



## AARS **HOT TOPICS** MEMBER NEWSLETTER

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## Industry News

**Glycemic index associated with acne occurrence.** Healio Dermatology. July 30, 2019. Stein Gold, L. <https://www.healio.com/dermatology/acne/news/online/%7Ba0e6f1a5-ff33-4310-ac7a-900fe5f4f477%7D/glycemic-index-associated-with-acne-occurrence>

Insulin-like growth factor type 1 could be responsible for perpetuating acne, according to Linda F. Stein Gold, MD, FAAD, during a presentation at the American Academy of Dermatology Summer Meeting. "In the 1940s and '50s it was stressed that diet had a big impact on influencing acne, but then there were small studies done which changed our entire mindset based on not-so-good data to say that the diet and acne link was a myth," Stein Gold said. "But now we are coming back around, and the data says there might be something here." Stein Gold, director of dermatology research at Henry Ford Hospital, was part of the research team in the acne treatment guidelines group that published the 2016 Guidelines of Care for the Management of Acne Vulgaris in Journal of the American Academy of Dermatology. She helped analyze literature to determine if diet influences acne and wanted to put the debate to rest. "We scoured the literature for a year, looking at all of the data, and tried to come through with some final thought," she said. "Given the current data, there are no specific dietary restrictions that can be made for the management of acne, but we have data that says that high glycemic index diets may be associated with acne, and some data says dairy and skim milk may impact acne," she said. In two studies looking at non-Westernized civilizations that consume no dairy, no caffeine, no alcohol and a small amount of sweets, a very low glycemic index diet was seen. "We don't see any acne in either population," she said. "However, other factors may have influenced why they don't have acne." "Why is it that glycemic index would have any influence over our acne? Why does that make any sense?" she asked. When someone eats high glycemic index foods, glucose goes up and insulin-like growth factor type 1 (IGF-1) goes up. IGF-1 increases androgens and sebum production, Stein Gold said.

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**BioPharmX announces positive topline results from phase 2b trial of BPX-04 for papulopustular rosacea.** BioPharmX. Jun 25, 2019. <https://biopharmx.investorroom.com/2019-06-25-BioPharmX-Announces-Positive-Topline-Results-from-Phase-2b-Trial-of-BPX-04-for-Papulopustular-Rosacea>

BPX-04 met both primary and secondary endpoints with statistical significance; BPX-04 was well-tolerated; efficacy and safety profile support advancement into phase 3. BioPharmX Corporation (NYSE American: BPMX), a specialty pharmaceutical company focused on developing innovative medical dermatology products, today announced positive results from its Phase 2b clinical trial of BPX-041, a novel topical gel formulation of fully solubilized minocycline for the treatment of moderate-to-severe papulopustular rosacea. BPX-04, a 1% minocycline gel, successfully met both the primary and secondary endpoints of the trial in demonstrating a statistically significant mean change in the number of facial inflammatory lesions and a two-grade improvement to clear or almost clear on the Investigator's Global Assessment (IGA) scale from baseline to week 12. "We are extremely pleased with the positive outcome on both the primary and secondary efficacy measures as well as the confirmation of the safety and cutaneous tolerability of our minocycline gel formulation. We view these results as further affirmation of the benefits of BioPharmX's proprietary HyantX delivery system," said Dr. David S. Tierney, BioPharmX CEO. "Based on the efficacy and safety profile, we believe BPX-04 has the potential to be the best-in-class treatment for papulopustular rosacea." Dr. Mark Amster, a board-certified dermatologist and investigator in the clinical trial, commented on the data and his experience as an investigator, "My patients were extremely pleased with their participation in this clinical trial. While the topline results highlight the impressive efficacy of BPX-04, the most compelling takeaway from my experience was my patient's

satisfaction with BioPharmX's elegant gel formulation and the lack of irritation that is so commonly experienced with many topical agents. I look forward to the advancement of this promising topical therapy."

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## New Medical Research

**A new superficial needle-scraping method for assessing Demodex density in papulopustular rosacea.** Huang HP, Hsu CK, Lee JY. *J Cosmet Dermatol.* 2019 Jul 25. doi: 10.1111/jocd.13082. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31343825>

Background: Standardized skin surface biopsy (SSSB) is often performed to determine the density of Demodex mites in facial papulopustular eruptions. Aim: We aimed to test the applicability of a new, "superficial needle-scraping" (SNS) method for assessing Demodex density in papulopustular rosacea (PPR). Patients and methods: Using SNS method, we measured the Demodex density in patients with PPR, also enrolling the patients with acne vulgaris as controls. SNS was performed by gently scraping off 5 small pustules with the convex surface of the tip of an 18# needle for examination. For comparison, SSSB was also performed in patients with PPR. Demodex density was expressed as "mites per 5 pustules" for SNS and as "mites per cm<sup>2</sup>" for SSSB. Results: A total of 40 patients with PPR and 35 patients with acne vulgaris were recruited. There were no statistically significant differences in age or sex between the PPR and acne groups. The Demodex density was  $5.6 \pm 4.2$  in the PPR group versus  $0.3 \pm 1.0$  in the acne group ( $P < .001$ ). The cutoff of " $\geq 3$  Demodex mites per 5 pustules" gave a sensitivity of 78% and a specificity of 97%, and the area under the receiver operating characteristic curve was 0.89. Moreover, SNS and SSSB gave mutually concordant results (positive or negative) in half of the patients. Conclusion: Our study suggests that SNS is a simple and convenient method for assessing Demodex density of pustules in PPR and can be a useful alternative or addition to SSSB for evaluation of Demodex-associated facial papulopustular eruptions.

**First use of optical coherence tomography on in vivo inflammatory acne-like lesions: a murine model.** Hermsmeier M, Sawant T, Chowdhury K, et al. *Lasers Surg Med.* 2019 Jul 25. doi: 10.1002/lsm.23140. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31347184>

Background and objectives: Successful outcomes of clinical studies for acne vulgaris depend greatly on achieving statistically significant reduction in acne lesion count and improvement in Investigator's Global Assessment score of the investigational drug product against its vehicle control. To date, there has not been a validated preclinical acne model to evaluate investigational drug products in order to improve the probability of clinical success. An inflammatory acne-like lesion mouse model developed in-house has previously been used for clinical guidance in our drug development program. In this study, we aim to implement and assess the adequacy of swept-source optical coherence tomography (SS-OCT) in quantifying the dynamic changes in inflammatory acne-like lesions. Study design/materials and methods: Live *Propionibacterium acnes* bacteria were injected intradermally resulting in inflammatory acne-like lesions. Topical 1% and 2% minocycline gels were applied to the lesions in separate groups once daily for 2 weeks and compared with vehicle and untreated control groups. The growth of these lesions was monitored and measured with a ruler (height)/microcaliper (width)-an approach previously developed, and with SS-OCT. The reliability of the two methods were assessed. Acquired OCT images across the apex of these inflammatory lesions were statistically analyzed for lesion volume reduction from baseline as well as between the treatment groups and the control groups. Results: The OCT technique allowed for reliable lesion volume analysis with varying conic profiles. After 14 days of

topical minocycline treatments (1%, 2% minocycline), statistically significant reduction in lesion volume ( $P \leq 0.05$ ) based on OCT image analysis was observed compared with untreated and vehicle control groups as well as compared with baseline measurements. Under the right conditions, some morphological aspects of the *P. acnes* injection site were discernible within the skin in images captured with OCT. Conclusions: We demonstrated the first use of SS-OCT in evaluating in vivo inflammatory acne-like lesions in a murine model. Our findings support the use of OCT in assessing lesion size and evolution of *P. acnes* injection sites non-invasively in preclinical in vivo studies, which could potentially lead to more consistent and predictable outcomes in clinical development.

**Chronic non-bacterial osteomyelitis: a comparative study between children and adults.** Skrabl-Baumgartner A, Singer P, Greimel T, et al. *Pediatr Rheumatol Online J.* 2019 Jul 23;17(1):49. doi: 10.1186/s12969-019-0353-2. <https://www.ncbi.nlm.nih.gov/pubmed/31337412>

Background: To compare clinical presentation, diagnostic and treatment strategies, and outcome between pediatric and adult patients with chronic non-bacterial osteomyelitis (CNO). Methods: Retrospective single-center comparative study of pediatric and adult patients diagnosed with chronic recurrent multifocal osteomyelitis (CRMO)/CNO or synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome treated at the Medical University of Graz. Results: 24 pediatric patients diagnosed with CRMO/CNO and 10 adult patients diagnosed with SAPHO syndrome were compared. Median age at diagnosis was 12.3 years (range 7.9-18.9) in the pediatric group and 32.5 years (range 22-56) in the adult group. Median time to diagnosis was shorter in children than in adults (0.3 vs. 1.0 years). Initial clinical presentation, laboratory and histopathological findings were similar in children and adults. Mean numbers of bone lesions were comparable between pediatric and adult patients (3.1 vs. 3.0), as were rates of skin involvement (33% vs. 30%). Sternal involvement was more frequent in adults whereas involvement of clavicle and long bones was more frequent in children (41.7% vs. 10, 33% vs. 10%). Computerized tomography (CT) was used more often in adults, whereas whole-body magnetic resonance imaging (MRI) was used only in children. Bisphosphonates were applied more often in children and outcome was better in children than in adults (62.5% vs. 30%). Conclusion: Results of our study suggest that CNO/CRMO and SAPHO syndrome in children and adults might represent a single clinical syndrome that needs a similar diagnostic and therapeutic approach.

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**Long-term safety and efficacy of trifarotene 50µg/g cream, a first-in-class RAR-γ selective topical retinoid, in patients with moderate facial and truncal acne.** Blume-Peytavi U, Fowler J, Kemény L, et al. *J Eur Acad Dermatol Venereol.* 2019 Jul 15. doi: 10.1111/jdv.15794. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31306527>

Background: Treatment for both facial and truncal acne has not sufficiently been studied. Objectives: To evaluate the long-term safety and efficacy of trifarotene in both facial and truncal acne. Methods: In a multicentre, open-label, 52-week study, patients with moderate facial and truncal acne, received trifarotene 50 µg/g cream (trifarotene). Assessments included local tolerability, safety, investigator and physician's global assessments (IGA, PGA) and quality of life (QOL). A validated QOL questionnaire was completed by the patient at Baseline, Week 12, 26, and 52/ET. Results: Of 453 patients enrolled 342(75.5%) completed the study. Trifarotene-related treatment emergent adverse events (TEAEs) were reported in 12.6% of patients, none was serious. Most related TEAEs were cutaneous and occurred during the first 3 months. Signs and symptoms of local tolerability were mostly mild or moderate and severe signs and symptoms were reported for 2.2% to 7.1% of patients for the face and 2.5% to 5.4% for the trunk. Local irritation increased during the first week of treatment on the face and up to week 2 to 4 on the trunk with both decreasing thereafter. At week 12, IGA and PGA success rates were 26.6% and 38.6%, respectively. Success rates

increased to 65.1% and 66.9%, respectively at week 52. Overall success (both IGA and PGA success in the same patient) was 57.9% at Week 52. At Week 52 visit, 92/171 (53.8%) patients who had completed their assessments had scores from 0 to 1 (i.e., no effect of acne on their QOL) vs. 47/208 (22.6%) patients at Baseline visit. Conclusion: In this 52-week study, trifarotene was safe, well tolerated and effective in moderate facial and truncal acne.

**Twenty-four-week interim analysis from a phase 3 open-label trial of adalimumab in Japanese patients with moderate to severe hidradenitis suppurativa.** Morita A, Takahashi H, Ozawa K, et al. *J Dermatol.* 2019 Jul 8. doi: 10.1111/1346-8138.14997. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31282051>

Hidradenitis suppurativa (HS) is a chronic skin disease characterized by recurrent painful inflamed nodules/abscesses and draining fistulas that negatively impact quality of life. Adalimumab, a monoclonal antibody against tumor necrosis factor- $\alpha$ , has been approved in the EU, USA and Japan for the treatment of moderate to severe HS. This is an interim analysis of an ongoing phase 3, multicenter, open-label, single-arm study of the safety and efficacy of adalimumab weekly dosing in Japanese patients with moderate to severe HS. Fifteen patients received adalimumab 160 mg at week 0, 80 mg at week 2 and 40 mg every week thereafter starting at week 4. The fulfillment of Hidradenitis Suppurativa Clinical Response was assessed under adalimumab treatment; clinical response was assessed by skin pain, total abscess and inflammatory nodule count and modified Sartorius score; and quality of life and safety were assessed. At week 12, 86.7% of patients achieved clinical response, with improvements at week 12 across the primary and secondary end points generally sustained through week 24. Adalimumab weekly dosing was generally safe and well tolerated with no new safety findings through week 24. These results suggest that adalimumab is effective and well tolerated in Japanese patients with moderate to severe HS.

**Assessment of autonomic nervous system functions and cardiac rhythms in patients using isotretinoin.** Ay H, Aksoy M, Güngören F. *Postepy Dermatol Alergol.* 2019 Jun;36(3):291-294. doi: 10.5114/ada.2018.76848. Epub 2018 Jun 29. <https://www.ncbi.nlm.nih.gov/pubmed/31333346>

Aim: The aim of the study was to analyze the potential effects of isotretinoin, frequently used in the treatment of acne vulgaris these days. Material and methods: For this purpose, we used the methods of sympathetic skin response (SSR) electrophysiological analysis and electrocardiographic (ECG) analysis in patients using isotretinoin. Thirty patients who were diagnosed with acne vulgaris and treated with oral isotretinoin with a dose of 0.5 mg/kg for at least 1 month were included in the study. In all patients, ECG scanning and SSR analysis were performed both before treatment and 1 month after the start of treatment. Conclusions: This study is very important because SSR results show that increasing the existing sympathetic activity in acne vulgaris after isotretinoin usage could explain the exacerbation in acne lesions for the first month, and according to the ECG results the medication did not cause cardiac side effects.

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**High body mass index is a risk factor for acne severity in adolescents: a preliminary report.** Sas K, Reich A. *Acta Dermatovenerol Croat.* 2019 Jun;27(2):81-85. <https://www.ncbi.nlm.nih.gov/pubmed/31351501>

Acne vulgaris is one of the most common chronic dermatological diseases among adolescents. Recent data indicated that a specific diet may affect the course and appearance of acne. The aim of the study was to analyze the relationship between body mass index (BMI) and acne prevalence and severity. This cross-sectional study was conducted among

143 consecutively recruited adolescents aged between 12 and 18. All participants were physically examined, including measurement of weight and height and type and severity of acne. Acne lesions were evaluated as not present (0), mild (1), moderate (2), and severe (3). The predominant type of acne lesions was used to classify the acne into one of the following subtypes: comedonic acne, papulo-pustular acne, and nodulo-cystic acne. Acne was present in 123 adolescents (86.0%) being more prevalent in teenagers  $\geq 15$  years old than in those between 12 and 14 years old (97.1% vs. 76.0%, respectively,  $P < 0.001$ ). The prevalence of acne did not differ significantly between teenagers with different BMI. However, those teenagers who were overweight or obese suffer from the inflammatory type of acne (papulo-pustular or nodulo-cystic) more often compared with underweight, slim, or normal-weight teenagers ( $P = 0.03$ ). The mean BMI value in patients with comedonic acne was significantly lower (mean BMI  $\pm$  Standard Deviation (SD):  $20.0 \pm 3.5$  kg/m<sup>2</sup>) when compared with papulo-pustular acne ( $22.2 \pm 3.8$  kg/m<sup>2</sup>,  $P = 0.04$ ) or nodulo-cystic acne ( $23.9 \pm 5.1$  kg/m<sup>2</sup>,  $P < 0.01$ ). The BMI value correlated significantly with the severity of acne ( $\rho = 0.33$ ,  $P < 0.001$ ) and with higher number of skin areas involved with acne ( $\rho = 0.23$ ,  $P < 0.01$ ). Our findings clearly indicate the association between overweight/obesity and acne. Such a relationship has a significant impact on the treatment of patients with acne, as therapy should focus not only on proper selection of medications but also take into account modification of the patient's dietary habits, physical activity, and, if necessary, reduction of body weight.

## Clinical Reviews

**The use of noncultured regenerative epithelial suspension for improving skin color and scars: a report of 8 cases and review of the literature.** Ren J, Liu J, Yu N, et al. J Cosmet Dermatol. 2019 Jul 26. doi: 10.1111/jocd.13071. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31347758>

Background: Regenerative Epithelial Suspension can lead to the restoration of wound and repigmentation, which can be gained by ReCell medical device to treat scar and depigmentation diseases. Objectives: To report the effectivity of ReCell combined with microdermabrasion in scar and depigmentation diseases and review the literature of this new technology. Methods: We gave a differential donor/recipient ratio of about 1:20-30 with vitiligo, 1:40 with postburn reconstruction, 1:80 with acne scar, and 1:120 with adult congenital melanocytic nevus, 1:80 with pediatrics, respectively. Photographs of patients before treatment and 3 months following the last treatment session were used to evaluate the effectivity. Results: A total of 8 patients including vitiligo vulgaris, postburn reconstruction, acne scars, and congenital melanocytic nevi treated by ReCell technology combined with microdermabrasion showed significant improvement in skin texture and color. And 17 studies of the research on ReCell technology were totally included in the systematic review. Conclusion: Our investigation showed that Regenerative Epithelial Suspension gained by ReCell technology combined with microdermabrasion may improve scar and depigmentation diseases.

**The role of the skin microbiota in acne pathophysiology.** Ramasamy S, Barnard E, Dawson TL Jr, Li H. Br J Dermatol. 2019 Jul 24. doi: 10.1111/bjd.18230. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31342510>

Background: The role of skin microbiota in acne remains to be fully elucidated. Initial culture-based investigations were hampered by growth rate and selective media bias. Even with less biased genomic methods, sampling, lysis and methodology, the task of describing acne pathophysiology remains challenging. Acne occurs in sites dominated by *Cutibacterium acnes* (formerly *Propionibacterium acnes*) and *Malassezia* species, both of which can function either as commensal or pathogen. Objectives: This article aims to review the current state of the art of the microbiome and

acne. **Methods:** The literature regarding the microbiome and acne was reviewed. **Results:** It remains unclear whether there is a quantitative difference in microbial community distribution, making it challenging to understand any community shift from commensal to pathogenic nature. It is plausible that acne involves (i) change in the distribution of species/strains, (ii) stable distribution with pathogenic alteration in response to internal (intermicrobe) or external stimuli (host physiology or environmental) or (iii) a combination of these factors. **Conclusions:** Understanding physiological changes in bacterial species and strains will be required to define their specific roles, and identify any potential intervention points, in acne pathogenesis and treatment. It will also be necessary to determine whether any fungal species are involved and establish whether they play a significant role. Further investigation using robust, modern analytic tools in longitudinal studies with a large number of participants, may make it possible to determine whether the microbiota plays a causal role, is primarily involved in exacerbation, or is merely a bystander. It is likely that the final outcome will show that acne is the result of complex microbe-microbe and community-host interplay.

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**Microneedling as a treatment for acne scarring: a systematic review.** Mujahid N, Shareef F, Maymone MBC, Vashi NA. *Dermatol Surg.* 2019 Jul 23. doi: 10.1097/DSS.0000000000002020. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31356435>

**Background:** Microneedling is a popular, minimally invasive skin rejuvenation modality for acne scarring. Recent reports have evaluated the efficacy and safety of microneedling monotherapy and combination treatment for scarring. **Objective:** This review aims to systematically analyze the current literature on microneedling techniques used for acne scarring. **Methods:** A PubMed search (2009-current) was used to identify literature on microneedling treatment for acne. All randomized and nonrandomized clinical trials, case cohorts, case reports, and case series were included with the exception of 2 studies, which were excluded due to unavailability. **Results:** All 33 articles evaluated showed improvement of acne scar appearance after microneedling treatment. Evidence was inconsistent when comparing microneedling monotherapy to dual therapy or to fractional laser treatment. **Conclusion:** Microneedling improves acne scarring, and further studies are needed to compare microneedling with other minimally invasive treatments.

**The treatment of acne scars, a 30-year journey.** Taub AF. *Am J Clin Dermatol.* 2019 Jul 20. doi: 10.1007/s40257-019-00451-9. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31327129>

Over the past 30 years, the treatment of acne scars has undergone changes that have been significantly influenced by the concurrent development of new devices. The advent of fractional resurfacing lasers was a watershed moment for acne scarring therapy. The author recounts a career history of considerations of acne scarring treatments as well as the literature supporting the experiences causing changes in practice. Fractional ablative and nonablative lasers, subablative radiofrequency, picosecond lasers, microneedling with and without radiofrequency and fillers are the bulk of the treatments covered, along with a discussion of combination therapy. A practical algorithm for acne scarring for selection of treatment modalities is presented.

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**SAPHO: has the time come for tailored therapy?** Figueiredo ASB, Oliveira AL, Caetano A, Moraes-Fontes MF. Clin Rheumatol. 2019 Jul 16. doi: 10.1007/s10067-019-04675-2. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/31312988>

SAPHO (synovitis, acne, pustulosis, hyperostosis and osteitis) syndrome is a heterogeneous condition combining osteoarticular and cutaneous manifestations. Conventional treatments are mostly ineffective. We hereby report two patients, the first with an aggressive form of disease and the second with an incomplete response to two different anti-TNF- $\alpha$  agents. Both were successfully treated with tocilizumab and ustekinumab, respectively, over a long period of time. A narrative review of a biological therapy in SAPHO syndrome yielded very little information on the specific use of these agents. We highlight the advantages of personalising therapy and describe emerging promising treatments for this disease.

**Patient-focused solutions in rosacea management: treatment challenges in special patient groups.** Cices A, Alexis AF. J Drugs Dermatol. 2019 Jul 1;18(7):608-612. <https://www.ncbi.nlm.nih.gov/pubmed/31329380>

Rosacea is among the most common facial skin conditions diagnosed by dermatologists. Typical clinical features include erythema, flushing, telangiectasia, papules, and pustules distributed on the central face. While the prevalence of rosacea is highest among white populations of Northern European descent, recent reports have found that rosacea frequently occurs in people from a broad range of racial/ethnic backgrounds and skin types. When rosacea presents in darker skin types, the diagnosis is often more challenging due to masking of features by increased epidermal melanin. As such, under-diagnosis and underreporting may contribute to misconceptions about the prevalence of rosacea in populations with skin of color. Recognizing the unique presentations and complications associated with darker skin types is necessary to reduce the disparities in rosacea treatment, especially as the American population continues to become increasingly heterogeneous. Although rosacea is most common in middle-aged females, patients of other demographics may have more negative impacts on quality of life due to their disease. In this article, we review rosacea management with a focus on special patient groups: people with skin of color, and less common forms of rosacea, in order to diminish the physical and psychosocial burden of rosacea in all patient groups. Due to the variability inherent to rosacea, we advocate for an individualized, patient-centered approach to disease management.

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**What is PFE? It may just be time you found out.** Del Rosso JQ. J Drugs Dermatol. 2019 Jun 1;18(6):503. <https://www.ncbi.nlm.nih.gov/pubmed/31251541>

With all the literature and research we have on acne and rosacea, there are still many unanswered questions. Over time, as we uncover more information on both preexisting and newly recognized pathophysiologic pathways, modes of drug action, alternative therapies, caveats related to basic skin care, and the potential roles for physical modalities, we often find that specific information that we thought was fact, is later altered, expanded, or corrected. What is interesting, and sometimes perplexing to me personally, is how difficult it is for the clinical dermatology community at large to incorporate well-published concepts into everyday clinical practice.

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**Treatment consideration for US military members with skin disease.** Burke KR, Larrimore DC, Cho S. *Cutis*. 2019 Jun;103(6):329-332. <https://www.ncbi.nlm.nih.gov/pubmed/31348457>

Recent changes to military medicine precipitated by the National Defense Authorization Act for Fiscal Year 2017 are expected to result in civilian specialists playing a larger role in the care of our military population. Medical readiness and deployment eligibility should be taken into consideration when establishing a treatment plan for service members. This article highlights unique factors civilian dermatologists must consider when treating active-duty military patients with acne, atopic dermatitis (AD), psoriasis, dissecting cellulitis of the scalp (DCS), and lupus erythematosus (LE).

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**Coprescription of isotretinoin and systemic corticosteroids for acne: an analysis of the National Ambulatory Medical Care Survey.** Vasicek B, Adams W, Steadman L, et al. *J Clin Aesthet Dermatol*. 2019 Jun;12(6):27-28. Epub 2019 Jun 1. <https://www.ncbi.nlm.nih.gov/pubmed/31360285>

Introduction: Isotretinoin treatment has been linked to flares of severe acne, which can be managed by the coadministration of systemic corticosteroids or prevented by beginning with a low dose of isotretinoin. To our knowledge, there are no estimates in the literature on the frequency of coprescription of isotretinoin and systemic corticosteroids. Objectives: We sought to quantify the estimated frequency of coprescription of isotretinoin and systemic corticosteroids and assess trends of the use of isotretinoin with systemic corticosteroids for acne as they relate to age, sex, race, insurance, and provider specialty. Methods: Data from the National Ambulatory Medical Care Survey (NAMCS) from 2003 to 2015, National Hospital Ambulatory Medical Care Survey Hospital Outpatient Departments (NHAMCS-OPD) from 2003 to 2011, and National Hospital Ambulatory Medical Care Survey Hospital Emergency Departments (NHAMCS-ED) from 2003 to 2014 were aggregated for this analysis. The number of prescriptions for isotretinoin and/or systemic corticosteroids was estimated by specialty (for NAMCS) and by survey type (for NHAMCS-OPD and NHAMCS-ED). Results: Among all first visits to a physician for acne (n=18,914,096), approximately 3.9 percent prescribed isotretinoin, 0.24 percent prescribed corticosteroids, and the remaining 96 percent prescribed neither drug. This was comparable to estimates for first visits to a dermatologist for acne (n=13,920,913), where approximately 4.2 percent prescribed isotretinoin, 0.32 percent prescribed corticosteroids, and the remaining 95 percent prescribed neither medication. Conclusion: Currently, isotretinoin and systemic corticosteroids are rarely prescribed together.

**Efficacy of azithromycin in treatment of acne vulgaris: a mini review.** Kardeh S, Saki N, Jowkar F, et al. *World J Plast Surg*. 2019 May;8(2):127-134. doi: 10.29252/wjps.8.2.127. <https://www.ncbi.nlm.nih.gov/pubmed/31309049>

Background: Antibiotics are commonly used in the treatment of acne vulgaris. Considering the rise of antibiotic resistance, alternative medications may be used in the main anti-acne armamentarium. The aim of this study was to investigate the efficacy of oral azithromycin in the treatment of acne vulgaris. Methods: Database searches were performed in PubMed and Scopus using the keywords "azithromycin" and "acne". Results: Azithromycin 500 mg once daily for 3 days per week or in cycles of 10 days for 12 weeks are the most commonly used regimens. Conclusion: Available experimental data suggest that oral azithromycin is an effective and well-tolerated option for treatment of acne vulgaris.

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**Surgery combined with photodynamic therapy in the treatment of disfiguring acne inversa: the efficacy of reconditioning.** Bu W, Huang L, Chen X, Fang F. *Postepy Dermatol Alergol.* 2019 Apr;36(2):237-238. doi: 10.5114/ada.2019.84600. Epub 2019 May 14. <https://www.ncbi.nlm.nih.gov/pubmed/31320862>

A 16-year-old male suffering from repetitive papules, pustules, nodules and abscesses of the scalp, face, and neck for one year was admitted to our hospital. The lesions had gradually diffused and thickened on the scalp and face to produce the appearance of cutis verticis gyrata. An examination showed widely distributed scattered papules, nodules, pustules, abscesses, sinuses and scarring, with a trench-like appearance on the scalp, face, and neck. The patient was diagnosed with acne inversa with secondary cutis verticis gyrata. Corticosteroids, minocycline, and isotretinoin were orally administered, but the patient developed resistance to each drug. The patient had no other complicating disease, history of infection, or family genetic history.

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**The potential uses of n-acetylcysteine in dermatology: a review.** Janeczek M, Moy L, Riopelle A, et al. *J Clin Aesthet Dermatol.* 2019 May;12(5):20-26. Epub 2019 May 1. <https://www.ncbi.nlm.nih.gov/pubmed/31320973>

Background: In recent studies, N-acetylcysteine has been shown to be efficacious in several dermatologic conditions. Objective: The aim was to review clinical trials that assess the efficacy of N-acetylcysteine in cutaneous disorders. Design: The PubMed database was searched and a manual search of clinical trials in the references was performed. Studies included randomized, controlled studies, uncontrolled studies, meta-analyses, and systemic reviews published between years 1966 and 2017. Results: Efficacy of N-acetylcysteine was shown in excoriation disorder, onychophagia disorder, trichotillomania, acne vulgaris, Type I lamellar ichthyosis, bullous morphea, systemic sclerosis, toxic epidermal necrolysis, atopic dermatitis, xeroderma pigmentosum, and pseudoporphyria. Studies also show benefits in wound healing and photoprotection. Conclusion: The review of available literature suggests that N-acetylcysteine could potentially serve as a safe, tolerable, and effective therapeutic option for a variety of dermatologic conditions.

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**Development of the powder formulas for acne treatment.** Chubinidze N, Abuladze N, Iavich P. *Georgian Med News.* 2019 May;(290):140-144. <https://www.ncbi.nlm.nih.gov/pubmed/31322532>

Given the large enough area of the spread of acne disease, research is needed on the development of the new versions of preparations. Cosmetics and cosmeceuticals of daily use are easy to consume as preventive remedies during mild form of the disease at an early stage. These remedies include powders, which women tend to use every day, and men, if necessary, but quite often. Powder should fit the skin, not be crumbled during the air disturbance and be kept on the face for a relatively long time, have hygroscopicity, that is, they should absorb the sweat and fat. When developing formula of similar powder, we used the available literature data on remedies using for the treatment of acne. There have been studied some technological and rheological properties of powders, such the bulk specific gravity, bulk density and natural angle of slope. Given that all parameters depend on the dispersion and a specific surface of powder, the shape of the particles and their size distributions, we used the particles of all ingredients with a size of 3 to 20 µm. The obtained powder samples are easily applied to the skin, keeping on it for at least 4-5 hours. When applied to the oily skin, there are not observed swelling of starch and coating of pores, as well as the formation of a colloidal structure of bentonite clay. For the first time, a new formula is proposed for acne treating powders

containing both plant and mineral components, determining both the structural features of powder and those features that are involved in certain processes that help to increase the pharmacological effect.

## Patient Counseling/Communication

**Patient awareness of antimicrobial resistance and antibiotic use in acne vulgaris.** Del Rosso JQ, Rosen T, Palceski D, Rueda MJ. *J Clin Aesthet Dermatol.* 2019 Jun;12(6):30-41. Epub 2019 Jun 1.

<https://www.ncbi.nlm.nih.gov/pubmed/31360286>

Background: Antibiotic resistance presents a threat to public health. In dermatology, antibiotics are used extensively for the treatment of acne, sometimes for extended periods. Thus, awareness of antibiotic resistance among dermatology patients is relevant in clinical practice. Methods: An online survey assessed antibiotic resistance awareness in adults with acne (n=809) and the parents of adolescents with acne (n=210). Results: More than 80 percent of subjects said that they were "somewhat familiar" or "very familiar" with antibiotic resistance. Overall, 86 percent of the survey respondents identified the correct definition of antibiotic resistance, with parents more likely than their children to choose the proper definition of resistance, as follows: "When antibiotics and/or antibacterials are used for a period of time, the infectious organism adapts to them and becomes immune, resulting in less effective treatment" (95% confidence interval). Among subjects who might have been prescribed antibiotic treatment for their acne, including individuals that reported antibiotic treatment and individuals that were not sure, 76.9 percent reported that they would be very or extremely likely to use effective antibiotic-free options if given the opportunity. More than 90 percent of people with acne and their parents agreed that healthcare providers should do more to educate patients about antibiotics and antibiotic resistance. Conclusions: This survey indicated that patients with acne and their parents think more should be done to educate the public about the potential risks associated with antibiotic use and the availability of antibiotic-free treatment options. Discussions with patients about antibiotic therapies, antibiotic resistance, and alternative therapies represent areas of opportunity for healthcare providers in dermatology.