi: 10.1111/jocd.14315. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/34192412/

Background: Rosacea is a chronic inflammatory disease mainly with skin or ocular manifestations. Topical calcineurin inhibitors, pimecrolimus and tacrolimus, can be used to treat rosacea. However, they can also induce rosacea-like eruptions. Aims: This study systematically reviewed the double-edged sword effect of pimecrolimus and tacrolimus in rosacea. Methods: Four databases were retrieved to search for articles on the effects of pimecrolimus and tacrolimus

on rosacea, including Cochrane Library, Embase, PubMed, and Web of Science. Only English articles were included in the systematic review. Relevant data were collected, and the levels of evidence were evaluated. Results: 28 articles published between 2001 and 2016 were included. 11 articles were about pimecrolimus as the treatment of rosacea, 4 articles were about the pimecrolimus-induced rosacea, 9 articles were about tacrolimus as the treatment of rosacea, and 4 articles were about tacrolimus-induced rosacea. Participants for each study ranged from 1 to 200. Several types of outcome measurements were used for these publications. Conclusions: Both pimecrolimus and tacrolimus might have double-edged sword effects on rosacea. Pimecrolimus and tacrolimus could be effective for rosacea. However, both of them could also induce rosacea. Larger, randomized, controlled studies on pimecrolimus and tacrolimus as the treatment of rosacea and studies on mechanisms of pimecrolimus and tacrolimus in treating or inducing rosacea are needed. This systematic review emphasized the double-edged sword role of topical calcineurin inhibitors in rosacea, which may pave the way for future research.

Anti-COVID-19 measurements for hidradenitis suppurativa patients. Giamarellos-Bourboulis EJ, Bettoli V, Jemec GBE, et al. Exp Dermatol. 2021 Jun;30 Suppl 1(Suppl 1):18-22. doi: 10.1111/exd.14339. https://pubmed.ncbi.nlm.nih.gov/34085330/

The reported incidence of COVID-19 among cohorts of patients with inflammatory bowel and skin diseases under treatment with biologicals is low. Treatment may further modify disease severity as some biological modifiers, such as anakinra, are also proposed for the management of COVID-19 patients potentially providing HS patients with an advantage. The above preliminary evidence suggests that hidradenitis suppurativa (HS) does probably not provide an increased susceptibility for COVID-19 and that any susceptibility is unlikely to be modified negatively by treatment with biologicals. On the occasion of its 10th International Conference, experts of the European Hidradenitis Suppurativa Foundation e.V. have prepared a consensus statement regarding anti-COVID-19 measurements for HS patients. Based on the available knowledge, patients with HS may be vaccinated against SARS-CoV2 and patients affected by metabolic syndrome constitute a high-risk group for COVID-19 and should be vaccinated at the earliest convenient point in time. HS patients on treatment with adalimumab can be vaccinated with non-living virus anti-SARS-CoV2 vaccines. A possible suboptimal effect of the vaccine may be suspected but might not be expected universally. The management of the biological treatment in HS patients is at the discretion of the dermatologist / responsible physician.

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Exploring patient journeys through acne healthcare: A patient perspective. de Vries F, Tjin E, Driessen R, et al. J Dermatolog Treat. 2021 Jun 30;1-8. doi: 10.1080/09546634.2021.1940808. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/34192987/

Background: Despite the large availability of caregivers, there are no standardized care pathways for patients with acne. This increases the risk of ineffective care and unnecessary medicalizing. To better understand how to provide effective, efficient, and patient-satisfying care, it is necessary to gain insights into the patient journey through acne healthcare services. Objective: To explore the patient journeys, assessed by a series of consecutive steps through acne healthcare. Methods: A cross-sectional survey was conducted among Dutch individuals with acne. Results: A total of 371 respondents completed the questionnaire. Data revealed 58 different pathways through acne healthcare services. Patient with severe acne had a stronger tendency to seek professional care than those with mild acne ($p < .05$). The highest proportion of clinically relevant improvement was found in patients treated by dermatologists, compared to respondents treated by beauticians, $p = .023$ and dermal therapists, $p = .018$. Conclusions: Mapping the patient journeys contributed to a better understanding of the gap between professional guidelines and the experiences of patients. Identifying these areas of care implies that there is potential to bring acne care services more in line with

the patients' needs. Further research is recommended; for example by comparing the clinical treatment outcomes of multiple sequences of caregivers.

A review of systemic minocycline side effects and topical minocycline as a safer alternative for treating acne and rosacea. Martins AM, Marto JM, Johnson JL, Graber EM. Antibiotics (Basel). 2021 Jun 22;10(7):757. doi: 10.3390/antibiotics10070757. https://pubmed.ncbi.nlm.nih.gov/34206485/

Resistance of Cutibacterium acnes to topical antibiotics historically used to treat acne (topical erythromycin and clindamycin and, more recently, topical azithromycin and clarithromycin) has been steadily increasing and new topical antibiotics are needed. Minocycline is a semisynthetic tetracycline-derived antibiotic currently used systemically to treat a wide range of infections caused by Gram-negative and Gram-positive bacteria. In addition to its antibiotic activity, minocycline possesses anti-inflammatory properties, such as the downregulation of proinflammatory cytokine production, suppression of neutrophil chemotaxis, activation of superoxide dismutase, and inhibition of phagocytosis, among others. These characteristics make minocycline a valuable agent for treatment of dermatological diseases such as acne vulgaris and papulopustular rosacea. However, more frequent or serious adverse effects have been observed upon the systemic administration of minocycline than with other tetracyclines. Examples of serious adverse effects include hypersensitivity syndrome reaction, drug-induced lupus, idiopathic intracranial hypertension, and other autoimmune syndromes that may cause death. Here, we review adverse effects and drug-drug interactions observed with oral administration of minocycline and contrast this with topical minocycline formulations recently approved or under development for effectively treating dermatological disorders with fewer adverse effects and less drug interaction.

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Endocrine disrupting chemicals, hormone receptors, and acne vulgaris: A connecting hypothesis. Rao A, Douglas SC, Hall JM. Cells. 2021 Jun 9;10(6):1439. doi: 10.3390/cells10061439. https://pubmed.ncbi.nlm.nih.gov/34207527/

The relationship between endocrine disrupting chemicals (EDCs) and the pathogenesis of acne vulgaris has yet to be explored in the literature. Acne vulgaris is a chronic inflammatory skin disease of the pilosebaceous unit. The pathogenesis of acne involves several hormonal pathways, including androgens, insulin-like growth factor 1(IGF-1), estrogens, and corticosteroids. EDCs influence these pathways primarily through two mechanisms: altering endogenous hormone levels and interfering with hormone receptor function. This review article describes the mechanistic links between EDCs and the development of acne lesions. Highlighted is the contributory role of androgen receptor ligands, such as bisphenol A (BPA) and mono-2-ethylhexyl Phthalate (MEHP), via upregulation of lipogenic genes and resultant exacerbation of cholesterol synthesis. Additionally discussed is the protective role of phytoestrogen EDCs in counteracting androgen-induced sebocyte maturation through attenuation of PPARy transcriptional activity (i.e., resveratrol) and restoration of estrogen-regulated TGF-B expression in skin cells (i.e., genistein). Examination of the relationship between EDCs and acne vulgaris may inform adjunctive avenues of treatment such as limiting environmental exposures, and increasing low-glycemic, plant-rich foods in the diet. With a better understanding of the cumulative role that EDCs play in acne, clinicians can be better equipped to treat and ultimately improve the lives of their patients.

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Quality of life in hidradenitis suppurativa: An update. Chernyshov PV, Finlay AY, Tomas-Aragones L, et al. Int J Environ Res Public Health. 2021 Jun 6;18(11):6131. doi: 10.3390/ijerph18116131. https://pubmed.ncbi.nlm.nih.gov/34204126/

Knowledge on hidradenitis suppurativa/acne inversa (HS) is rapidly increasing. HS has a profound impact on patients and their family life. Several factors, such as comorbidities, unemployment and HS severity, make this impact even more severe. The most widely used instrument to measure this impact is the dermatology-specific DLQI. We also identified six HS-specific health-related quality of life (HRQoL) instruments. Of them, HIDRAdisk, HSIA, HiSQOL and HSQoL-24 are better validated but there is still lack of experience of its use. Several treatment methods showed positive effect on patients' HRQoL. Surgery remains a method with a substantial positive effect on HRQoL. Several studies confirming a positive effect of adalimumab on the HRQoL of patients with HS were published during the last three years. Data on the influence of several other biologics on HRQoL of HS patients are controversial or based on studies with a small number of patients.

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Acne vulgaris and intake of selected dietary nutrients-a summary of information. Podgórska A, Puścion-Jakubik A, Markiewicz-Żukowska R, et al. Healthcare (Basel). 2021 Jun 3;9(6):668. doi: 10.3390/healthcare9060668. https://pubmed.ncbi.nlm.nih.gov/34205209/

Acne vulgaris (AV) is a chronic disease that affects a significant percentage of the world's population. Its development is influenced by both external and internal factors. The purpose of this review is to demonstrate the effect of basic nutrient intake on the exacerbation or alleviation of AV lesions. A retrospective review of publications in PubMed regarding diet therapy and the impact of individual nutrient intake on the skin condition of patients was conducted. Ingestion of products with a high glycaemic index may indirectly lead to sebum overproduction, which promotes infection with Cutibacterium acnes and causes inflammation. Consumption of certain dairy products may result in skin deterioration caused by the presence of hormones in these products, i.e., progesterone and testosterone precursors. The beneficial effect of fatty acids on the skin is manifested by the reduction in inflammation. Of significance in AV treatment are vitamins A, C, D, E and B, as well as mineral elements zinc and selenium. Proper nutrition may not only prevent or alleviate AV but also increase treatment efficacy.

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Hidradenitis suppurativa in East and Southeast Asian populations: A systematic review and meta-analysis. Gotesman RD, Choi C, Alavi A. Int J Dermatol. 2021 Jun 1. doi: 10.1111/ijd.15671. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/34075575/

Hidradenitis suppurativa (HS) is a chronic inflammatory skin condition that presents with recurrent inflammatory nodules and draining tunnels in the skin. Most HS studies have focused on Western populations, and the understanding of how HS characteristics differ in specific Asian ethnicities is poor. We conducted the first systematic review and meta-analysis to characterize HS patients from East and Southeast Asia. PubMed, Embase, and Ovid MEDLINE databases were searched from inception to June 12, 2020. English-language case-series, cross-sectional, observational, and randomized controlled trial studies investigating HS in East and Southeast Asian populations were screened by titles, abstracts, and articles in duplicate. Of 136 citations, 10 studies were included in the meta-analysis. Data on gender distribution, lesion distribution in the axilla and gluteal regions, and family history were extracted in duplicate. A random effects model was used for the meta-analysis. A total of 30,125 HS patients were included in the analysis. Most patients were male (66%, 95% CI = 60-72%). About half of Asian patients with HS develop lesions in the axilla (52%, 95% CI = 33-72%) and the buttocks (48%, 95% CI = 38-57%). Only a small subset had positive family history of HS (5%, 95% CI = 2-8%). We report an up-to-date characterization of HS in East and Southeast Asian

populations and highlight differences in their Western counterparts. These results will hopefully improve understanding for how HS may manifest, lead to more personalized treatments for Asian patients with HS, and usher in a proper patient-centered approach to treating the disease.

Long-term clinical outcomes in synovitis, acne, pustulosis, hyperostosis, and osteitis syndrome. Yap FHX, Olsson-White D, Roddy J, et al. Mayo Clin Proc Innov Qual Outcomes. 2021 May 10;5(3):574-582. doi: 10.1016/j.mayocpiqo.2021.02.009. eCollection 2021 Jun. https://pubmed.ncbi.nlm.nih.gov/34195549/

Objective: To assess the outcome of empirical therapeutic interventions for synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome. Methods: The clinical features and treatment outcomes of a cohort of 21 patients diagnosed with SAPHO in Western Australia were reviewed retrospectively. Results: All 21 patients met published diagnostic criteria; 20 (95%) were Caucasian, and the median age was 47 years. The median follow-up was 6 years (range, 2 to 32 years). Three patients (14%) received no treatment; 18 (86%) required conventional synthetic disease-modifying antirheumatic drug (DMARDs). Thirteen (62%) had an initial good response to methotrexate; 8 relapsed and progressed to biologic DMARDs (bDMARDs) during a period of 14 years. Of the 13 recipients on a tumor necrosis factor inhibitor, 11 (85%) continued treatment for a median of 4 years (range, 1 to 14 years), whereas none of 3 recipients of interleukin 17/23 continued treatment (median, 4 months). Higher Physician Global Assessment scores (better outcomes) were observed in bDMARD recipients (mean, 7.06±2.24 [SD]) compared with non-bDMARD recipients (mean, 5.63±2.50; P=.1672) after a median of 3 years of therapy. Conclusion: This study describes the broad range of clinical manifestations in SAPHO, variable courses over time, and inconsistent outcomes with diverse empirical therapies. Moderately good long-term treatment outcomes were observed in most recipients of tumor necrosis factor inhibitor. Poorer outcomes were observed with bisphosphonates and interleukin 17/23 axis inhibitors; however, low numbers preclude robust comparison. Suboptimal treatment may be associated with poorer clinical outcomes and greater skeletal damage.

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