AARS HOT TOPICS MEMBER NEWSLETTER

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Industry News

Cosmetic makers harness microbiome to help treat skin conditions. May 10, 2017. News Medical. http://www.news-medical.net/news/20170510/Cosmetic-makers-harness-microbiome-to-help-treat-skin-conditions.aspx

Cosmetic companies have started developing and selling products designed to harness the skin microbiome to help treat a range of skin conditions from acne to eczema. Skeptics, however, warn that touting such an approach is premature because scientists are still working to understand the bacteria that live on our skin and interact with it. The cover story in Chemical & Engineering News (C&EN), the weekly newsmagazine of the American Chemical Society, scopes out the scene. Marc S. Reisch, a senior correspondent at C&EN, reports that cosmetic firms, large and small, are increasingly interested in how the microbiome affects skin health. To see if they can bottle some of its potential benefits, they're researching skin bacteria and active ingredients to promote helpful microbes and discourage harmful ones. However, skeptics caution that scientists don't yet have a baseline picture of what a healthy skin microbiome would look like, much less know how to achieve a healthy bacterial community. Undeterred by the limited body of skin microbiome knowledge, at least a couple of companies have already marketed bacteria-based product lines. Yun Probiotherapy says its line incorporates "friendly" bacteria to help correct skin microbe imbalances. AOBiome based its product on results from a study examining why horses roll in the dirt. They found that bacteria in the dirt produce compounds that help regulate inflammation and that could be beneficial to skin. Cosmetic heavyweights, including Johnson & Johnson, Procter & Gamble and L'Oréal, are also developing microbiome-based products. Source: https://www.acs.org/content/acs/en/pressroom/presspacs/2017/acs-presspac-may-10-2017/cosmetic-makers-bottle-bacteria-for-beautiful-skin.html

Foamix plans third phase 3 trial for minocycline foam to treat acne with NDA as goal. May 10, 2017. Healio Dermatology News. http://www.healio.com/dermatology/acne/news/online/%7Be854b82c-dccf-4b69-8257-95b71108a864%7D/foamix-plans-third-phase-3-trial-for-minocycline-foam-to-treat-acne-with-nda-as-goal

Foamix Pharmaceutical recently announced that based on the results of its first two phase 3 trials, it will conduct a third U.S. phase 3 trial of FMX101 to treat patients with moderate-to-severe acne. The trial is slated to begin mid-year, and if results are positive, the trial could form the basis of a new drug application (NDA) for FMX101 (minocycline foam 4%), which the company plans to submit in the second half of 2018, according to a news release from Foamix. “The totality of the clinical efficacy results from FMS101, including the further analysis we conducted of the phase 3 data, are positive,” Dov Tamarkin, PhD, CEO of Foamix, stated in the release. “Inconsistent results were noted in only one of the efficacy endpoints and the product appears to be safe and well tolerated. Based on our analysis of the efficacy results from Trials 04 and 05, we plan to conduct a third trial to validate the results, with the same co-primary endpoints and enrollment criteria but with a substantially increased sample size.” Target patient enrollment for the new trial is 1,500, and patients will be randomized to receive either FMX101 or vehicle foam once daily for 12 weeks. Mean change from baseline in the inflammatory lesion count and proportion of patients with Investor’s Global Assessment scores of “clear or “almost clear” with improvement of at least two grades from baseline are co-primary endpoints, according to the release. Foamix reported that the trial is to be conducted at approximately 30 clinical sites in the U.S. Reference: www.foamixpharma.com

BPX-01 topical minocycline shows efficacy in treating acne. May 4, 2017. Healio Dermatology News. http://www.healio.com/dermatology/acne/news/online/%7B00e5c011-b428-4b70-a9cd-6c5cc244be06%7D/bpx-01-topical-minocycline-shows-efficacy-in-treating-acne

BioPharmX announced that BPX-01 showed efficacy in both 1% and 2% doses in treating moderate-to-severe acne in children and adults. BPX-01 is a solubilized topical minocycline gel product candidate for the treatment of moderate-to-severe acne. In meeting a phase 2b study's primary endpoint, both 1% and 2% doses of BPX-01 significantly reduced non-nodular inflammatory acne lesions when compared to vehicle, according to a news release from BioPharmX. The randomized, double-blind study measured the efficacy and safety of BPX-01 in two concentrations and vehicle in treating 226 patients, aged 9 to 40 years, with moderate-to-severe inflammatory, non-nodular acne vulgaris. The BPX-01 2% treatment cohort (n = 72) had a reduction of 15.4 in absolute mean change in number of acne lessons at week 12 compared to baseline (P = 0.022 compared to vehicle), while the BPX-01 1% cohort (n = 73) had a reduction of 15.5 compared to baseline (P = .037 compared to vehicle) and vehicle cohort (n = 74) had a reduction of 11.3 compared to baseline. The study's secondary endpoint was the proportion of patients with at least a two-grade reduction in Investor's Global Assessment to clear "0" or almost clear "1." In the BPX-01 2% cohort, 22.7% met the secondary endpoint, while 16% of the BPX-01 1% cohort and 17.1% of vehicle also met the secondary endpoint. However, the results were not statistically significant. BioPharmX has not yet analyzed the safety data from the phase 2b study, but there were no serious adverse events related to study treatment reported to the company by the investigators, according to the release. Reference: www.biopharmx.com

New Medical News

Non-ablative fractional laser-assisted daylight photodynamic therapy with topical methyl aminolevulinate for moderate to severe facial acne vulgaris: Results of a randomized and comparative study. Kim TI, Ahn HJ, Kang IH, et al. Photodermatol Photoimmunol Photomed. 2017 May 13. doi: 10.1111/phpp.12312. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/28500784

BACKGROUND: Photodynamic therapy (PDT) has been reported as an effective alternative treatment for patients with acne. PURPOSE: To evaluate the efficacy and safety of DL-PDT in moderate to severe acne and to compare outcomes with those of laser-assisted daylight photodynamic therapy. METHODS: Patients were randomly assigned to either a DL-PDT group (D group) or a fractional laser-assisted DL-PDT group (F group). The outcomes were assessed by measuring acne lesion counts and severity grade at 4, 8, 12, and 16 weeks after therapy commenced. RESULTS: Twenty-eight subjects completed the study. Compared with baseline, the mean inflammatory lesion counts significantly decreased by 36.0% in the D group and 51.8% in the F group at 8 weeks ($p<0.001$). The mean acne severity grades in both groups significantly decreased starting at 4 weeks ($p=0.012$), and the beneficial effects lasted 16 weeks. CONCLUSION: DL-PDT with MAL shows clinically good responses to inflammatory lesions and is well tolerated in patients with moderate to severe acne.

The Potential of Triterpenoids from Loquat Leaves (Eriobotrya japonica) for Prevention and Treatment of Skin Disorder. Tan H, Sonam T, Shimizu K. Int J Mol Sci. 2017 May 11;18(5). pii: E1030. doi: 10.3390/ijms18051030. http://www.mdpi.com/1422-0067/18/5/1030

The leaves of loquat (Eriobotrya japonica) possess high medicinal value and have been used as traditional

medicines. However, there are no evidence-based studies on the skin-care effects of E. japonica leaves. To explore new biological activities of E. japonica leaves against skin disorder and to gain a better understanding of the chemical components associated with bioactivities, we evaluated 18 triterpenoids from E. japonica leaves on anti-melanogenesis, anti-acne, anti-allergy and anti-aging activities. Our results revealed that eight compounds showed anti-melanogenesis activity, of which ursolic acid (1) and maslinic acid (7) were the most potent with the similar selective index to that of arbutin. Structure-activity relationship and possible mechanism of active compounds were proposed. Twelve compounds exhibited anti-acne effect; ursolic acid (1), maslinic acid (7), corosolic acid (8) and euscaphic acid (12) showed highest activities against P. acnes. Four compounds displayed anti-allergy and anti-inflammatory activity; 3-epicorosolic acid (9) and euscaphic acid (12) showed marked activity against β-hexosaminidase release. Finally, ursolic acid (1), pomolic acid (10), colosolic acid (8) and its methylated derivative (6) exhibited the highest anti-aging activity by stimulating collagen and hyaluronic acid (HA) production. Our findings provide valuable evidence that E. japonica leaves have potential applications as ingredients of function foods or cosmetics for health benefits and a number of triterpenoids may play an important role in these bioactivities.

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Factors affecting the course and severity of adult acne. Observational cohort study. Chlebus E, Chlebus M. J Dermatolog Treat. 2017 May 10:1-21. doi: 10.1080/09546634.2017.1329500. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/28489484

OBJECTIVE: To identify factors improving symptoms and shortening duration of AA. MATERIAL AND METHODS: The observational cohort study was performed in 111 patients with AA (> 25 y.o.) in 2015-2016. Clinical manifestation, previous treatments, environmental risk factors and features of juvenile acne affecting AA were assessed. RESULTS: The maximum severity of persistent acne was significantly lower after 25 years of age, as compared to adolescence (7.2 vs 6.4; P = 0.0027). The number of acne therapies used in AA was twice as high as in juvenile acne (22 vs. 11). The severity of AA sufficient to leave scars was significantly lower than of juvenile acne (6.0 vs. 7.3; P = 0.0001) with 22% of patients developing scars only in adult life. Patients linked exacerbations to stress exposure (P = 0.09 and <0.0001 for those reporting at least one stressor and all patients, respectively), finding lifestyle changes the most stressful (P = 0.046). Those using full-coverage foundations received significantly more acne treatments over lifetime (5.4 vs 3.6; P = 0.0359) and for AA (4.4 vs 2.8; P = 0.0043). Discontinuation of oral contraceptives or sensitive, erythema-prone skin also worsened the symptoms. CONCLUSION: Lifestyle change-related stress, sensitive skin, discontinuation of oral contraceptives and using full-coverage foundations increase severity of AA.

Acne conglobata in a long-term survivor with trisomy 13, accompanied by selective IgM deficiency. Inoue CN, Tanaka Y, Tabata N. Am J Med Genet A. 2017 May 7. doi: 10.1002/ajmg.a.38251. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/28480529

Trisomy 13 (T13) is a congenital chromosomal disorder that is usually fatal within 2 years of birth, and only a few patients have been reported to reach adolescence. Here, we report a male long-term survivor of T13, currently 15 years of age, with a several-year history of extensive acne conglobata (AC) with abscesses on the face and neck. Methicillin-resistant Staphylococcus aureus was consistently isolated from the pustular lesions. Serum IgM levels were extremely low at 10 mg/dl. There were no abnormalities in neutrophil and total B cell number, or in serum IgA and IgG levels. Increased CD8+ T cell counts and inversion of the CD4/CD8 ratio were observed repeatedly. The

patient's clinical features and laboratory data support a diagnosis of selective IgM deficiency (SIgMD) with concurrent AC. Immunoglobulin replacement therapy elevated serum IgM levels to the normal range and reduced the severity of AC. We suggest that T13 may represent a syndromic disorder associated with multiple organ malformation and a risk of developing immunodeficiency involving SIgMD. Because pediatric SIgMD is rare and an immunological abnormality in T13 patients has not previously been reported, we describe the patient's clinical course.

Pharmacological PPARγ modulation regulates sebogenesis and inflammation in SZ95 human sebocytes. Mastrofrancesco A, Ottaviani M, Cardinali G, et al. Biochem Pharmacol. 2017 Apr 29. pii: S0006-2952(17)30247-2. doi: 10.1016/j.bcp.2017.04.030. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/28461124

The nuclear receptor peroxisome proliferator-activated receptor gamma (PPARγ) controls the expression of genes involved in the regulation of lipid and glucose metabolism, cell proliferation/differentiation as well as inflammatory pathways. Pivotal studies in human sebocytes and isolated sebaceous glands have raised the interesting possibility that compounds acting on PPARγ can modulate sebaceous lipids and inflammation and, as such, may be useful in the treatment of acne. To investigate the role of this receptor in the regulation of lipid synthesis, proliferation and inflammation, we used the SZ95 sebaceous gland cell line stimulated with insulin. In sebocytes, insulin signaling activated the phosphatidylinositide 3-kinase-Akt (PI3K/Akt) and mammalian target of rapamycin (mTOR) pathways, which, in turn, induced high protein/lipid synthesis, increased cell growth and proliferation as well as inflammation. As regards lipogenesis, insulin initially stimulated the formation of unsaturated lipids and then the neosynthesis of lipids. The results showed, that the modulation of PPARγ, counteracted the insulin-induced altered lipogenesis, evident through a decrease in gene expression of key enzymes responsible for the synthesis of fatty acids, and through a reduction of lipid species synthesis analyzed by Oil/Nile Red staining and GC-MS. PPARγ modulation also regulated the insulin-induced proliferation, inhibiting the cell cycle progression and p21WAF1/CIP1 (p21) protein reduction. Moreover, the expression of inflammatory cytokines, induced by insulin or lipopolysaccharide (LPS), was down-modulated. In PPARγ-deficient cells or in the presence of GW9662 antagonist, all these observed effects were abolished, indicating that PPARγ activation plays a role in regulating alteration of lipogenesis, cell proliferation and inflammatory signaling. We demonstrated that selective modulation of PPARγ activity is likely to represent a therapeutic strategy for the treatment of acne.

Effects of Helicobacter pylori treatment on rosacea: A single-arm clinical trial study. Saleh P, Naghavi-Behzad M, Herizchi H, et al. J Dermatol. 2017. Epub: 28 April 2017. doi:10.1111/1346-8138.13878 http://onlinelibrary.wiley.com/doi/10.1111/1346-8138.13878/abstract

Rosacea is a chronic dermatological disease. Helicobacter pylori has been discussed as one of its causative factors. In this clinical trial study, we attempted to evaluate the effect of H. pylori standard eradication protocol on the rosacea clinical course. In this single-arm clinical trial, patients ascertained to have H. pylori infection based on serological studies were assessed to examine existence of rosacea. Patients with concurrent rosacea and H. pylori infection were included in the study and underwent standard H. pylori eradication therapy. Rosacea was evaluated using the Duluth rosacea grading score at the beginning, 2 months later and at the end of the trial (day 180). Of 872 patients positive for H. pylori, 167 patients (19.15%) manifested the clinical features of rosacea. The patients with concurrent rosacea were younger ($P < 0.001$) and with a female sex predominance ($P = 0.03$) when compared with rosacea-free patients. Of 167 patients, 150 received H. pylori eradication therapy, demonstrating a 92% (138/150)

cure rate. The rosacea Duluth score grading on day 0, 60 and 180 among 138 patients significantly decreased in most of the criteria except for telangiectasias (P = 0.712), phymatous changes (P = 0.535) and the existence of peripheral involvement (P = 0.431). The present study concluded that H. pylori eradication leads to improvement of rosacea.

Mutations in γ-secretase subunit-encoding PSENEN underlie Dowling-Degos disease associated with acne inversa. Ralser DJ, Basmanav FB, Tafazzoli A, et al. J Clin Invest. 2017 Apr 3;127(4):1485-1490. doi: 10.1172/JCI90667. Epub 2017 Mar 13. https://www.jci.org/articles/view/90667

Dowling-Degos disease (DDD) is an autosomal-dominant disorder of skin pigmentation associated with mutations in keratin 5 (KRT5), protein O-fucosyltransferase 1 (POFUT1), or protein O-glucosyltransferase 1 (POGLUT1). Here, we have identified 6 heterozygous truncating mutations in PSENEN, encoding presenilin enhancer protein 2, in 6 unrelated patients and families with DDD in whom mutations in KRT5, POFUT1, and POGLUT1 have been excluded. Further examination revealed that the histopathologic feature of follicular hyperkeratosis distinguished these 6 patients from previously studied individuals with DDD. Knockdown of psenen in zebrafish larvae resulted in a phenotype with scattered pigmentation that mimicked human DDD. In the developing zebrafish larvae, in vivo monitoring of pigment cells suggested that disturbances in melanocyte migration and differentiation underlie the DDD pathogenesis associated with PSENEN. Six of the PSENEN mutation carriers presented with comorbid acne inversa (AI), an inflammatory hair follicle disorder, and had a history of nicotine abuse and/or obesity, which are known trigger factors for AI. Previously, PSENEN mutations were identified in familial AI, and comanifestation of DDD and AI has been reported for decades. The present work suggests that PSENEN mutations can indeed cause a comanifestation of DDD and AI that is likely triggered by predisposing factors for AI. Thus, the present report describes a DDD subphenotype in PSENEN mutation carriers that is associated with increased susceptibility to AI.

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Isotretinoin as a Possible Environmental Trigger to Autoimmunity in Genetically Susceptible Patients. Nugroho J, Schweiger B. Case Rep Pediatr. 2017;2017:4207656. doi: 10.1155/2017/4207656. Epub 2017 Mar 26. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5385229/pdf/CRIPE2017-4207656.pdf

Introduction: Isotretinoin is commonly used to treat cystic acne. Definitive mechanisms of action for isotretinoin are not known though despite many side effects having been documented. Various case reports have noted autoimmune diseases succeeding isotretinoin treatment. Case Report: A 16-year-old female presents with symptoms of tremors, lack of focus, sleeplessness, emotional liability, bulging eyes, loose stools, heat intolerance, and missed menstrual periods. Symptoms manifested shortly after the patient finished a course of oral isotretinoin treatment for acne. Physical exam showed resting tremors, bilateral proptosis, hyperactivity, and rapid speech. A diagnosis of Graves' Disease was made by correlating symptoms, physical exam findings, ultrasound, and positive family history of autoimmune thyroid disease. Conclusion: Emergence of autoimmune thyroid diseases depends upon genetic predisposition and environmental triggers. Mechanism of action for isotretinoin is not known but the drug may play a role in triggering autoimmunity in genetically susceptible individuals.

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Acne RA-1,2, a novel UV-selective face cream for patients with acne: Efficacy and tolerability results of a randomized, placebo-controlled clinical study. Cestone E, Michelotti A, Zanoletti V, et al. J Cosmet Dermatol. 2017 Jan 29. doi: 10.1111/jocd.12309. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/28133878

BACKGROUND: General skincare measures such as the use of moisturisers and products containing adequate photoprotection are important components of acne patients' management to complement the pharmacological regimen. Acne RA-1,2 is a novel dermato-cosmetic product which contains selective photofilters and active ingredients against the multifactorial pathophysiology of acne. OBJECTIVES: To evaluate the tolerability of Acne RA-1,2 and its effect on the clinical signs of acne. METHODS: This double-blind, placebo-controlled study randomized 40 adult patients with 10-25 comedones per half face to once-daily application of Acne RA-1,2 or placebo for 8 weeks. Evaluations after 4 and 8 weeks included the number of comedones, transepidermal water loss (TEWL), sebum production, and tolerability. RESULTS: In the Acne RA-1,2 group, there was a significant 35% decrease in the mean number of comedones from 26 at baseline to 17 at Week 8 (P<.001), a 7% significant reduction in TEWL (9.32 to 8.66 g/h/m2 ; P<.001), and a 24% significant reduction in sebum production (154.8 to 117.6 µg/cm2 ; P<.001). The reductions in TEWL and sebum production were significantly greater than those in the placebo group at Weeks 4 and 8 (P<0.05). There were no adverse events. CONCLUSIONS: Acne RA-1,2 was well tolerated and effective at reducing comedones and sebum production and improving epidermal barrier function. These results suggest that Acne RA-1,2 is useful against acne-prone facial skin, particularly as it targets sebum production, which topical pharmacological acne therapies do not address.

Clinical Reviews

Development of an atrophic acne scar risk assessment tool. Tan J, Thiboutot D, Gollnick H, et al. J Eur Acad Dermatol Venereol. 2017 May 12. doi: 10.1111/jdv.14325. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/28499079

BACKGROUND: Acne is a chronic dermatological disease predominantly afflicting young adults and is often associated with the development of scars. Acne scarring is usually avoidable when acne is managed early and effectively. However, acne patients often fail to seek early treatment. New and innovative tools to raise awareness are needed. OBJECTIVE: This study presents the development and assessment of a tool aiming to assess the risk of atrophic acne scars. METHODS: A systematic literature review of clinical risk factors for acne scars, a Delphi-like survey of dermatological experts in acne and secondary data analysis were conducted in order to produce an evidence-based risk assessment tool. The tool was assessed both with a sample of young adults with and without scars and was assessed via a database cross-validation. RESULTS: A self-administered tool for risk assessment of developing atrophic acne scars in young adults was developed. It is a readily comprehensible and practical tool for population education and for use in medical practices. It comprises four risk factors: worst ever severity of acne, duration of acne, family history of atrophic acne scars and lesion manipulation behaviours. It provides a dichotomous outcome: lower versus higher risk of developing scars, thereby categorising nearly two thirds of the population correctly, with sensitivity of 82% and specificity of 43%. CONCLUSION: The present tool was developed as a response to current challenges in acne scar prevention. A potential benefit is to encourage those at risk to self-identify and to seek active intervention of their acne. In clinical practice, we expect this tool may help clinicians identify patients at risk of atrophic acne scarring and underscore their requirement for rapid and effective acne treatment.

Updating the diagnosis, classification and assessment of rosacea by effacement of subtypes. Wilkin J. Br J Dermatol. 2017 May 6. doi: 10.1111/bjd.15632. [Epub ahead of print] http://onlinelibrary.wiley.com/doi/10.1111/bjd.15632/abstract

Tan, et al.,(ROSCO) propose to "transition beyond a subtype classification", which they ascribe to the National Rosacea Society's Classification of Rosacea (NRSCOR), asserting "Subtype classification may not fully cover the range of clinical presentations and is likely to confound severity assessment, whereas a phenotype-based approach could improve patient outcomes by addressing an individual patient's clinical presentation and concerns"(1). NRSCOR did not invent the phenotypic subtypes, described by expert dermatologists over preceding decades, but sought a common terminology for use in communicating ideas about rosacea (compare use in Fig. 1 by ROSCO). NRSCOR emphasized the potential evolution from one phenotypic subtype to another, and that phenotypic subtypes can occur together. ROSCO's claimed 'phenotypic approach' seems to be simply the elimination of these phenotypic subtypes.

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Spironolactone for the Treatment of Acne: A 4-Year Retrospective Study. Grandhi R, Alikhan A. Dermatology. 2017 May 5. doi: 10.1159/000471799. [Epub ahead of print] https://www.karger.com/Article/FullText/471799

Prior studies have demonstrated that spironolactone is an effective second-line treatment option for postadolescent acne, but has notable side effects. Data are, however, limited. We therefore present a 4-year retrospective study evaluating 291.5 patient-years of spironolactone for the treatment of acne. Our results showed that 86% of patients improved on spironolactone therapy. Further, patients who improved showed minimal side effects, supporting recent evidence that spironolactone is a safe option for acne treatment with a low risk of short-term adverse effects such as hyperkalemia. It is suggested that our study encourages consideration of spironolactone for postadolescent acne.

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Dermatological comorbidity in psoriasis: results from a large-scale cohort of employees. Zander N, Schäfer I, Radtke M, et al. Arch Dermatol Res. 2017 Apr 12. doi: 10.1007/s00403-017-1741-4. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/28405739

The field of dermatological comorbidity in psoriasis is only passively explored with contradictory results. Objective of this study was to further investigate the complex field of psoriasis and associated skin diseases by identifying skin comorbidity patterns in an extensive cohort of employees in Germany. Retrospective analysis of data deriving from occupational skin cancer screenings was conducted. From 2001 to 2014 German employees between 16 and 70 years from different branches underwent single whole-body screenings by trained dermatologists in their companies. All dermatological findings and need for treatment were documented. Point prevalence rates and their 95% confidence intervals were computed. Logistic regression analysis was performed to calculate odds ratios (OR) of single dermatological diseases to occur together with psoriasis controlled for age and sex. Data from 138,930 persons (56.5% male, mean age 43.2) were evaluated. Psoriasis point prevalence was 2.0%. Of those 20.6% had unmet treatment needs of their disease. Onychomycosis was the most frequent dermatological comorbidity with a prevalence of 7.8%. Regression analysis found rosacea (OR = 1.40, 95% CI 1.13-1.72) and telangiectasia (OR = 1.25, 95% CI 1.10-1.41) to be significantly associated with psoriasis. 17.2% of psoriasis patients had at least one further finding requiring treatment. The highest treatment needs were found for onychomycosis (3.4%), tinea pedis

(3.1%), and verruca plantaris (1.0%). It can be concluded that persons with psoriasis are at increased risk to suffer from comorbid skin diseases, which should be considered in treatment regimens. Particular attention should be paid to fungal diseases of the feet.

Skin needling as a treatment for acne scarring: An up-to-date review of the literature. Harris AG, Naidoo C, Murrell DF. Int J Womens Dermatol. 2015 Apr 10;1(2):77-81. doi: 10.1016/j.ijwd.2015.03.004. eCollection 2015 Jun. https://www.ncbi.nlm.nih.gov/pubmed/28491962

BACKGROUND: Skin needling is a technique used to improve the appearance of acne scarring. OBJECTIVE: To comprehensively review the medical literature regarding skin needling as a treatment for acne scarring. METHODS: A literature search was performed using the PubMed, Medline, and Embase databases, in addition to reviewing the bibliographies of relevant articles. RESULTS: Ten studies presented patients treated with skin needling alone, while eight studies discussed skin needling in combination with other treatments for acne scarring. All studies showed improvements in scarring after needling, with 12 reporting statistical significance. The median number of treatments when needling was used alone was three, the median duration between treatments was 4 weeks, and the median needle length used was 1.5 mm. Reported adverse events were infrequent and included post-inflammatory hyperpigmentation, "tram track" scarring, acne, and milia. There were no reports of bacterial infections. LIMITATIONS: The studies reviewed were heterogeneous in design and of variable validity, with some not reporting statistical significance. CONCLUSION: There is moderate evidence to suggest that skin needling is beneficial and safe for the treatment of acne scarring. However, double-blinded, randomized controlled trials are required to make more definitive conclusions.

The effect of probiotics on immune regulation, acne, and photoaging. Kober MM, Bowe WP. Int J Womens Dermatol. 2015 Apr 6;1(2):85-89. doi: 10.1016/j.ijwd.2015.02.001. eCollection 2015 Jun. https://www.ncbi.nlm.nih.gov/pubmed/28491964

Probiotics are live micro-organisms that provide a health benefit to the host. The role of probiotics in the management of disease, as well as immune modification, has recently experienced a renewed interest in society, as probiotics can be found in products ranging from yogurt to facial creams. In this article, we discuss the role of probiotics in the development of the immune system, the treatment of acne and rosacea, and protection against aging and photodamage.

Propionibacterium acnes and antimicrobial resistance in acne. Dessinioti C, Katsambas A. Clin Dermatol. 2017 Mar - Apr;35(2):163-167. doi: 10.1016/j.clindermatol.2016.10.008. Epub 2016 Oct 27. https://www.ncbi.nlm.nih.gov/pubmed/28274353

The human commensal bacterium Propionibacterium acnes (P. acnes) resides in the pilosebaceous duct of the skin. It has been long implicated in the pathogenesis of acne, although its exact role in the development of inflammatory acne lesions and in the formation of the microcomedo in the early stages of acne remains controversial. The worldwide prevalence of antibiotic-resistant P. acnes is increasing, with rates varying in different parts of the world. The reason for the difference in the antibiotic resistance patterns of P. acnes among different countries is not clear, although it may be attributed to different antibiotic prescribing habits, concomitant use of topical agents (retinoids, benzoyl peroxide, or other antibiotics), varying methods of bacterial sampling, or even

different P. acnes populations. Although the relative abundances of P. acnes may be similar among patients with acne and individuals without acne, P. acnes populations and the presence of P. acnes biofilms differ, with different potential virulence properties and antimicrobial resistance patterns. Implications of the use of antibiotics and of antimicrobial resistance in patients with acne include the decreased efficacy of antibiotic treatments for acne, and the possible emergence of other resistant bacterial species via selective pressure by antibiotic use.

Understanding the role of Propionibacterium acnes in acne vulgaris: The critical importance of skin sampling methodologies. Omer H, McDowell A, Alexeyev OA. Clin Dermatol. 2017 Mar - Apr;35(2):118-129. doi: 10.1016/j.clindermatol.2016.10.003. Epub 2016 Oct 27. https://www.ncbi.nlm.nih.gov/pubmed/28274348

Acne vulgaris is a chronic inflammatory skin condition classified by the Global Burden of Disease Study as the eighth most prevalent disease worldwide. The pathophysiology of the condition has been extensively studied, with an increase in sebum production, abnormal keratinization of the pilosebaceous follicle, and an inflammatory immune response all implicated in its etiology. One of the most disputed points, however, is the role of the gram-positive anaerobic bacterium Propionibacterium acnes in the development of acne, particularly when this organism is also found in normal sebaceous follicles of healthy skin. Against this background, we now describe the different sampling strategies that have been adopted for qualitative and quantitative study of P acnes within intact hair follicles of the skin and discuss the strengths and weaknesses of such methodologies for investigating the role of P acnes in the development of acne.

A Review of hormone-based therapies to treat adult acne vulgaris in women. Trivedi MK, Shinkai K, Murase JE. Int J Womens Dermatol. 2017 Mar 30;3(1):44-52. doi: 10.1016/j.ijwd.2017.02.018. eCollection 2017 Mar. http://www.ijwdonline.org/article/S2352-6475(17)30029-1/fulltext

Hormone-based therapies including combined oral contraceptive medications and spironolactone are considered effective therapies to treat adult acne in women. Our objective is to provide a concise and comprehensive overview of the types of hormonal therapy that are available to treat acne and comment on their efficacy and safety profiles for clinical practice. A systematic search using the PubMed Database was conducted to yield 36 relevant studies for inclusion in the review and several conclusions were drawn from the literature. Treatment with oral contraceptive pills leads to significant reductions in lesion counts across all lesion types compared with placebo. There were no consistent differences in efficacy between the different combined oral contraceptive formulations. In terms of risk, oral contraceptive pill users had three-times increased odds of venous thromboembolism versus non-users according to a recent meta-analysis (95% confidence interval 2.46-2.59). Data on oral contraceptive pill use and breast cancer risk are conflicting but individual patient risk factors and histories should be discussed and considered when prescribing these medications. However, use of these medications does confer measurable protection from endometrial and ovarian cancer. Spironolactone was also shown to be an effective alternative treatment with good tolerability. Combined oral contraceptive medications and spironolactone as adjuvant and monotherapies are safe and effective to treat women with adult acne. However, appropriate clinical examinations, screening, and individual risk assessments particularly for venous thromboembolism risk must be conducted prior to initiating therapy.

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Oral Contraceptives for Acne Treatment: US Dermatologists' Knowledge, Comfort, and Prescribing Practices. Fitzpatrick L, Mauer E, Chen CL. Cutis. 2017 March;99(3):195-201. http://www.mdedge.com/cutis/article/132746/acne/oral-contraceptives-acne-treatment-us-dermatologists-knowledge-comfort-and?channel=171&utm_source=Clin_CUT_sf-acne_051117&utm_medium=email&utm_content=OCPs%20for%20acne%20treatment:%20Are%20dermatologists%20comfortable%20with%20prescribing%20them

The use of oral contraceptive pills (OCPs), which can be an effective treatment of acne in women, is poorly understood among many dermatologists. In this study, we surveyed 116 US dermatologists about their knowledge, comfort, and prescribing practices pertaining to the use of OCPs. The majority of respondents had previously prescribed OCPs and believed they were an effective treatment of acne in women. Despite adverse effects such as increased risk for venous thromboembolism (VTE) associated with OCPs, especially those containing drospirenone, our study indicated that many dermatologists believe the benefits of increased treatment efficacy may outweigh the risks.

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Botanicals With Dermatologic Properties Derived From First Nations Healing. Colantonio S, Rivers JK. J Cutan Med Surg. 2016 Dec 1:1203475416683390. doi: 10.1177/1203475416683390. [Epub ahead of print] https://www.ncbi.nlm.nih.gov/pubmed/28300437

INTRODUCTION: Plants and algae have played a central role in the treatment of skin conditions in both traditional First Nations healing and in modern dermatology. The objective of this study was to examine the evidence supporting the dermatological use of seaweed, witch hazel, bearberry, and mayapple. METHODS: Four plants and algae used in traditional First Nations treatments of skin disease were selected based on expert recommendations. Several databases were searched to identify relevant citations without language restrictions. RESULTS: Seaweed has potential clinical use in the treatment of acne and wrinkles and may be incorporated into biofunctional textiles. Witch hazel is an effective and well-tolerated treatment of inflammation and diaper dermatitis. Bearberry leaves contain arbutin, a skin-lightening agent that is an alternative for the treatment of hyperpigmentation. Mayapple contains podophyllotoxin, a treatment for condyloma accuminata, molluscum contagiosum, and recalcitrant palmoplantar warts. DISCUSSION: Common plants and algae are replete with bioactive agents that may have beneficial effects on the skin. Further research will open the door to new and innovative products in the future. Limitations of this study include that the scope of our study is limited to 4 plants and algae, a small sample of the breadth of plants used by First Nations for dermatological treatments.

Patient Counseling/Communication

How does acne affect self-confidence? May 8, 2017. News-Medical. http://www.news-medical.net/news/20170508/How-does-acne-affect-self-confidence.aspx

An interview with Dr. Anjali Mahto, Consultant Dermatologist & British Skin Foundation spokesperson, conducted by April Cashin-Garbutt, MA (Cantab).

According to a recent survey by the British Skin Foundation, what impact does acne have on self-confidence?

Three in five teenagers surveyed by the British Skin Foundation reported 'a fall in self-confidence' as the biggest impact that acne has on their lives. From my experience as a dermatologist I find that those with acne can often feel unsupported, socially isolated and become withdrawn. This fall in self-confidence can affect all aspects of their life including relationships with family, friends and peers. *How many teenagers reported being verbally abused because of their acne?* The British Skin Foundation survey found that 62% of teenagers were verbally abused by people they knew such as friends, family or peers which is disappointingly high. Some 40% also reported that they were verbally abused by people they didn't know. This kind of treatment can really impact a person's self-worth and lead to depression. *Why do you think self-esteem is so closely tied to acne and the skin?* In today's society social media, television, film and magazines all put pressure on young people to look 'perfect'. It's therefore easy to understand why teenagers experience low self-esteem if they suffer from acne. The face is always on display and it's difficult to hide spots from their peers. Teenagers can end up feeling as if they're not normal or ugly if they are unable to live up to celebrities and their friends. What is really sad about it, is that acne, for the majority of people is a treatable skin disorder, and having suffered with it myself, I really do feel that no one should just have to live with it. A good dermatologist can offer a large number of potential treatments that can be tailored to the individual. Unfortunately, the skin is such a visible organ, that it's only natural that self-esteem is so closely tied to it. *What further research is needed to investigate the psychological burden of acne?* The detailed mechanisms of interaction between acne and psychological stress have not been studied. There is limited epidemiological data linking acne and psychological state. Large studies comparing the effects of acne in different age groups are unavailable. We do not have data on whether psychological intervention (and which intervention) may be best for those with acne. The research possibilities are endless but these touch on a few potential areas. *What support is available for people with acne?* The British Skin Foundation has a Talkhealth forum for people who suffer from all kinds of skin conditions including acne here. There is also an upcoming 'Ask the Expert' clinic on acne which allows users to log on and ask BSF experts their acne questions. There's an initiative called School Derm Time which includes downloadable resources for schools. Most importantly see your GP or dermatologist and ask for help. Dermatologists are the only medical doctors with an in depth knowledge of skin function in health and disease and will be able to give detailed treatment plans for acne and psychological support. *Where can readers find more information?* British Skin Foundation, DermNetNZ, Acne Academy.

The Role of Skin Care in Optimizing Treatment of Acne and Rosacea. Zip C. Skin Therapy Lett. 2017 May;22(3):5-7. https://www.ncbi.nlm.nih.gov/pubmed/28492949

A triad approach to the treatment of acne and rosacea has been recommended. This integrated management approach includes patient education, selection of therapeutic agents, and initiation of an appropriate skin care regime. Proper skin care in patients undergoing treatment of both acne and rosacea includes use of products formulated for sensitive skin that cleanse, moisturize and photoprotect the skin. Both acne and rosacea are associated with epidermal barrier dysfunction, which can be mitigated by suitable skin care practices. Appropriate skin care recommendations for patients with acne and rosacea will be discussed.

Psychological Status and Quality of Life in Acne Patients Treated with Oral Isotretinoin. Šimić D, Penavić JZ, Babić D, Gunarić A. Psychiatr Danub. 2017 May;29(Suppl 2):104-110. https://www.ncbi.nlm.nih.gov/pubmed/28492216

INTRODUCTION: The acne patients are at higher risk of acquiring depresion and anxiety, which can lead to reduced quality of life. Effective treatment of acne can reduce symptoms of anxiety and depression and significantly

improve other physiological parameters and quality of life of these patients. The aim of this study was to determine the psychological status and quality of life of acne patients before, during and after the treatment with oral isotretinoin. SUBJECTS AND METHODS: The prospective study included a total of 127 patients suffering from moderate to severe form of acne. To assess the psychological status and quality of life of studied groups the following standard psychometric questionnaires were performed before, during and after the treatment with oral isotretinoin: Beck Depression Inventory (BDI), Assessments of the Psychological and Social Effects of Acne (APSEA), State Trait Anxiety Inventory (STAI), Measure of Psychological Stress (MPS) and Dermatology Specific Quality of Life (DSQL). RESULTS: Results of the present study indicate that there is no increase in depressive and anxiety symptoms in the patients treated with oral isotretinoin. The psychological status by gender has shown the existence of differences between the genders in all measures of psychological status. Statistically significantly better quality of life was observed after healing than before treatment. CONCLUSION: The results of our study showed no higher risk of depression and anxiety within the patients with acne treated with oral isotretinoin. Improvement of quality of life after the treatment of acne with oral isotretinoin was confirmed.

Updates in the understanding and treatments of skin & hair disorders in women of color. Lawson CN, Hollinger J, Sethi S, et al. Int J Womens Dermatol. 2017 Feb 16;3(1 Suppl):S21-S37. doi: 10.1016/j.ijwd.2017.02.006. eCollection 2017 Mar. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5419061/pdf/main.pdf

Skin of color comprises a diverse and expanding population of individuals. In particular, women of color represent an increasing subset of patients who frequently seek dermatologic care. Acne, melasma, and alopecia are among the most common skin disorders seen in this patient population. Understanding the differences in the basic science of skin and hair is imperative in addressing their unique needs. Despite the paucity of conclusive data on racial and ethnic differences in skin of color, certain biologic differences do exist, which affect the disease presentations of several cutaneous disorders in pigmented skin. While the overall pathogenesis and treatments for acne in women of color are similar to Caucasian men and women, individuals with darker skin types present more frequently with dyschromias from acne, which can be difficult to manage. Melasma is an acquired pigmentary disorder seen commonly in women with darker skin types and is strongly associated with ultraviolet (UV) radiation, genetic factors, and hormonal influences. Lastly, certain hair care practices and hairstyles are unique among women of African descent, which may contribute to specific types of hair loss seen in this population, such as traction alopecia, trichorrhexis nodosa and central centrifugal cicatricial alopecia (CCCA).

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Rosacea. Maor D, Chong AH. Aust Fam Physician. 2017;46(5):277-281. https://www.ncbi.nlm.nih.gov/pubmed/28472572

BACKGROUND: Rosacea is a chronic and common cutaneous condition characterised by symptoms of facial flushing and a broad spectrum of clinical signs. The clinical presentation for rosacea is varied, and there are four primary subtypes, which may overlap - erythrotelangiectatic, inflammatory, phymatous and ocular. It is important to recognise the different subtypes because of the differences in therapy. OBJECTIVE: The objective of this article is to provide evidence-based clinical updates to clinicians, specifically general practitioners (GPs), to assist with their everyday practice, and effective assessment and treatment of rosacea. DISCUSSION: Therapeutic modalities are chosen on the basis of the subtypes and clinical features identified; often a combination of these therapies is required.

Feelings of stigmatization in patients with rosacea. Halioua B, Cribier B, Frey M, Tan J. J Eur Acad Dermatol Venereol. 2017 Jan;31(1):163-168. doi: 10.1111/jdv.13748. Epub 2016 Jun 21. http://onlinelibrary.wiley.com/doi/10.1111/jdv.13748/abstract

BACKGROUND: Rosacea is a chronic facial disease that may lead to feelings of stigmatization, which can negatively impact psychological and social well-being. OBJECTIVE: The aim of this study was to evaluate different aspects of rosacea that could contribute to feelings of stigmatization. METHODS: An online survey of a representative sample of the adult population in the UK, France, Germany and US was conducted to identify patients with rosacea based on presence of three or more clinical features. RESULTS: Among the patients who completed the survey (n = 807), mean age at first sign/symptom of rosacea was 31.3 ± 14.5 years; mean duration of disease was 102 ± 119 months. One-third of patients reported feelings of stigmatization (FS; n = 275). Male patients were more likely to experience FS (49% vs. 37.2% in non-FS population; P = 0.0037). Those with FS were more likely to avoid social situations (54.2% vs. 2.0%, P < 1.00E-10) and had a higher rate of depression (36.7% vs. 21.1%, P < 1.00E-10). CONCLUSIONS: Stigmatization is important in the daily lives of those with rosacea and should be taken into consideration in the management of these patients.

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