AARS HOT TOPICS MEMBER NEWSLETTER

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American Acne and Rosacea Society
201 Claremont Avenue • Montclair, NJ 07042
(888) 744-DERM (3376) • info@aarsmember.org
www.acneandrosacea.org

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AARS Event

Save the Date: 14th Annual AARS Reception, Friday, March 1, 2019 6P – 9PM, Washington, DC

Join your AARS colleagues and President Julie Harper and President-Elect Mark Jackson for a wonderful evening! All members are welcome!

Industry News

Sarecycline approved for moderate-to-severe acne. Dermatology Times, Nov 13, 2018. Vol 39; Issue 11. http://www.dermatologytimes.com/article/sarecycline-approved-moderate-severe-acne

The Food and Drug Administration (FDA) approved sarecycline (Seysara, Almirall, S.A.) in October for the treatment of non-nodular moderate-to-severe acne vulgaris in patients 9 years of age and older, according to a company news release. Sarecycline is a first in class tetracycline-derived once-daily oral antibiotic. The approval was based on data from two 12-week multicenter, randomized, double-blind, placebo-controlled efficacy studies. Researchers enrolled 2,002 patients aged 9 years and older and the drug was found to significantly reduced inflammatory lesions as early as 3 weeks after treatment, the company says. Sarecycline was part of Allergan's Medical Dermatology portfolio. It was recently acquired by Almirall for the United States and is expected to be launched in January 2019.

HintMD launches medical-grade skincare subscriptions. DermWire, Practical Dermatology. November 13, 2018. http://practicaldermatology.com/dermwire/2018/11/13/hintmd-launches-medical-grade-skincare-subscriptions/?c=&t=

Medical-grade skincare subscriptions are now available through HintMD's platform. HintMD's patent-pending software allows physicians, such as plastic surgeons and dermatologists, to turn any treatment plan into a monthly subscription payment for their patients. Skincare subscriptions allow physicians to offer professional-grade products delivered directly to the patient's door, at no cost. Patients can control the delivery frequency using the app, to truly personalize their aesthetic journey. HintMD is launching skincare subscriptions with physician dispensed Alastin Skincare. HintMD practices will be able to offer Alastin's entire line of scientifically proven and clinically-tested skincare formulations, including their newest product, TransFORM Body Treatment with TriHex Technology. Additional medical-grade skincare brands will be available on the HintMD platform in the coming weeks. "The HintMD platform is perfectly aligned to Alastin's corporate goals of innovation and value creation for aesthetic physicians and their practices. As the fastest growing skincare company in the US aesthetics market, we look forward to continuing our growth with the HintMD team," says Jim Hartmen, Chief Commercial Officer, Alastin Skincare. Founded by industry veterans, Aubrey Rankin and Vojin Kos, HintMD is solving a number of problems faced by the aesthetics industry such as commoditization, patient compliance, and perceived barriers to entry by consumers. "HintMD makes it easier for patients to access the industry's best physicians, medical-grade products, and commit to their doctor prescribed skincare regimen," says Aubrey Rankin, CEO and Co-Founder, HintMD. "This creates better outcomes and more consistent results for patients." "I have over 400 patients using HintMD aesthetic subscriptions, and it has transformed my practice and the patient experience," says Dr. A. Jay Burns, MD, FACS. "The easy subscription payment allows more of my patients to stay on track with their treatment plan and go for the full correction they are seeking."

New Medical News

Potassium iodide for cutaneous inflammatory disorders: A monocentric, retrospective study. Anzengruber F, Mergenthaler C, Murer C, Dummer R. Dermatology. 2018 Nov 21:1-7. doi: 10.1159/000494614. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30463069

Objectives: Potassium iodide (KI) is a medication that has been used for decades in dermatology and it is mentioned as a treatment option in all major dermatology textbooks. Yet, there is little recent information on its efficacy. In our study, we wanted to retrospectively evaluate the therapy response to KI in our patients. Methods: The hospital information system was searched for patients treated with KI at the Department of Dermatology (University Hospital Zurich) in the last 20 years (January 1, 1998 to December 31, 2017). A total of 52 patients were found and, subsequently, 35 patients were included in our study. Results: KI was prescribed for the following skin conditions: erythema nodosum, disseminated granuloma anulare, necrobiosis lipoidica, nodular vasculitis, cutaneous sarcoidosis, and granulomatous perioral dermatitis/ rosacea. The median duration of KI intake was 5 ± 7.7 weeks (range 1-26). The global assessment of efficacy by the treating physician showed an improvement of disease in about a third of all patients. No response was seen in 14 patients and 9 even had a progression of disease. An adverse event was documented in 16 cases. Conclusions: Our findings show that an improvement was reached in only about a third of all cases. High response rates with only mild side effects (in 16 out of 35 patients) were observed.

Apremilast for moderate hidradenitis suppurativa: no significant change in lesional skin inflammatory biomarkers. Vossen ARJV, van der Zee HH, Davelaar N, et al. J Eur Acad Dermatol Venereol. 2018 Nov 19. doi: 10.1111/jdv.15354. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30451329

Background: Treatment with Apremilast has recently demonstrated clinically meaningful improvement in moderate hidradenitis suppurativa (HS). Objective: To evaluate the change in expression of inflammatory markers in lesional skin of HS patients receiving Apremilast 30 mg twice daily (n=15) for 16 weeks compared with placebo (n=5). Methods: At baseline 5-mm punch biopsies were obtained from an index lesion (HSL) and non-lesional (HSN) skin in the same anatomical area. Subsequent HSL samples were taken as close as possible to the previously biopsied site at week 4 and week 16. After sampling, biopsies were split; one half was processed for in vivo mRNA analysis using real-time quantitative PCR; the other half was cultured for ex vivo protein analysis using a proximity extension assay (Olink). Linear mixed effects models were calculated to compare the levels of inflammatory markers in HSL skin between Apremilast and placebo over time. Results: At baseline, 17 proteins with a fold change >2 in HSL versus HSN skin were identified in 20 patients. The top 5 were IL-17A (5), S100A12, CST5, IL-12/23p40, CD6 (1) with fold changes ranging from 6.6 to 1638, respectively (FDR<0.044). Linear mixed effects models for 75 assays were calculated. Protein levels of S100A12 decreased during treatment in the Apremilast group compared with the placebo group (p=0.014, FDR=0.186). None of the 14 genes exhibited significant changes in expression over time. However, an evident downward trend in relative mRNA expression of IL-17A and IL-17F was demonstrated in patients receiving Apremilast. Conclusion: We did not detect statistically significant changes in inflammatory markers in HSL skin of HS patients receiving Apremilast compared with placebo, despite clinical improvement in the Apremilast group. Nonetheless, S100A12 and IL-17A were significantly elevated in HSL skin and showed a decrease in response to Apremilast. The translational model in clinical trials involving HS clearly needs further improvement.

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Evaluation of medical and surgical treatments for hidradenitis suppurativa using real-life data from the Scandinavian registry (HISREG). Grimstad O, Tzellos T, Dufour DN, et al. J Eur Acad Dermatol Venereol. 2018 Nov 19. doi: 10.1111/jdv.15353. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30451320

Background: Hidradenitis suppurativa (HS) substantially affects health-related quality-of-life outcomes. Most treatment options are supported by low quality of evidence without validated outcomes. Objective: The aim of this study was to evaluate the efficacy of surgical and medical interventions using physician- and patient-reported outcomes registered in HISREG. Methods: Data were extracted for all adult patients registered in HISREG between January 2013 and April 2016. Primary endpoints included Dermatology Life Quality Index (DLQI) scores, pain as measured using a numeric rating scale (NRS), Sartorius score, and Hurley classification. Minimum clinically important differences (MCIDs) for DLQI and NRS pain were analyzed. Secondary endpoints included comparisons among different treatment groups, safety, and complications of various treatments. Results: Two hundred fifty-five patients were included in the study: 31, 188, and 36 patients had Hurley stages I, II, and III disease, respectively. Treatment with CO2 lasers was the most common treatment modality. One hundred forty-nine patients (58.4%) were treated with surgical intervention, 87 (34.1%) received antibiotics and/or anti-inflammatory treatments, and 19 (7.5%) were treated with both surgery and medical intervention. No patients received biologic treatment. In patients with surgical treatments, Sartorius scores were significantly improved compared with baseline (p=0.001), 83 patients (55%) achieved a DLQI MCID, and 75 patients (49.7%) achieved an NRS pain MCID. In patients with medical treatments, Sartorius scores were not significantly improved compared with baseline (p=0.582); 25 patients (28%) achieved a DLQI MCID and 28 patients (31%) achieved an NRS pain MCID. In patients treated with surgical and medical combination, 9 (48%) achieved DLQI and NRS pain MCIDs and Sartorius scores were significantly improved. Conclusions: CO2 laser treatment is more effective than the non-biologic medical treatments in this analysis based on physician- and patient-derived outcomes. The study provides limited evidence for the combination of medical and surgical therapies in patients with HS.

In vitro antioxidant and anti-propionibacterium acnes activities of cold water, hot water, and methanol extracts, and their respective ethyl acetate fractions, from sanguisorba officinalis l. roots. Kim S, Oh S, Noh HB, et al. Molecules. 2018 Nov 16;23(11). pii: E3001. doi: 10.3390/molecules23113001. https://www.ncbi.nlm.nih.gov/pubmed/30453560

Identification of medicinal plants and naturally derived compounds as new natural antioxidant and antibacterial sources for topical acne treatment has long been important. To determine anti-Propionibacterium acnes activity and in vitro antioxidant activities, Sanguisorba officinalis L. root (SOR) was extracted with cold water (CWE), hot water (HWE), and methanol (ME), and each extract was fractionated successively with hexane, ethyl acetate (EA), and butanol to determine whether the activities could be attributed to the total phenolic, flavonoid, terpenoid, and condensed tannin contents. Pearson's correlation coefficients were analyzed between the respective variables. The SOR CWE, HWE, ME, and their respective EA fractions showed anti-P. acnes activity based on the paper disc diffusion method on agar plates, minimum inhibitory concentration (MIC), and minimal bactericidal concentration (MBC). The MIC against P. acnes had a moderate (+) correlation with the total phenolic content, but not with the other measures. The 2,2-diphenyl-1-picrylhydrazyl (DPPH) scavenging capacity (SC) had a strong ($^-$) correlation with the total phenolic content and a moderate ($^-$) correlation with the total flavonoid content. The total antioxidant capacity had a strong (+) correlation with the condensed tannin content. Linoleic acid peroxidation inhibition had a strong ($^-$) correlation with the total phenolic content. To elucidate the major active phytochemicals in the CWE-EA, HWE-EA, and ME-EA fractions, high performance liquid chromatography-ultraviolet (HPLC-UV) and ultra high performance

liquid chromatography coupled with hybrid triple quadrupole time-of-flight mass spectrometry (UHPLC-QTOF-MS) were performed. The HPLC-UV analysis showed the presence of nine compounds in common (arjunic acid and/or euscaphic acid, gallic acid, kaempferol, caffeic acid, ferulic acid, tannic acid, and coumarin, quercetin). The UHPLC-QTOF-MS analysis showed the presence of nine compounds in common (gallic acid; caffeic acid; umbelliferone; arjunic acid, euscaphic acid, and/or tormentic acid; pomolic acid; rosamultic acid; and benzoic acid). When standards of the identified phytochemicals were tested against the same bacterium, quercetin, coumarin, and euscaphic acid showed antibacterial activity against P. acnes.

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Design, preparation and evaluation of liposomal gel formulations for treatment of acne: In vitro and in vivo studies. Madan S, Nehate C, Barman TK, et al. Drug Dev Ind Pharm. 2018 Nov 16:1-40. doi: 10.1080/03639045.2018.1546310. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30442066

The study highlights the significance of co-application of bioactive components into liposomal gel formulations and their comparison to azithromycin for treatment of Acne. A Design of Experiments (DoE) approach was utilized to obtain optimized liposomal formulation encapsulating curcumin, with size and zeta potential of ∼100 nm and ∼14 mV respectively, characterized by DLS, HR-TEM, FESEM and AFM. The curcumin liposomal dispersion depicted excellent stability over the period of 60 days, which was further converted in gel form using Carbopol. Pharmacokinetics of curcumin loaded liposomal gel showed that Tmax for curcumin was achieved within 1 h of post application in both stratum corneum and skin, indicating quick penetration of nano-sized liposomes. Stratum corneum depicted Cmax of 688.3 ng/mL and AUC0-t of 5857.5 h × ng/mL, while the skin samples displayed Cmax of 203.3 ng/gm and AUC0-t of 2938.1 h × ng/gm. Lauric acid and azithromycin liposomal gel formulations were prepared as per the optimum parameters obtained by DoE. In antibacterial activity using agar diffusion assay, lauric acid gel formulation revealed ∼1.5 fold improved antibacterial effect than curcumin gel formulation. Interestingly, their co-application (1:1) exhibited significantly enhanced antibacterial effect against both macrolide-sensitive (1.81 vs 1.25 folds) and resistant strains of P. acnes (2.93 vs 1.22 folds) than their individual counterparts. The in vivo studies in rat ear model displayed a ∼2-fold reduction in comedones count and cytokines (TNF-α and IL-1β) on co-application with curcumin and lauric acid liposomal gel compared to placebo treated group.

Topical tazarotene gel, 0.1%, as a novel treatment approach for atrophic postacne scars: A randomized active-controlled clinical trial. Afra TP, Razmi T M, Narang T, et al. JAMA Facial Plast Surg. 2018 Nov 15. doi: 10.1001/jamafacial.2018.1404. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30452511

Importance: Evidence is robust for the effectiveness of microneedle therapy in the management of postacne atrophic scarring. A home-based topical treatment with an efficacy comparable to microneedling would be a useful addition in the armamentarium of acne scar management. Objective: To compare the efficacy of topical tazarotene gel, 0.1%, with microneedling therapy in the management of moderate to severe atrophic acne scars. Design, setting, and participants: Prospective, observer-blinded, active-controlled, randomized clinical trial with 6 months of follow-up conducted between June 2, 2017, and February 28, 2018, at a tertiary care hospital in India. Thirty-six patients with grade 2 to 4 facial atrophic postacne scars and without a history of procedural treatment of acne scars within the previous year were recruited. Analyses were conducted using data from the evaluable population. Interventions: Both halves of each participant's face were randomized to receive either microneedling or topical tazarotene therapy. Microneedling was conducted on 1 side of the face with a dermaroller having a needle length of 1.5 mm for a total of

4 sessions during the course of 3 months. Participants were instructed to apply topical tazarotene gel, 0.1%, to the other side of the face once every night during this same period. Main outcomes and measures: Patients were followed up at 3 and 6 months by a blinded observer, and improvements in acne scar severity based on Goodman and Baron quantitative and qualitative scores and a subjective independent dermatologist score (range, 0-10, with higher scores indicating better improvement) were assessed. Patient satisfaction was assessed using a patient global assessment score (ranging from 0 for no response to 10 for maximum improvement) at these follow-up visits. Results: There were 36 participants (13 men and 23 women; mean [range] age, 23.4 [18-30] years), and the median (interquartile range [IQR]) duration of acne was 6 (4-8) years. For the 34 participants included in the complete data analyses, the median (IQR) quantitative score for acne scar severity at the 6-month follow-up visit following treatment with either tazarotene (from a baseline of 8.0 [6.0-9.8] to 5.0 [3.0-6.0]) or microneedling (from a baseline of 7.0 [6.0-10.8] to 4.5 [3.0-6.0]) indicated significant improvement ($P < .001$) that was comparable for both treatments (median [IQR] change in severity score from baseline, 2.5 [2.0-4.0] vs 3.0 [2.0-4.0]; $P = .42$). By contrast, median qualitative acne scar scores were the same for both treatment groups at baseline and did not significantly change following either treatment. Conclusions and relevance: The present clinical trial showed comparable outcomes of both treatments for the overall improvement of quantitative facial acne scar severity. Level of evidence: 1. Trial registration: ClinicalTrials.gov Identifier: NCT03170596.

Transconjugation of erm(X) conferring high-level resistance of clindamycin for cutibacterium acnes. Aoki S, Nakase K, Hayashi N, Noguchi N. J Med Microbiol. 2018 Nov 15. doi: 10.1099/jmm.0.000875. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30431414

Cutibacterium acnes (C. acnes) can become an exacerbating factor in acne vulgaris. Clindamycin has been most frequently used for the treatment of inflammatory acne vulgaris. We studied clindamycin susceptibility and resistance determinants of C. acnes isolated from acne patients in Japan. The isolation rate of clindamycin-resistant C. acnes had significantly increased from 20.3% in 2009-2010 to 44.1% in 2016-2017. Strains carrying erm(X), which confers high-level resistance to clindamycin, had significantly increased from 1.4 to 11.8%. Sequence analysis of the resistance determinant showed that erm(X) was coded on transposon Tn5432. A transconjugation experiment showed that erm(X) can be transferred between C. acnes strains with high frequency and the transconjugants harboured transposon Tn5432 encoding erm(X). Our data show the transconjugation of erm(X) in C. acnes and strongly suggest that the transmission of erm(X) between C. acnes contributes to the increase and spread of clindamycin-resistant C. acnes strains in acne patients.

Survey of acne-related post-inflammatory hyperpigmentation in the Middle East. Abanmi A, Al-Enezi M, Al Hammadi A, et al. J Dermatolog Treat. 2018 Nov 14:1-4. doi: 10.1080/09546634.2018.1542807. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30426810

Aim: Acne vulgaris is a common inflammatory skin disease in the Middle East, similar to other regions of the world. In the Middle East, there are a relatively large proportion of patients with darker pigmentation (Fitzgerald skin types III-VI) who are prone to developing post-inflammatory hyperpigmentation (PIH) as a sequela of acne. Data are sparse on the frequency and characteristics of PIH throughout the world. What information is available indicates that pigmentation problems can be very bothersome for patients and are often quite long-lasting. Thus, it is important for clinicians to be aware of the scope of the problem of acne-associated PIH as well as potential treatment options. Methods: Prospective non-interventional study of acne patients consulting dermatologists ($n = 262$) in the Middle East. Results: PIH was present in 87.2% of subjects. The majority of subjects (52.6%) reported that PIH had been

present for one year or longer. Of note, 69.0% of subjects reported excoriating their acne lesions, suggesting that this may be a key modifiable risk factor for clinicians to stress during patient education efforts. Conclusions: PIH was bothersome for patients, with half of subjects indicating that PIH was more bothersome than acne. In addition to our study results, we present here a brief overview of PIH and its treatment.

Alpha- and gamma-mangostins exhibit anti-acne activities via multiple mechanisms. Xu N, Deng W, He G, et al. Immunopharmacol Immunotoxicol. 2018 Nov 13:1-8. doi: 10.1080/08923973.2018.1519831. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30422030

Objective: Acne is a chronic skin disease that involves four key pathogenic factors: excess sebum production, ductal epidermal hyperproliferation, Propionibacterium acnes (P. acnes) colonization, and skin inflammation. Mangostins are well-known for their anti-bacterial and anti-inflammatory effects, suggesting that mangostins may have therapeutic potential for acne. The present study aimed to explore the anti-acne effects of mangostins from the perspective of multiple pathogenic mechanisms of acne. Methods: The effects of α- and γ-mangostins on the growth of P. acnes and lipase activity were analyzed. Their effects on P. acnes-induced keratinocyte proliferation were examined by CCK-8. The expression of inflammatory genes and activation of NF-κB and MAPK signaling pathways were detected by quantitative real-time PCR and western blotting, respectively. Results: Alpha- and γ-mangostins not only inhibited the growth of P. acnes, but also reduced the proliferation of keratinocytes induced by heat-killed P. acnes. Furthermore, α- and γ-mangostins were able to suppress P. acnes-induced expression of pro-inflammatory cytokines, including TNF-α, IL-1β, and IL-6 in keratinocytes by inhibiting the activation of NF-κB and MAPK signaling pathways. Discussion and conclusions: Mangostins appeared to possess multiple anti-acne activities, including the inhibition of P. acnes growth, regulation of keratinocytes proliferation, and attenuation of skin inflammatory reaction. Hence, mangostins might be developed into a potential therapeutic agent for the treatment of acne.

Development of rifampicin-indocyanine green-loaded perfluorocarbon nanodroplets for photo-chemo-probiotic antimicrobial therapy. Hsiao KH, Huang CM, Lee YH. Front Pharmacol. 2018 Nov 2; 9:1254. doi: 10.3389/fphar.2018.01254. eCollection 2018. https://www.ncbi.nlm.nih.gov/pubmed/30450048

Acne vulgaris, generally resulted from overgrowth of Propionibacterium acnes (P. acnes), is one of the most difficult-to-treat facial dermatoses and more than 90% of adolescents experienced the disease worldwide. Because the innate non-lymphoid immune system cannot effectively eliminate excessive P. acnes from the skin surface, so far, the therapy of acne vulgaris is still mainly dependent on antibiotic treatment. However, long-term or overdose of antibiotics may initiate microbial drug resistance and/or generate unexpected side effects that seriously hamper the use of antibiotics in the clinic. To overcome the aforementioned challenges, the novel rifampicin (RIF)-indocyanine green (ICG)-loaded perfluorocarbon (PFC) nanodroplets (RIPNDs) that may offer combined photo-, chemo-, and probiotic efficacies to P. acnes eradication were developed in this study. The RIPND was first characterized as a sphere-like nanoparticle with surface charge of -20.9 ± 2.40 mV and size of 240.7 ± 6.73 nm, in which the encapsulation efficiencies of RIF and ICG were 54.0 ± 10.5% and 95.0 ± 4.84%, respectively. In comparison to the freely dissolved ICG, the RIPNDs conferred an enhanced thermal stability to the entrapped ICG and were able to provide a comparable hyperthermia effect and markedly increased production of singlet oxygen under near infrared (NIR; 808 nm, 6 W/cm2) exposure. Furthermore, the RIPNDs were able to induce fermentation of S. epidermidis but not P. acnes, indicating that the RIPNDs may serve as a selective fermentation initiator for the target probiotics. Based on the microbial population index analyses, P. acnes with 1 × 106 cells/mL can be completely eradicated by 12-h co-culture with S. epidermidis fermentation products followed by treatment of RIPNDs (≥20-μM ICG/3.8-μM RIF) + NIR

for 5 min, whereby the resulted microbial mortality was even higher than that caused by using 16-fold enhanced amount of loaded RIF alone. Overall these efforts show that the RIPNDs were able to provide improved ICG stability, selective fermentability to S. epidermidis, and enhanced antimicrobial efficacy compared to equal dosage of free RIF and/or ICG, indicating that the developed nanodroplets are highly potential for use in the clinical anti-P. acne treatment with reduced chemotoxicity.

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Potential applications of topical oxygen therapy in dermatology. Bennardo L, Del Duca E, Dastoli S, et al. Dermatol Pract Concept. 2018 Oct 31;8(4):272-276. doi: 10.5826/dpc.0804a04. eCollection 2018 Oct. https://www.ncbi.nlm.nih.gov/pubmed/30479854

Background: Topical oxygen therapy is a cosmetic procedure that is becoming more and more popular in dermatology; however, only a few articles on this topic are present in the literature. In this work we report our group experience with oxygen therapy as an adjuvant treatment in various dermatological conditions. Methods: Four studies were conducted. In the first study we used vehiculated oxygen therapy for diseases that cause hair loss. In the second study oxygen was used in the treatment of mild acne. In the third study moderate acne was treated with topical oxygen. In the fourth study chronic dermatological conditions such as psoriasis and atopic dermatitis were treated with this procedure. Results: In studies 1 and 2 the outcomes in groups who used topical oxygen therapy as an adjuvant treatment were better than in the groups that did not use it. Studies 3 and 4 also showed very good results, but no control groups were present in the study. Conclusion: Topical oxygen therapy was useful in the treatment of hair loss conditions, mild and moderate acne, and in chronic cutaneous diseases, showing effectiveness as a support therapy in all of these conditions. Further and larger studies should be conducted to better evaluate its effectiveness in dermatological conditions.

Negative pressure wound therapy with instillation and dwell time in the surgical management of severe hidradenitis suppurativa. Ge S, Orbay H, Silverman RP, Rasko YM. Cureus. 2018 Sep 17;10(9):e3319. doi: 10.7759/cureus.3319. https://www.ncbi.nlm.nih.gov/pubmed/30473952

Background: Hidradenitis suppurativa (HS) is a physically debilitating disease that greatly impairs the quality of life of affected individuals. Advanced disease is often difficult to treat with topical and systemic therapies. Surgical resection of diseased skin has become paramount in HS management but proposes challenges of wound care and closure. Methods: Four patients with a total of 12 complex wounds were treated over a three-year period. All of the patients were males between the ages of 28 and 61 years. The lesions were located on the buttocks (n=5), chest (n=1), perianal (n=2), perineal (n=2), and axillary regions (n=2). A protocol of wide local excision, followed by negative pressure wound therapy with instillation and dwell time (NPWTi-d) to decrease bioburden and promote angiogenesis of the exposed base, and subsequent skin grafting was used. Patients remained hospitalized between procedures. Results: The original wound area ranged from 210-540 cm2. Skin grafts of comparable sizes were taken from donor sites. The average duration of NPWTi-d placement was 3.5 days and the average time from excision to wound coverage was 4.3 days. The percent of graft uptake ranged from 70%-90%. All patients were resolved of their local disease with no complications. Conclusions: Surgical management of HS can be complicated by difficult closures. This case series demonstrates that wide local excision followed by NPWTi-d and skin grafting is able to achieve local resolution of disease in HS patients who have failed multiple minimally invasive therapies.

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Clinical Reviews

Guselkumab in the treatment of severe hidradenitis suppurativa. Kovacs M, Podda M. J Eur Acad Dermatol Venereol. 2018 Nov 27. doi: 10.1111/jdv.15368. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30480844

Hidradenitis suppurativa (HS) is a chronic skin disease characterized by auto-inflammation resulting in abscesses, nodules, fistula and scaring in the affected areas. It is known as one of the most life restricting diseases in dermatology with highly negative effects regarding the DLQI. Despite the uprising therapeutic approaches available for HS, there is still a need for more effective medications to treat this auto-inflammational disease.

Rifampin alone may be enough. Is it time to abandon the classic oral clindamycin - rifampicin combination for hidradenitis suppurativa? Albrecht J, Barbaric J, Nast A. Br J Dermatol. 2018 Nov 15. doi: 10.1111/bjd.17422. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30430552

In this issue, a "Critically Appraised Topic" assesses the long-term safety of clindamycin and rifampicin in hidradenitis suppurativa (HS). It concludes that the long-term use of these drugs is generally safe. As described in the CAT, the treatment approach with rifampicin was adapted from a case of dissecting cellulitis successfully treated with rifampicin as a monotherapy. Based on hypothetical thinking, clindamycin was added to rifampicin to prevent the possible resistance development of Staphylococcus aureus, that was considered the pathophysiological essential bacteria of dissecting cellulitis.

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Long-term clinical safety of clindamycin and rifampicin combination for the treatment of hidradenitis suppurativa: strategy to reduce side effects, improving patients' compliance. Marasca C, Masarà A, Annunziata MC, et al. Br J Dermatol. 2018 Nov 15. doi: 10.1111/bjd.17423. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30430549

We read with great interest the article by Albrecht et al.1 regarding the long-term clinical safety of Clindamycin and Rifampicin combination for the treatment of Hidradenitis Suppurativa (HS). The authors discuss carefully whether Clindamycin and Rifampicin could be safely continued beyond a 10-week course, analyzing long term toxicity of these drugs.

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Complement, hidradenitis suppurativa and pathogen-driven positive selection. Frew JW. Br J Dermatol. 2018 Nov 15. doi: 10.1111/bjd.17426. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30430538

The precise pathogenesis of Hidradenitis Suppurativa (HS) remains unclear. Kanni et al provides novel data implicating C5a and the membrane attack complex in HS pathogenesis. This opens the possibility of therapeutic blockade of C5a for the treatment of HS, although the results do require replication in larger patient cohorts. The current HS pathogenic paradigm involves dysregulation of the Th17:T-reg axis with contribution from genetic polymorphisms, metabolic syndrome, the microbiome and smoking, so data implicating complement is somewhat unexpected, stimulating the need for reconsideration of the current pathogenic paradigm.

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Failure of tocilizumab in treating two patients with refractory SAPHO syndrome: a case report. Sun XC, Liu S, Li C, et al. J Int Med Res. 2018 Nov 14:300060518806105. doi: 10.1177/0300060518806105. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/30428761

Synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome is a rare autoinflammatory disease with no standard treatment. Interleukin (IL)-6 inhibitors represent a novel therapeutic option for rheumatoid arthritis and some autoinflammatory diseases. However, the clinical utility of IL-6 inhibitors in treating SAPHO syndrome has been poorly investigated. In the present report, we describe two patients with SAPHO syndrome that was unresponsive to conventional treatment. Tocilizumab, an anti-IL-6 receptor monoclonal antibody, was putatively administered according to positive IL-6 immunohistochemical staining in biopsied bone tissues. However, the disease continued to progress, and new-onset or worsening skin lesions were noted with transient neutropenia. These cases demonstrate that tocilizumab may not be an ideal option for treating SAPHO syndrome.

New concepts, concerns, and creations in acne. Marson JW, Baldwin HE. Dermatol Clin. 2019 Jan;37(1):1-9. doi: 10.1016/j.det.2018.07.002. Epub 2018 Nov 1. https://www.ncbi.nlm.nih.gov/pubmed/30466681

Laboratory monitoring for patients on isotretinoin should include creatinine kinase in athletic males and the more liver-specific gamma glutamyltransferase. There is mounting evidence that acne pathophysiology includes a barrier defect and subsequent microbiome disruption. Avoidance of acne scars with early and aggressive treatment is a more efficient and cost-effective option than subsequent treatment. Laser and light treatments for acne and acne scars are plentiful but poorly supported by evidence-based medicine. The acne pipeline is rich with new chemical entities, new formulations, and combinations of older agents. The gold standard for acne therapy may be changing its face.

Comorbidities in dermatology: What's real and what's not. Qureshi A, Friedman A. Dermatol Clin. 2019 Jan;37(1):65-71. doi: 10.1016/j.det.2018.07.007. Epub 2018 Nov 1. https://www.ncbi.nlm.nih.gov/pubmed/30466689

Comorbidities affecting dermatologic patients are of significant importance to providers and highly relevant for appropriate patient counseling, screening practices, prevention, and treatment. This article seeks to highlight several of the newest findings in the literature regarding comorbidities associated with dermatologic diseases including atopic dermatitis, hidradenitis suppurativa, alopecia areata, chronic urticaria, and the pemphigus family of immunobullous diseases. Further investigation is needed for associations between atopic dermatitis and pancreatic cancer and pemphigus family diseases and chronic obstructive pulmonary disease in order to better characterize the strength of these associations and clinical relevance.

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Botulinum toxin injections may improve scarring. Whitehead N. Dermatology Times, Nov 1, 2018. http://www.dermatologytimes.com/acne/botulinum-toxin-injections-may-improve-scarring

Long lauded for its ability to reduce the appearance of wrinkles, botulinum toxin is now being considered for reducing scarring. By using botulinum toxin to denervate underlying muscle and immobilize tension—which increases inflammation, fibrosis, erythema and scar size—scarring can potentially be reduced, say researchers writing in a review published in the Journal of Drugs in Dermatology. The review, published in the September issue of the journal, highlights several success stories of the toxin's use in improving scarring. Dr. Domenico Vitarella, Ph.D., author of the review and a researcher with Bonti, Inc., says that although the FDA has not approved botulinum toxin for this

specific use, “the treatment seems to be gaining momentum among physicians.” In 2006, researchers reported the first blinded, placebo-controlled, randomized study for scar reduction on 31 patients with forehead wounds. The patients either had traumatic forehead lacerations or were undergoing plastic surgery for the removal of a mass on the forehead. Patients received a botulinum toxin or placebo injection in the musculature adjacent to their lesions within 24 hours of surgery. Afterwards, those who received the botulinum toxin received a median Visual Analog Scar Score (VASS) of 8.9 while placebo recipients received a median score of 7.2. A separate study reported in 2013 described 24 patients with facial wounds who were randomized to receive no injection or the injection of botulinum toxin within 72 hours of surgery. At one-year follow-up, the group treated with botulinum received a media Vancover Scare Scale (VSS) score of 8.25, while the control group received median scores of 6.35. In his review, Dr. Vitarella writes that despite these successes, much remains to be explored. For one, larger clinical trials are still needed to gain FDA approval. “Physicians are experimenting and using this product off-label for scar reduction [right now,]” Dr. Vitarella says. “Bonti believes this is a great area of study and this can work and help [reduce scarring], but we are not able to advocate for physicians doing this until there’s official FDA approval.” Optimal dosing remains to be determined as well so as to not cause patients functional problems, particularly when botulinum is applied to the lower face. In one case, for example, a woman experienced reduced oral sphincter function resulting in spillage of liquids and mild dysarthria for four weeks after an injection to the lower lip. The 26-year-old had received surgical repair and botox to the perioral musculature when her lip was crushed in a motor vehicle accident. The patient was required to maintain a soft diet for 10 days after the procedure. She eventually returned to normal eating habits and at six months, a scar was hardly perceptible. Vitarella believes functional problems caused by the botulinum toxin’s immobilization of muscles may be avoided if the toxin can be reconfigured to have a shorter duration. His company is currently developing and testing the product EB-001 for optimized scar reduction.

A dermatological questionnaire for general practitioners with a focus on hidradenitis suppurativa. Marasca C, Annunziata MC, Cacciapuoti S, et al. Open Access Maced J Med Sci. 2018 Oct 3;6(10):1902-1905. doi: 10.3889/oamjms.2018.358. eCollection 2018 Oct 25. https://www.ncbi.nlm.nih.gov/pubmed/30455771

Background: Hidradenitis suppurativa (HS) is a skin chronic inflammatory disease typically located in several areas such as perianal, inguinal and axillary regions. In 40% to 70% of cases, general practitioners (GPs) are the first health care professionals consulted by patients suffering from HS. The role of GPs in HS management could be more substantial than it has been in the past. Aim: We developed a questionnaire to assess the knowledge of HS by GPs and to evaluate if in their perception the dermatologist is the reference medical doctor for pathology above. Methods: The data were processed by a univariate descriptive statistical analysis. Results: Our study showed GPs could recognize patients affected by HS. They have proven to know the main features of HS. Nevertheless, the second part of the questionnaire has highlighted the considerable confusion of GPs about who the reference figure is. Conclusion: The data registered regarding therapy and follow up too, only show a mild preponderance of dermatologist compared to other professional figures, such as a surgeon, GPs and plastic surgeon.

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Patient Counseling/Communication

Using Google to trend patient interest in botulinum toxin and hyaluronic acid fillers. Motosko CC, Zakhem GA, Roger S. Ho RS, et al. J Drugs Dermatol. 2018;17(11):1245-1246. http://jddonline.com

Introduction: Google Search is an important tool for patients researching skin care treatments and finding dermatologists. Data from individual patient's searches are aggregated by Google and yield powerful data sets that can be used to trend population behaviors. This study investigates the correlations between the volume of Google searches and the number of procedures performed annually for both botulinum toxin type A and hyaluronic acid tissue fillers. Methods: The volume of queries performed between 2005–2016 including [botox] or [hyaluronic acid + Juvederm + Perlane + Restylane + Prevelle] were analyzed in relation to the annual number of procedures using botulinum toxin type A and hyaluronic acid based soft tissue fillers, respectively. Results: The number of procedures performed using botulinum toxin and hyaluronic acid correlated significantly with the relative search volume for related search terms in both the same year (P less than .001) and year prior (P less than .001). Conclusions: Our findings highlight the importance of Google search data as a resource for understanding patient motivations and behavior. Dermatologists may use this resource as a tool to better address patient concerns and forecast local demand for specific procedures.

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