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AARS News

The AARS is proud to sponsor activities for National Acne Awareness Month in June! Please contact Stacey Moore at info@aarsmember.org or stacey@physicianresources.org if you represent a Corporate Benefactor interested in partnering with social media or educational activity during this month. Here are some example of our campaigns from last year. We continue to reinforce individualized treatment approaches for acne patients and to prescribe the brand with a complementary skincare regimen.

Industry News

FDA approves first topical minocycline for rosacea. Morgan Petronelli. May 29, 2020, Dermatology Times. https://www.dermatologytimes.com/rosacea/fda-approves-first-topical-minocycline-rosacea

Another topical rosacea treatment enters the market with the United States Food and Drug Administration (FDA) approval of FMX103 (ZILXI, Menlo Therapeutics), a 1.5% minocycline foam, equipped with the company's proprietary Molecule Stabilizing Technology (MST), for the treatment of inflammatory lesions of rosacea in adult patients. Oral minocycline has been on the market for numerous years for acne vulgaris but is now being developed into a topical formulation to treat both acne and rosacea. Previously, a 4% topical minocycline foam (Amzeeq) developed by Menlo's now wholly-owned subsidiary Foamix Pharmaceuticals Ltd. was approved by the FDA for treatment of inflammatory lesions of non-nodular moderate-to-severe acne vulgaris in pediatric patients and adults on Oct. 18, 2019. With this recent approval, FMX103 is now the first approved minocycline product to treat rosacea, according to a company press release. "This is the only product containing minocycline approved by the FDA for rosacea," says Iain Stuart, Ph.D., chief scientific officer of Menlo. "The availability of a novel topical formulation of this molecule underscores our efforts to provide innovative treatment options for patients who suffer from difficult to treat skin conditions." The approval follows results from two randomized, multicenter, vehicle-controlled, double-blind clinical trials that enrolled 1,522 patients 18 years and older. During the trials, patients with rosacea-related papules and pustules were given either FMX103 or vehicle daily for 12 weeks. FMX103 met all co-primary endpoints in both trials, which included an absolute mean change inflammatory lesions counts from baseline at week 12 and a proportion of patients who achieved an Investigators Global Assessment (IGA) score of clear (0) or almost clear (1) with a minimum of a two-grade decrease from baseline at week 12. FMX103 also demonstrated superiority over vehicle and statically significant decrease in inflammatory lesion count and IGA success. Additionally, erythema was investigated during the trials, with 40.9% and 48.3% of FMX103 patients being clear or almost clear of erythema at week 12. Tolerability of the drug was assessed with 95% of FMX103 subjects having skin tolerability scores of mild or none at application site at week 12. While no serious treatment-related adverse events were reported, the most prevalent adverse reactions during the trials included diarrhea, which was reported by ≥1% of FMX103 patients compared to vehicle, respectively. "This approval is welcome news for clinicians and patients who seek novel options for this difficult to treat skin disorder," says David Domzalski, CEO of Menlo. "ZILXI is a potential turning point in rosacea treatment,

providing millions of people with a new treatment option that is well-tolerated and effective." The company says they expect to have FMX103 available on the market by the 4th quarter of 2020.

New Medical Research

Contrasting the efficacy of pulsed dye laser and photodynamic methylene blue nanoemulgel therapy in treating acne vulgaris. Soliman M, Salah M, Fadel M, et al. Arch Dermatol Res. 2020 May 24. doi: 10.1007/s00403-020-02093-y. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32449013/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=1
The treatment of acne remains a challenge for dermatologists. A variety of conventional therapies are available for acne treatment such as topical and systemic medications. Although many of these traditional acne treatments are effective, the wide-spread nature of the disease and its sometimes resistant nature delineate the need for alternative therapies. Therefore, over the past decade, phototherapy has been introduced for the treatment of acne, such as pulsed dye lasers (PDLs) and photodynamic therapy (PDT). The aim of this study was to compare the safety and efficacy of PDL and methylene blue-mediated photodynamic therapy (MB-PDT) in the treatment of mild to moderate acne. Split-face clinical trial including fifteen patients presenting with mild to moderate acne were treated with 585 nm PDL on the right side of the face and MB-PDT with 665-nm diode laser on the left side. The photosensitizer MB was prepared in nanoemulgel formulation, and the treatment was carried out for three sessions maximum at 2-weeks intervals. Results revealed that both PDL and MB-PDT were effective therapies in the treatment of acne, as manifested by the reduction of inflammatory and non-inflammatory lesions throughout the treatment period. However, the latter therapy was proven more potent in the reduction of acne severity, and in terms of patients' tolerance. Therefore, it can be concluded that MB in the nanoemulgel form is a promising treatment approach for acne, and can be further experimented in the treatment of other dermatological diseases.

Efficacy and safety of Jessner's solution peel in comparison with salicylic acid 30% peel in the management of patients with acne vulgaris and postacne hyperpigmentation with skin of color: A randomized, double-blinded, split-face, controlled trial. How KN, Lim PY, Wan Ahmad Kammal WSL, Shamsudin N. Int J Dermatol. 2020 May 24. doi: 10.1111/ijd.14948. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32447767/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=3
Objective: Antibiotics and retinoids have been used for acne vulgaris for decades. Though effective, each has its own drawbacks. Chemical peels have been used for treatment of acne vulgaris with inadequate clinical evidence. We sought to determine the efficacy and safety of Jessner's solution (JS) in comparison with salicylic acid (SA) 30% in the management of acne vulgaris and postacne hyperpigmentation in patients with colored skin. Methods: A total of 36 subjects (94.5% Fitzpatick Type IV-V) were recruited in this randomized double-blinded, split-face, controlled trial. Each side of the face was randomly assigned for treatment with either JS or SA. Subjects were treated once fortnightly for a total of three sessions. Lesion counting, Michaelsson acne score (MAS), photographs, and postacne hyperpigmentation index (PAHPI) were used to objectively assess the improvement. Complications were assessed during each visit. Statistical analysis was conducted using SPSS v22.0. Significance was set at P = 0.05. Results: At the end of therapy, significant reduction in inflammatory, noninflammatory lesions, MAS, and PAHPI scores (P < 0.001, respectively) were noted in comparison to baseline. Mixed model analysis revealed no significant outcome difference between the two groups. Patients who reported good and very good outcome were 76.4% (JS) and 85.3% (SA). Burning, stinging sensation, and exfoliation were the common complications reported. Postinflammatory

hyperpigmentation was reported only once in the JS arm. Conclusion: Both JS and SA were equally effective in the treatment of acne vulgaris and reducing postacne hyperpigmentation in patients with colored skin.

650 Usec 1064nm Nd:YAG laser treatment of acne: A double-blind randomized control study. Kesty K, Goldberg DJ. J Cosmet Dermatol. 2020 May 24. doi: 10.1111/jocd.13480. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32447830/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=2
Background: A variety of energy-based devices have been used to treat acne. However, all studies have been subjective and have not involved double-blind and randomized controlled studies. Aims: We undertook a randomized controlled study evaluating the use of a 650 usec 1064 nm Nd:YAG laser compared with a sham in the treatment of acne. Patients/methods: A total of 20 subjects with moderate-to-severe acne were randomized to receive either 650 usec 1064nm Nd:YAG laser or sham treatment. All subjects received 3 treatments, two weeks apart, plus an additional session undertaken 4 weeks after the 3rd treatment. Subjects were evaluated for investigator global improvement, improvement in inflammatory lesions, improvement in comedonal lesions, total porphyrin score, and total sebum score. Results: The laser-treated group showed an Investigator's Global Assessment Scale (IGA) improvement of 26% compared with 7% for the sham group (a 271% improvement over sham treatment group). The treatment group also showed a decrease in the number of inflammatory lesions of 42% compared with 26% in the sham group (a 62% improvement over sham). The laser-treated cohort also experienced a reduction in total number of comedones similar to that seen with inflammatory lesions and a decrease in total porphyrin score. There was also an 18% reduction in sebum production in the treated group, compared with 9% in the sham group (a 100% improvement). Conclusion: This is the first study that has compared laser treatment of acne compared with a sham treatment. A 650 usec 1064nm Nd:YAG laser can effectively treat acne.

Role of ferritin in pathogenesis of rosacea and its value in efficacy of 595 Nm pulsed dye laser in treatment of different variants of rosacea: A clinical and immunohistochemical study. Elwan NM, Salah SM, Abdelsalam SF, Elfar NN. J Cosmet Laser Ther. 2020 May 22;1-7. doi: 10.1080/14764172.2020.1761549. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32441163/?from_term=rosacea+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=2
Background: Current rosacea treatment focused on symptom suppression to improve patient's quality of life, prevent progression, and sustain remission. The progress of laser therapy has brought about a paradigm shift in the world of treating erythema and telangiectasia. We appraised role of ferritin in pathogenesis of rosacea and consider its value in efficacy of 595 nm pulsed dye laser (PDL) in treatment of rosacea. Materials/methods: 20 patients had rosacea were treated with PDL; received 4 sessions, 4 weeks apart. They were assessed before and after treatment by rosacea grading scale and skin biopsies were taken to detect changes in ferritin expression before and after treatment. Results: Ferritin expression in lesional skin was positively expressed in all patients proportional to severity of rosacea that showed statistically significant reduction of ferritin expression after PDL. There was a statistically significant reduction in rosacea grading scale after PDL (p value = .005*); the highest efficacy was in phymatous then papulopustular and erythrotelangiectatic types. Conclusions: The reduction of ferritin expression after PDL opens a new era for antioxidant agents to be added as a relevant approach for the therapy of rosacea via attenuation of oxidative stress.

Effectiveness of benzyl benzoate treatment on clinical symptoms and demodex density over time in patients with rosacea and demodicosis: A real life retrospective follow-up study comparing low- and high-dose regimens. Forton FMN, De Maertelaer V. J Dermatolog Treat. 2020 May 19;1-28. doi: 10.1080/09546634.2020.1770168. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32427504/?from_term=rosacea+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=5

Background: Patients with rosacea and demodicosis have high facial skin Demodex densities (Dds), which decrease with benzyl benzoate (BB) treatment. Objectives: To evaluate the impact of topical BB (+crotamiton) treatment on Dds and clinical symptoms during prolonged follow-up and to compare low (12% once daily) and high (12% twice daily or 20-24% once daily) BB dose regimens. Methods: This retrospective study included 344 patients (103 rosacea, 241 demodicosis) observed for 7.1 ± 0.5 months. Dds were measured on two consecutive standardized skin surface biopsies and symptoms evaluated using investigator global assessment. Compliance was considered good if patients correctly followed treatment instructions. Results: At final follow-up, in the 248 patients with good compliance, Demodex density had normalized in 217 (88%) and symptoms cleared in 204 (82%). The high dose was associated with better compliance and faster results than the low-dose. The higher the initial Dd, the longer it took to normalize. In the 96 poorly compliant patients, treatment was less effective and slower. Conclusion: These findings indirectly support a key role of the mite in rosacea and suggest that topical treatment with BB (+crotamiton), especially the higher dose, may be a useful alternative treatment for rosacea as well as for demodicosis.

The investigation of the amounts and expressions of epidermal growth factor, epidermal growth factor receptor and epidermal growth factor receptor gene polymorphisms in acne vulgaris. Aydingoz IE , Demirci GT, Agirbasli D, et al. J Cosmet Dermatol. 2020 May 18. doi: 10.1111/jocd.13498. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32421896/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=7

Aim: Epidermal growth factor receptor inhibitors (EGFRI) used in cancer chemotherapy cause acneiform folliculitis in 70-100% of patients in a dose-dependent manner. Acneiform folliculitis is considered to be caused by an inflammatory process due to follicular hyperkeratosis and subsequently a set of changes both in epidermis and hair follicles as a result of epidermal growth factor receptor (EGFR) blockade. Both acne vulgaris and acneiform folliculitis due to EGFRIs show similar changes in the pilosebaceous unit. Furthermore, in both groups of patients, topical application of recombinant human epidermal growth factor (EGF) has been reported to improve the disease. In this study, it was aimed to investigate the role of EGF and EGFR amount, expression and EGFR gene polymorphisms in the etiopathogenesis of acne vulgaris. Method: 156 acne vulgaris patients, within 18-25 years of age, who had 15 or more inflammatory acne lesions on dermatologic evaluation were included in this study. The absence of any known systemic or genetic disease or cancer and any systemic or topical treatment for the last 1 month were prerequisites. In the control group, 154 volunteers in the same age range who were examined at the outpatient clinic with diagnoses of melanocytic nevus, ephelid, cherry angioma, callus and who had no more than 3 inflammatory acne lesions were recruited. The amounts of EGF and EGFR were determined by sandwich ELISA, expressions of EGF and EGFR by reverse transcriptase polymerase chain reaction; EGFR polymorphisms were examined by restriction enzyme digestion, Sanger and high resolution melting methods.

Characterization of acne patients carrying clindamycin-resistant cutibacterium acnes: A Japanese multicenter study. Nakase K, Aoki S, Sei S, et al. J Dermatol. 2020 May 18. doi: 10.1111/1346-8138.15397. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32424832/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=6
Use of antimicrobials for acne treatment is correlated with an increased occurrence of antimicrobial resistant Cutibacterium acnes. To clarify the role of antimicrobial use on the resistance and to investigate the characteristics of resistant strains, we conducted a multicenter study in dermatological clinics frequently visited by new patients with acne vulgaris. We collected specimens in 264 acne patients and tested 164 C. acnes strains isolated from 164 patients visiting 13 dermatological clinics. Antimicrobial susceptibility testing showed that the rates of resistance for tetracyclines, macrolides and clindamycin were significantly higher in C. acnes strains isolated from patients using antimicrobials for acne treatment than patients not using them. In particular, clindamycin-resistant strains were frequently isolated from patients with older median age (≥24 years) and severe/moderate acne. After investigating the resistance mechanism of 15 high-level clindamycin-resistant strains, the transposable clindamycin resistance genes, erm(X) or erm(50), were detected in 14 strains. Using single-locus sequence typing for C. acnes, the strains with erm(X) or multidrug resistance plasmid pTZC1 coding erm(50) and tetracycline resistance gene tet(W) were classified into clade F, which were specifically isolated from Japanese patients with acne, except for one strain. Our data showed that patients' information, such as antimicrobial use, age and acne severity, are valuable in estimating whether a patient carries antimicrobial-resistant C. acnes. Additionally, our results suggest that the clade F strains have a high risk of acquiring multidrug resistance. Results: The patient and control groups were compared in terms of EGFR gene polymorphisms in addition to the amount and expressions of EGF and EGFR. The amount of EGF in the serum was found to be significantly higher in the acne group. ($p = 0.0012$). There was no significant difference in other parameters studied. Conclusion: The results of our study showed a significant increase in the amount of EGF in the acne group. Though EGF may be incriminated in the etiopathogenesis of AV, the most likely explanation about its role may be controlling inflammation from the very first stage.

Efficacy of acne vulgaris treatment protocols according to its clinical forms. Jorgaqi E, Savo I, Koraqi A, et al. Dermatol Ther. 2020 May 17;e1361. doi: 10.1111/dth.13611. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32418353/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=12
Objectives: To compare results of different treatment regimens based on stratification of acne to prescribe the right treatment protocol according to clinical form and grade of acne. Methods: A transversal, cohort study conducted in 230 patients with Acne vulgaris. Patients were divided in three groups according to Acne severity and the results of each protocol determined in 0, 4, 6, 8, 12, 18 and 24 weeks. Statistical analysis was conducted using Wilcoxon and Mann-Whitney tests RESULTS: 230 patients (99 females and 131 males) took part in the study. In first grade acne (70 patients), the most effective drug for papulo-pustular lesions was Azelaic acid, where the average value of the reduction was 1.03% per week. For comedone reduction, the most effective drug resulted Retinol with 17.7% mean reduction per week. In second grade acne (66 patients), the most effective scheme was: doxycycline + topical Retinoid + Benzoyl Peroxide. In the third grade (92 patients), the most effective drug was oral Isotretinoin. Conclusions: Accurate stratification, based on clinical characteristics is required for better outcome. Treatment success is related to the respective individually tailored treatment schemes in patients with acne.
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The efficacy and safety of fractional radiofrequency nanoneedle system in the treatment of atrophic acne scars in Asians. Nitayavardhana S, Wanitphakdeedecha R, Ng JNC, et al. J Cosmet Dermatol. 2020 May 16. doi: 10.1111/jocd.13484. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32416635/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=13

Background: Multiple treatment modalities have been developed to treat atrophic acne scars with varying degrees of success. Post-inflammatory hyperpigmentation (PIH) after acne scar treatments remain a major concern in Asian patients. Fractional radiofrequency (FRF) has been used in many dermatological skin conditions including acne scars. Objective: To determine the efficacy and safety of FRF nanoneedle system in the treatment of acne scars in Asians. Methods: This is a prospective, evaluator-blinded study with 25 subjects diagnosed with moderate to severe acne scarring. All subjects received 3 monthly treatments of the FRF nanoneedle system on both cheeks. Primary outcome was the clinical improvement of acne scars graded by 2 blinded dermatologists at baseline, 1-, 3- and 6-month follow-up. Objective scar volume analysis was done using ultraviolet A (UVA) light video camera. Subjects' self-assessment, pain score and adverse events were also recorded. Results: Twenty-three out of 25 subjects completed the study and attended all follow-up. Clinical improvement of acne scars was observed as early as 1-month follow-up. Objective evaluation of acne scar volume decreased significantly on all follow-up compared to baseline ($p<0.005$). Majority of the subjects (48%) reported marked improvement in their acne scars. Adverse events such as pain, erythema, burning sensation, edema, scab formation and PIH were mild and temporary. Conclusions: FRF nanoneedle system is a safe and effective treatment for acne scars in Asians. However, despite the significant changes in the scar volume, caution should be used to avoid excessive coagulation resulting in PIH.

Tissue expression of IL-17A and FOXP3 in acne vulgaris patients. Antar Farag AG, Maraee AH, Al-Sharaky DR, et al. J Cosmet Dermatol. 2020 May 15. doi: 10.1111/jocd.13485. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32413182/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=16

Background/objectives: CD4+ T helper (Th) cells through its pro-inflammatory cell type, interleukin-17 (IL-17)-generating cells and its anti-inflammatory category forkhead box P3-positive (FOXP3+) regulatory T (Treg) cells, play a vital role in the immune balance in inflammatory disorders. Therefore, assessment of both IL-17 and FOXP3 in acne vulgaris (AV), a chronic inflammatory disease of the pilosebaceous unit, could be of value in understanding AV pathogenesis. This study aimed to investigate the immunohistochemical expression of IL-17A and FOXP3 in acne vulgaris lesions versus normal skin. Methods: 45 AV patients and 25 controls were included in this case-control study. Biopsies from participants were analyzed for IL-17A and FOXP3 immunohistochemical profiles using IL-17A and FOXP3 polyclonal antibodies. Results: Compared to controls, AV patients exhibited a significant increase of IL-17A percent of expression in epidermis ($p=<0.001$), in lymphocytes in papillary dermis ($p=<0.001$) and in perifollicular lymphocytic inflammatory infiltrate in AV lesions. Also, there was a significant elevation in FOXP3 percent of expression in epidermis ($p=0.049$) and in lymphocytes in papillary dermis ($p=<0.027$) in acne patients than control. A significant positive correlation between IL-17A expression in papillary lymphocytes and in epidermal keratinocyte was observed ($r=0.537$, $p=0.001$). In acne vulgaris patients the associations between IL-17A and FOXP3 expressions could not reach level of significance. Conclusions: There was an up-regulation of IL-17A and FOXP3 in acne vulgaris development, but with independent roles. Moreover, targeting of IL-17A and FOXP3 may open the door for development of new therapeutic agents in acne vulgaris treatment.

The effect of subcutaneous Brodalumab upon clinical disease activity in hidradenitis suppurativa: An open label cohort study. Frew JW, Navrazhina K, Grand D, et al. J Am Acad Dermatol. 2020 May 13;S0190-9622(20)30834-3. doi: 10.1016/j.jaad.2020.05.007. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32416208/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=14
Background: Hidradenitis Suppurativa is an autoinflammatory disorder of keratinization, with dysregulation of Th17 cytokines. Brodalumab is a monoclonal antibody which targets the IL-17RA receptor. Objectives: To assess safety and tolerability and clinical response at Week 12 & 24 of Brodalumab in moderate-to-severe HS. 10 participants with no history of inflammatory bowel disease were administered Brodalumab 210mg/1.5mL subcutaneously at Weeks 0, 1 and 2 and every 2 weeks thereafter until Week 24. Participants were assessed for adverse events (grade 2/3 adverse events) and clinical response (HiSCR, Sartorius, IHS4) including ultrasound and skin biopsies. Results: All 10 Participants completed the study. No grade 2/3 adverse events associated with the use of Brodalumab were reported. 100% patients achieved HiSCR and 80% achieved IHS4 category change at Week 12. HiSCR achievement occurred as early as Week 2, likely due to the unique blockade of IL-17A, IL-17C and IL-17F by Brodalumab. Significant improvements were seen in pain, itch, quality of life and depression. Conclusions: Brodalumab was well tolerated in this HS cohort with no serious adverse events and rapid improvement in clinical outcomes. Alterations in dose frequency may be required in those with advanced disease which requires further exploration.
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The efficacy and safety of a 577-nm high-power optically pumped semiconductor laser in the treatment of postacne erythema. Wanitphakdeedecha R, Cembrano KAG, Ungaksornpairote C, et al. J Cosmet Dermatol. 2020 May 8. doi: 10.1111/jocd.13474. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32384205/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_page=2&from_pos=13
Background: Postacne erythema (PAE) is a common sequela of inflammatory acne vulgaris. Treatment of which has been challenging due to limited options available and the variability of results for each modality. Recently, a 577-nm high-power optically pumped semiconductor laser (HOPSL) initially developed for vascular lesions, has shown promising results for the treatment of PAE. Objective: To evaluate the efficacy and safety of 577-nm HOPSL in the treatment of postacne erythema. Materials and methods: This was a split-face, randomized controlled trial pilot study. Twenty-one patients with PAE on both sides of their face were enrolled. Each subject's face sides were randomly assigned to either receive 577-nm HOPSL treatment (QuadroStar PROTM , Asclepion Laser Technologies, Jena, Germany) using the scanner handpiece, 1mm spot size, 80% coverage, 12-15 J/cm2 , 30 ms, 2 passes for 3 sessions at 1-month intervals, or no treatment at all. Outcome measures such as overall improvement, the Erythema Index (EI) and Melanin Index (MI) from 3 different areas on both treatment and control sides were assessed at baseline, and 1-month follow-up after each treatment session. Side effects including pain, erythema, swelling, and crusting were also recorded. Results: Upon completion of the treatment period, the mean EI was significantly decreased in both treated and non-treated sides of the face ($p<0.001$ and $p=0.001$, respectively). The laser-treated sides already demonstrated significant reduction in the mean EI compared to non-treated sides at 1 month after the 2nd treatment ($p=0.007$). The mean MI of both sides; however, did not show any statistically significant differences from baseline, and likewise when comparing between sides. Patients reported more improvement on laser-treated sides compared to non-treated sides. Reported side effects were limited to mild discomfort during treatment and transient facial erythema lasting approximately 30 minutes. Conclusion: Patients who received treatment with the 577-nm HOPSL had better outcomes with minimal side effects at 1 month after 2 treatments as compared to those who did not receive any treatment. Therefore, the 577-nm HOPSL may be considered as an effective adjuvant treatment for PAE and early erythematous atrophic scars.

Clinical Reviews

Modulation of skin androgenesis and sebum production by dermocosmetic formulation. Crocco EI, Bonifácio EB, Facchini G, et al. J Cosmet Dermatol. 2020 May 20. doi: 10.1111/jocd.13503. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32433801/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=4
Background: Excessive androgenesis in the skin promotes sebaceous hyperproduction which is the onset of acne vulgaris pathogenesis. Free fatty acids and lipids accumulation in the glandular infundibulum culminates in microbiota imbalance, triggering inflammatory response and follicular hyperkeratinization. Aims: The purpose of this work was to present an alternative cosmetic treatment for acne skin care, focusing on the prevention of sebaceous gland dysregulation. Methods: Insulin-stimulated human sebocytes were treated with non-cytotoxic concentrations of a DTRW cosmetic formulation. After 6 days of incubation, cell lysates were collected for testosterone, 5α-reductase and dyhidrotestosterone (DHT) quantitation. In parallel, cells were stained with Oil Red O to measure sebum production. Results: Human sebocytes were incubated with insulin to mimic a seborrheic microenvironment with overproduction of intracellular lipids and fatty acids. Concomitant incubation of cell cultures with DRTW was able to promote a 52.97% reduction in intracellular lipid content. The anti-androgenic properties of DRTW had been proved by the reductions of testosterone (↓59.90%), 5α reductase (↓59.34%) and DHT (↓55.98%) levels in sebocyte cultures also stimulated with insulin. Conclusion: The results indicate a promising action of DRTW cosmetic formulation in preventing the development of acne lesions by mechanisms involving the modulation of cutaneous androgenesis and consequently the control of sebum overproduction, considered one of the leading cause of acne.

Non-prescription acne vulgaris treatments: Their role in our treatment armementarium: An international panel discussion. Dréno B, Araviiskaia E, Kerob D, et al. J Cosmet Dermatol. 2020 May 19. doi: 10.1111/jocd.13497. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32426933/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=5
Background: Acne vulgaris (Acne), a common inflammatory skin disorder, has its peak incidence between 14 - 19 years of age, with girls, frequently developing acne earlier than boys. Over recent years persistent acne is becoming more prevalent in adult women. Objectives: This review and panel discussion addresses challenges in acne management, particularly in adult women. The role which non-prescription acne treatment can play is explored when used as monotherapy or as an adjunctive treatment for acne of all severity. Methods: The best available evidence on non-prescription acne treatment was coupled with the opinion of an international expert panel of dermatologists to adopt statements and recommendations discussed in this review. Results: All severity of acne has a significant burden on patients. Addressing environmental factors that are important for the individual with acne may help to educate, prevent, effectively manage, and maintain acne, per the panel. They agreed that the adult female acne population has unique needs because of their aging skin and social environment. Non-prescription acne treatment products may help to balance the efficacy and tolerability of prescription acne treatment. Currently, there are no specific guidelines for how to use non-prescription acne treatment products in these patients. Conclusion: The panel agreed that guidelines including non-prescription acne treatment either as monotherapy for mild acne or in combination with prescription treatments for more severe acne would address a significant unmet need.

Truncal acne, what do we know? Poli F, Auffret N, Leccia MT, et al. J Eur Acad Dermatol Venereol. 2020 May 18. doi: 10.1111/jdv.16634. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32421879/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=8
Truncal acne is frequently overlooked in dermatological practice, even though it may result in scars and impact on self-esteem and body image. Therefore, it is important to identify the disease early in order to initiate treatment in time and, thus, to prevent it from worsening and resulting in physical and psychological sequelae. The aim of this review is to provide an overview of what is currently known about truncal acne, its prevalence, aetiology and physiopathology, how its severity is currently evaluated, how to differentiate it from other skin afflictions and current treatment options. A review of literature considering the issue of truncal acne published up to 2019 and available from PubMed was conducted and, in total, 76 articles were selected from PubMed. Currently, only little information about truncal acne is available. Considered as having the same pathophysiology as facial acne, the clinical picture and treatment response seem to differ. Specific acne severity grading systems and quality of life questionnaires as well as a specific treatment algorithm are still lacking. Filling this gap should allow clinicians to assess truncal acne in the best possible way, choosing suitable treatment options, helping patients to improve treatment adherence and quality of life and finally allowing a better management of truncal acne. In conclusion, more knowledge is required to treat more efficiently truncal acne.

Acne treatments: Future trajectories. C Dessinioti, B Dreno. Clin Exp Dermatol. 2020 May 15. doi: 10.1111/ced.14239. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32412672/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=1 7
Current acne treatments present several limitations, posing the need for new effective therapies for long-term administration for recalcitrant or relapsing acne. Key players in acne that may emerge as targets for future acne treatments include the cutaneous loss of diversity of Cutibacterium (formerly Propionibacterium) acnes phylotypes and the insulin-like growth factor-1 signalling pathway. New data about the loss of diversity of microbiota in acne provides the rationale for the potential use of oral or topical probiotics. Another therapeutic approach to modulate the microbiota could be topical formulation of C. acnes bacteriophages to target specifically the pathogenic 'acnegenic' C. acnes phylotypes. Insulin-sensitizing agents such as metformin, myo-inositol and d-chiro-inositol represent promising agents, but to date there have been only limited studies and much heterogeneity in the methods of assessing acne efficacy outcomes. Moving towards a holistic approach for patients with acne is the future, by taking into account both internal and external factors, such as pollution, stress, acne family history, age, smoking habits and diet, and addressing quality of life and the psychological impact of acne.

Current treatment for polycystic ovary syndrome: Focus on adolescence. Street ME, Cirillo F, Catellani C, Dauriz M, et al. Minerva Pediatr. 2020 May 15. doi: 10.23736/S0026-4946.20.05861-2. Online ahead of print.
https://pubmed.ncbi.nlm.nih.gov/32418411/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_pos=11
Polycystic ovary syndrome (PCOS) is the most frequent endocrine disorder in women and it is associated with an increased rate of infertility. Its etiology remains largely unknown, although both genetic and environmental factors play a role. PCOS is characterized by insulin resistance, metabolic disorders and low-grade chronic inflammation. To date, the treatment of PCOS is mainly symptomatic and aimed at reducing clinical signs of hyperandrogenism (hirsutism and acne), at improving menstrual cyclicity and at favouring ovulation. Since PCOS pathophysiology is still largely unknown, the therapeutic interventions currently in place are rarely cause-specific. In such cases, the therapy

is mainly directed at improving hormonal and metabolic dysregulations typical of this condition. Diet and exercise represent the main environmental factors influencing PCOS. Thus, therapeutic lifestyle changes represent the first-line of intervention, which, in combination with oral contraceptives, represent the customary treatment. Insulin resistance is becoming an increasingly studied target for therapy, most evidence stemming from the time-honoured metformin use. Relatively novel strategies also include the use of thiazolidinediones and GLP1-receptor agonists. In recent years, a nutraceutical approach has been added to the therapeutic toolkit targeting insulin resistance. Indeed, emerging data support inositol and alpha-lipoic acid as alternative compounds, alone or in combination with the aforementioned strategies, with favourable effects on ovulation, insulin resistance and inflammation. Nevertheless, additional studies are required in adolescents, in order to assess the effectiveness of diet supplements in preventing negative impacts of PCOS on fertility in adult age. This review focuses on the main therapeutic options for PCOS to date.

Medical and surgical management of hidradenitis suppurativa: A review of international treatment guidelines and implementation in general dermatology practice. Orenstein LAV, Nguyen TV, Damiani G, et al. Dermatology. 2020 May 14;1-20. doi: 10.1159/000507323. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/32408306/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_page=2&from_pos=1

Background: Hidradenitis suppurativa (HS) is a chronic painful skin disease that severely impairs patients' quality of life. While high-quality trials of HS therapies remain limited, medical knowledge of best treatment practices is rapidly evolving, leading to the recent publication of multiple international treatment guidelines for HS. Summary: This review compares international HS treatment guidelines, describes evidence for effectiveness of common and emerging HS therapies, and provides guidance for integrating evidence-based HS care into practice. Although over 50 medical and procedural treatments are mentioned across international HS guidelines, only adalimumab and infliximab have grade B/weak recommendation or higher across all major guidelines. This review describes the appropriate patient selection and effectiveness of the most commonly used medical and procedural treatments for HS. It also includes recommendations for counseling, dosing, and duration of medical therapies as well as procedure videos for the practicing dermatologist.

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An overview of treatment options for mild-to-moderate acne based on American Academy of Dermatology, European Academy of Dermatology and Venereology, and Italian Society of Dermatology and Venereology guidelines. Conforti C, Chello C, Giuffrida R, et al. Dermatol Ther. 2020 May 8;e13548. doi: 10.1111/dth.13548. Online ahead of print.

https://pubmed.ncbi.nlm.nih.gov/32385933/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_page=2&from_pos=10

Acne is a common inflammatory skin disorder affecting the pilosebaceous unit. Patients with mild-to-moderate acne can be treated with a combination of topical, systemic, and physical therapeutic approaches, with different results depending on patient, disease, and treatment characteristics. Herein we describe and discuss the common and alternative treatment options used for mild-to-moderate acne, by comparing three widely distributed guidelines (American Academy of Dermatology, European Academy of Dermatology and Venereology, and Italian Society of Dermatology and Venereology.

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Anti-acne vulgaris effects of pedunculagin from the leaves of quercus mongolica by anti-inflammatory activity and 5α-reductase inhibition. Kim M, Yin J, Hwang IH, et al. Molecules. 2020 May 5;25(9):E2154. doi: 10.3390/molecules25092154.
https://pubmed.ncbi.nlm.nih.gov/32380665/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_page=2&from_pos=14
Quercus mongolica (QM)-a member of the Fagaceae family-has been used as traditional medicine in Korea, China and Mongolia as a treatment for inflammation of oral, genital or anal mucosa and for external inflammation of skin. To treat acne vulgaris (AV), we evaluated the inhibition of inflammatory cytokines (IL-6 and IL-8) of QM leaf extract (QML) and its main compound, pedunculagin (PD) in vitro and 5α-reductase inhibitory activity by western blotting. As results, QML and PD showed potent NO production inhibitory activity compared with the positive control (PC), NG-monomethyl-L-arginine (L-NMMA). QML and PD was also showed the decreases of IL-6 and IL-8 compared with the PC, EGCG and exhibited potent 5α-reductase type 1 inhibitory activities compared with the PC, dutasteride.
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pH-dependent antibacterial activity of glycolic acid: Implications for anti-acne formulations. Valle-González ER, Jackman JA, Yoon BK, et al. Sci Rep. 2020 May 4;10(1):7491. doi: 10.1038/s41598-020-64545-9.
https://pubmed.ncbi.nlm.nih.gov/32367064/?from_term=acne+AND+treatment&from_filter=years.2020-2020&from_sort=date&from_size=20&from_page=2&from_pos=20
Glycolic acid is the smallest alpha hydroxy acid and widely used for skincare applications, including to treat acne vulgaris. Oftentimes, high concentrations of glycolic acid (~20-50 vol%) are incorporated into chemical peels to reduce acne-related inflammation while there is an outstanding need to determine to what extent glycolic acid can potently inhibit Cutibacterium acnes (formerly known as Propionibacterium acnes), which is a Gram-positive bacterium implicated in acne pathogenesis. Herein, we report that glycolic acid exhibits pH-dependent antibacterial activity against C. acnes and mechanistic studies identified that the nonionic form of glycolic acid is more active than the anionic form. The degree of antibacterial activity, including minimum bactericidal concentration (MBC), of glycolic acid was evaluated in the pH range of 3 to 4.5, and the greatest potency was observed at pH 3. In light of skincare formulation needs, we selected the pH 3.5 condition for further testing and determined that glycolic acid kills C. acnes cells by disrupting bacterial cell membranes. While most conventional treatments involve high concentrations of glycolic acid (>20%), our findings support the potential of developing anti-acne formulations with glycolic acid concentrations as low as 0.2% and with pH conditions that are suitable for over-the-counter applications.
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