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Industry News

Sun Pharma highlights *Sorry to Superimpose* digital campaign. January 4, 2021. Sun Pharma.
Sun Pharma continues to innovate in the digital media space with the recent launch of Sorry to Superimpose YouTube ad campaign. Similar to *Take on Acne*, this newer initiative optimizes and personalizes the use of a popular digital media channel to reach teenagers and young adults living with severe recalcitrant nodular acne. With so much noise around skin care, Sun wants to make sure that teens and young adults with this type of acne are getting information specific to their situation. Doing this well requires clever use of both creative and media to break through the clutter. Since GenZ watches 15,648,452 videos a month, Sun created a responsive pre-roll campaign to serve creative and messaging based on the type of content teens and young adults are already viewing. After analyzing and targeting over a million YouTube videos based on tone and description, a series of short videos were created to align with the most popular categories - dorm living, video games, slime life, makeup tutorials, sports and do-it-yourself (DIY). *Sorry to Superimpose* features a superimposed face on inanimate objects that's sorry, but not sorry, to interrupt their video watching to tell them that "clearer skin is possible in 5 months". Sorry to Superimpose campaign has gained recognition by winning an MM&M Gold Award for Use of Data/Analytics and Rx Club Awards of Excellence for Campaign and Social Media.

New Medical Research

Preparation and evaluation of adapalene nano structured lipid carriers (NLCs) for targeted drug delivery in acne. Ahmad Nasrollahi S, Koohestani F, Naeimifar A, et al. Dermatol Ther. 2021 Jan 12;e14777. doi: 10.1111/dth.14777. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33433054/
Background and Objectives Adapalene is believed to be one of the topical treatments utilized commonly in case of acne. Nano structured lipid carriers (NLCs) have been established as an effective carrier system with certain advantages, for instance increased solubility, drug targeting, controlled drug release, and stability of Adapalene (ADA). This study was conducted to obtain the formulation with a good therapeutic property. All formulations were formed by probe sonicator and its characterizations were analyzed. Finally, we evaluated the therapeutic effects of 0.1% Adapalene loaded Nano-structured Lipid Carriers (NLC-ADA). This formulation had a great Entrapment efficiency (EE) that illustrated a controlled drug release profile. A pilot clinical evaluation conducted on 15 patients (age 25.23 ± 12.24 years) with mild to moderate acne vulgaris lesions. The results demonstrated significant reduction in acne severity index and the number of inflammatory and non-inflammatory lesions after 12 weeks of treatment (P-value 0.02, 0.04 and 0.01 respectively). Subjective results were confirmed with significant improvement in size and intensity of porphyrin production in pilosebaceous follicles (P-value = 0.03). The study demonstrated that the formulation was safe and revealed the proper improvement rate of acne lesions after 12 weeks.

Anti-acne vulgaris effects of chlorogenic acid by anti-inflammatory activity and lipogenesis inhibition. Luo J, He W, Li X, et al. Exp Dermatol. 2021 Jan 12. doi: 10.1111/exd.14277. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33433016/
Chlorogenic acid (CGA) exhibits substantial biological function in antioxidant, antibacterial, anti-lipogenesis, and anti-inflammatory activities. Increased sebum production and inflammation are considered important for the development of acne. However, the therapeutic effects of CGA on acne vulgaris remain unexplored. In this study, to assess the effects and underlying mechanisms of CGA on acne, a model of skin inflammation in ears of ICR mouse induced by living P. acnes was used. 24 hours after 1.0×107 CFU, P. acnes were intradermally injected into the ears of the ICR

mouse. 1, 5, and 10 mg of CGA mixed with vaseline were applied to the surface of the skin every 12 hours for 3 days. Then, skin inflammation in the ears was assessed and the change of SREBP1 and TNF-α expression was analyzed after CGA treatment. The mechanisms of CGA in anti-inflammatory activity and lipogenesis were also studied in primary sebocytes and HaCaT cells. We found that CGA treatment effectively rescued ear swelling, redness, and erythema skin in ears of ICR mouse induced by P. acnes and significantly downregulated the expression of inflammatory cytokines by reducing the activity of the NF-κB signaling pathway. Furthermore, CGA could inhibit lipogenesis at the protein secretion and transcription level by decreasing the AKT/mTOR/SREBP signaling pathway. Our findings suggest that CGA could become a potential alternative drug for the treatment of acne vulgaris.

Emulsions with alkyl polyglucosides as carriers for off-label topical spironolactone - safety and stability evaluation. Ilic D, Cvetkovic M, Tasic-Kostov M. Pharm Dev Technol. 2021 Jan 11;1-25. doi: 10.1080/10837450.2021.1874011. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33428486/

Androgens play an important role in the pathogenesis of acne. Being an anti-androgen drug with many side effects, spironolactone has recently been used in dermatology as a topical therapy for acne. Off-label drug use in dermatology is common, although those drugs are basically available as compounded formulations; the choice of a proper vehicle is often neglected in that case. Alkyl polyglucosides (APGs) are a FDA certified class of polyethylene glycol (PEG)-free surfactants produced from the renewable resources. Following the preformulation tests, two different APG emulsifiers were used in this study to stabilize emulsions as carriers for topical spironolactone. Assessment of the physical stability of emulsions per se and after the incorporation of 5% of spironolactone was performed using polarization microscopy, electrical conductivity and pH measurements. The skin irritation profile and moisturizing potential was assessed in vivo on human volunteers. APG-based emulsions per se and with 5% of spironolactone showed acceptable skin irritation profiles and significant potential for skin hydration, which is important in acne treatment. Good physical stability and satisfying preliminary safety profile of all investigated samples were also obtained showing that moisturizing APG-based emulsions could be promoted as vehicles for off-label topical spironolactone.

Iontophoresis mediated localized delivery of liposomal gold nanoparticles for photothermal and photodynamic therapy of acne. Alvi SB, Rajalakshmi PS, Jogdand A, et al. Biomater Sci. 2021 Jan 5. doi: 10.1039/d0bm01712d. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33398318/

Acne is one of the common dermatological skin inflammatory conditions. The current therapeutic modalities for the treatment of acne include the administration of antibiotics and anti-inflammatory agents. The rising instance of antibiotic resistance in acne strains has led to the exploration of alternative therapeutic modalities. In the current study, we have employed a liposomal gold nanoparticle entrapping curcumin (Au Lipos Cur NPs) for dual light-mediated therapy for the treatment of acne. These nanoparticles exerted a positive zeta potential that enabled their localized follicular delivery by iontophoresis. The localized deposition of Au Lipos NPs leads to photothermal transduction causing destruction of sebaceous glands. Furthermore, when the nanoparticles were assessed in vitro by sequential irradiation with NIR and blue light, it resulted in significant inhibition of bacterial growth. Thus the dual light-mediated therapy by Au Lipos Cur NPs can form a potential therapeutic modality for the efficient treatment of recurrent acne.

Serum Sp17 autoantibody serves as a potential specific biomarker in patients with SAPHO syndrome. You H, Dang G, Lu B, et al. J Clin Immunol. 2021 Jan 3. doi: 10.1007/s10875-020-00937-w. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33392854/

SAPHO (synovitis, acne, pustulosis, hyperostosis, and osteitis) syndrome shows a wide variability in musculoskeletal

and cutaneous manifestations, and it is therefore underrecognized and misdiagnosed in the clinic due to a lack of specific markers. In this study, we aimed to identify specific biomarkers by screening serum autoantibodies in SAPHO patients with a 17K human whole-proteome microarray. The serum anti-Sp17 autoantibody was identified and verified to be a specific biomarker in patients with SAPHO syndrome. Indeed, the level of the anti-Sp17 autoantibody was significantly increased in patients with active SAPHO compared to patients with an inactive disease and healthy controls ($P < 0.05$). Additionally, serum anti-Sp17 autoantibody levels correlated with those of serum hypersensitive C-reactive protein (hsCRP), the erythrocyte sedimentation rate (ESR), and β-crosslaps (β-CTx) in patients with active SAPHO disease. Moreover, anti-Sp17 autoantibody levels were markedly decreased after anti-inflammatory treatment with pamidronate disodium, which downregulated levels of hsCRP and ESR in patients with active SAPHO. Thus, serum levels of the anti-Sp17 autoantibody might serve as a specific biomarker for the diagnosis of SAPHO syndrome or for monitoring the disease status.
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Tripterygium wilfordii Hook F. in the treatment of synovitis, acne, pustulosis, hyperostosis, and osteitis syndrome: A clinical trial. Wang L, Gong L, Zhang X, et al. Clin Rheumatol. 2021 Jan 3. doi: 10.1007/s10067-020-05562-x. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33389313/
Objective: This study aimed to investigate the efficacy and safety of Tripterygium wilfordii Hook F. (TwHF) in the treatment of osteoarticular lesions in synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome. Methods: Eligible SAPHO patients were recruited to this single-center trial to receive 12-week TwHF treatment. Two dose groups (1.0-mg/kg/day group and 1.5-mg/kg/day group) were designed and patients were allocated (1:1) to these two groups. The primary endpoint was the change from baseline in Ankylosing Spondylitis Disease Activity Score on the basis of C-reactive protein level (ASDAS) at week 12. Results: All the 30 included patients completed the trial. At week 12, both dose groups showed significant change from baseline in ASDAS (1.0-mg/kg/day group: -1.34 (1.10), p = 0.000; 1.5-mg/kg/day group: - 1.53 (1.19), p = 0.000). Similar improvement was also found in the Visual Analogue Scale in global osteoarticular pain, Bath Ankylosing Spondylitis Disease Activity Index, and other efficacy measures. The results showed a fast-acting characteristic of TwHF that the maximum efficacy was achieved within the first 2-4 weeks and maintained at a stable level for the rest of the study. No significant differences were observed between the two dose groups under the current sample size. TwHF was well tolerated that no severe adverse events or irregular menstruation were recorded, except for one patient who developed severe alanine aminotransferase elevation at the last follow-up and has stopped the TwHF treatment after the 12-week follow-up. Conclusions: TwHF should be considered for the treatment of osteoarticular lesions in SAPHO syndrome in clinical practice because of significant efficacy, reliable safety, and high socioeconomic value. Trial registration: ChiCTR1900025912 Key points • This is the first clinical trial to evaluate Tripterygium wilfordii Hook F. (TwHF) in the treatment of synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome. • Twelve-week TwHF treatment in both dose groups designed (1.0-mg/kg/day group and 1.5-mg/kg/day group) was well tolerated and could lead to significant disease remission of SAPHO syndrome. • No significant differences were observed between the two dose groups under the current sample size. • TwHF should be considered for the treatment of osteoarticular lesions in SAPHO syndrome in clinical practice because of significant efficacy, reliable safety, and high socioeconomic value.

Increases in uric acid and monocyte-high density lipoprotein ratio as possible atherosclerotic indicators in acne patients using isotretinoin. Metin N, Turan Ç. J Cosmet Dermatol. 2021 Jan 2. doi: 10.1111/jocd.13931. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33387386/
Purpose: We aimed to reveal the relationship of serum uric acid (SUA) with monocyte-high-density lipoprotein ratio

(MHR) and other inflammatory markers acne patients before and after isotretinoin treatment. In this way, we can try to shed light on the relationship between isotretinoin treatment and atherosclerosis. Methods: Two hundred twenty-four acne patients who administered isotretinoin (0.5-1 mg/kg/day) were enrolled in the study. In the pre-treatment phase and 3 months after treatment, MHR, SUA, mean platelet volume, neutrophil-lymphocyte ratio (NLR), platelet-lymphocyte ratio, monocyte-lymphocyte ratio, serum triglyceride, total-cholesterol, high-density lipoprotein (HDL), and low-density lipoprotein (LDL) levels of the patients were analyzed. Results: Compared to the pre-treatment phase, three months after treatment, there was a statistically decrease in neutrophil count and an increase in lymphocyte count (p: 0.002, p: 0.011; respectively). Accordingly, there was a statistically significant decrease in NLR (p: 0.001). It was noteworthy that MHR and SUA levels increased significantly (p: 0.042, p: 0.010; respectively) and there was a positive correlation between SUA level and MHR (r: 0.212, p: 0.012). Serum total-cholesterol, LDL, and triglyceride levels increased and HDL levels decreased significantly after treatment (p: 0,001). Conclusion: This study contributes to the comprehension of the relationship between isotretinoin treatment and atherosclerosis, which has been frequently reported in the literature. It was thought that the isotretinoin-induced SUA increase might be related to dyslipidemia. Isotretinoin may initiate the atherosclerotic process in vascular endothelial and smooth muscles, with SUA increase and HDL decrease. An increase in MHR is also an inflammatory marker indicating this process.

The effects of myrtle (myrtus communis) and clindamycin topical solution in the treatment of mild to moderate acne vulgaris: A comparative split-face study. Salmanian M, Shirbeigi L, Hashem-Dabaghian F, et al. J Pharmacopuncture. 2020 Dec 31;23(4):220-229. doi: 10.3831/KPI.2020.23.4.220. https://pubmed.ncbi.nlm.nih.gov/33408898/

Objectives: Although Acne vulgaris is a chronic skin disease, which its standard treatment causes therapeutic limitations and some common adverse effects, medicinal plants can be effective in treatment with low adverse effects as combination therapy. Myrtle (Myrtus Communis) has some beneficial properties, which has been administered topically and orally for some skin diseases in Persian medicine. This study aimed to compare the efficacy and safety of Myrtle formula and 1% clindamycin topical solution. Methods: This was a split-face clinical trial that was done on 55 patients with mild to moderate acne vulgaris for 16 weeks. The patients received topical Myrtle solution to the right side of the face (group 1) and clindamycin solution to the left side (group 2) twice daily for 12 weeks. All participants were examined for the acne severity index (ASI) and total acne lesions counting (TLC) at certain times during the study. Then, they stopped using them for four weeks. They also did not take the drug in the final four weeks of the study. Results: Forty-eight patients completed the study for 16 weeks; 40 (83.2%) patients were female and the rest of them were male. The mean age and standard deviation were 25.62 ± 7.62 years. After 12 weeks, the percentage changes of comedones, inflammatory lesions, ASI and TLC were significantly reduced in both groups ($p < 0.001$). The percentage change of inflammatory lesions and ASI decrease was significantly higher in the group 1 ($p = 0.03$). There was no significant difference in the incidence of side effects between the two groups. There was a more significant decrease in sebum percentage change in the group 1 ($p = 0.003$). Conclusion: Myrtle lotion was effective and safe for the treatment of mild to moderate acne vulgaris.

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Self-nanoemulsion loaded with a combination of isotretinoin, an anti-acne drug, and quercetin: Preparation, optimization, and in vivo assessment. Hosny KM, Al Nahyah KS, Alhakamy NA. Pharmaceutics. 2020 Dec 30;13(1):E46. doi: 10.3390/pharmaceutics13010046. https://pubmed.ncbi.nlm.nih.gov/33396942/

Acne vulgaris is a common skin disease that affects everybody at least once in their lives. The treatment is challenging because the stratum corneum contains rigid corneocytes surrounded by intercellular lamellae that are difficult to bypass. In the present study, we intended to formulate an effective nanoemulsion that could deliver isotretinoin (ITT)

with enhanced solubility, permeability, and bioavailability across the skin. ITT can have a serious hepatotoxic effect if given too frequently or erratically. Therefore, to overcome the aforesaid limitation, quercetin (QRS), a hepatoprotective agent, was incorporated into the formulation. Initially, the ITT solubility was determined in various surfactants and cosurfactants to select the essential ingredients to be used in the formulation and to optimize a nanoemulsion that could enhance the solubility and permeability of ITT and its antimicrobial activity against Staphyloccocus aureus, which is the main microorganism responsible for acne vulgaris. The mixture design was applied to study the interactions and optimize the independent variables that could match the prerequisites of selected dependent responses. A formulation containing 0.25 g of rosehip oil, 0.45 g of surfactant (Lauroglycol-90), and 0.3 g of cosurfactant (propylene glycol) was chosen as an optimized desirable formulation. The optimized batch was loaded with QRS and evaluated for in vitro and ex vivo permeation. The in vivo hepatotoxicity was assessed through topical administration. Permeability studies confirmed the enhanced permeation percentage of ITT (52.11 ± 2.85%) and QRS (25.44 ± 3.18%) of the optimized formulation, with an enhanced steady-state flux (Jss). The in vivo studies conducted on experimental animals demonstrated superior hepatoprotective activity of the prepared optimized formulation compared with other formulations of drugs and commercially marketed products. We anticipate that this optimized ITT formulation, followed up with good clinical evaluations, can be a breakthrough in the safe treatment of acne vulgaris.

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Efficacy and tolerability of short contact therapy with tretinoin, clindamycin, and glycolic acid gel in acne: A randomized, controlled, assessor-blinded two-center trial: The MASCOTTE study. Bertolani MB, Rodighiero E, Gandolfi M, et al. Dermatol Ther. 2020 Dec 29;e14724. doi: 10.1111/dth.14724. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33377285/

Retinoids and antibiotics topical treatments are commonly used as first line therapy in mild to moderate acne. However, irritant contact dermatitis is a common side effect of topical retinoids. A strategy to increase local tolerability is the "short contact therapy" (SCT) approach, consisting in the application of the product with the complete removal after 30 to 60 minutes using a non-aggressive cleanser. A gel containing tretinoin 0.02%, clindamycin 0.8%, and glycolic acid 4% in polyvinyl alcohol (MP-gel) has shown to be effective as monotherapy in mild to moderate acne with a tolerability profile similar to other topical retinoids. So far, no trials have been performed with this gel comparing the tolerability profile of SCT with standard application therapy (SAT). We conducted a 2-center randomized parallel groups, controlled, assessor-blinded study, comparing MP-gel applied as SCT in comparison with MP-gel used as SAT (The "MASCOTTE" trial). Forty-six subjects (nine men and 37 women, mean age 23 ± 4 years, range 18-31 years) with mild-to-moderate acne were enrolled, after their written informed consent in a randomized, parallel groups controlled, assessor-blinded 8-week trial. Twenty-three were assigned to MP-gel once daily (evening application) using the SCT approach (ie, complete removal of product after 1 hour using a gentle cleanser), and 23 were randomized to the SAT approach with the same gel. The primary endpoint was the evolution of the tolerability score (TS) assessed evaluating four items: erythema, dryness, stinging, and burning, using a 4-point score scale (from 0: no symptom to 3: severe symptom). Secondary endpoints were the evolution of global acne grading system (GAGS) score (range: from 0 to >39) and the investigator global assessment (IGA of acne severity) score (range from 0 to 4). TS was evaluated at 2, 4, and 8 weeks. GAGS and IGA scores were evaluated at baseline and at week eight. At week eight, an efficacy global score (EGS) (from 1: no efficacy to 4: very good efficacy) and a tolerability global score (TGS) (from 1: very low tolerability to 3: very good tolerability) evaluation were also done. All the evaluations were performed by an investigator unaware of treatment groups allocation (SCT or SAT). Thirty-eight subjects (83%) completed the 8-week treatment period. Eight subjects (two in the SCT group and six in the SAT group) dropped out prematurely due to low skin tolerability. In the SCT the TS at week two was 1.3 ± 1.7, in the SAT group TS was significantly higher

(3.1 ± 1.7) (P = .028). TS was significantly lower in SCT group vs SAT also at weeks four and eight (P = .01; ANOVA test). The GAGS score at baseline was 19 ± 7 in the SCT group and 23 ± 4 in the SAT group (NS). At week 8 the GAGS score in SCT was significantly reduced to 8.5 ± 2.8 (-55%) (P = .001 vs baseline) and was also significantly lower in comparison with SAT group (8.5 vs 15; P = .0054). The IGA scores at baseline were 1.9 ± 0.6 in SCT and 2.4 ± 0.7 in SAT group. At week eight, in comparison with baseline values IGA score was reduced significantly by 48% in SCT and by 30% in SAT. EGS and TGS were significantly higher (better clinical efficacy and better tolerability) in SCT in comparison with SAT (3.6 ± 0.5 and 2.9 ± 0.3 vs 2.7 ± 0.6 and 1.5 ± 0.7; respectively). This tretinoin, clindamycin, glycolic acid gel, applied as SCT, has shown a better skin tolerability and at least a comparable clinical efficacy in comparison with the standard application modality in the treatment of mild-to-moderate acne. The SCT therefore could be an effective treatment strategy which could improve subjects' compliance and adherence.
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Contact sensitization to cosmetic series of allergens in female patients with rosacea: A prospective controlled study in China. Chen B, Yu F, Chen W, et al. J Cosmet Dermatol. 2020 Dec 22. doi: 10.1111/jocd.13902. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33350569/
Background: Allergic contact dermatitis to cosmetics (ACDC) complicates the diagnosis and treatment of rosacea and is increasingly observed in daily practice. Aims: The present study aimed to identify the contact allergens responsible for ACDC in Chinese female rosacea patients with or without suspected ACDC (SACDC). Methods: From a total of 1267 women with rosacea, 122 with SACDC, 145 without SACDC, and 100 age-matched healthy controls without rosacea or SACDC were examined on a voluntary basis. Skin patch tests with C-1000 cosmetic series (Chemotechnique Diagnostics, Malmo, Sweden) were conducted, including 20 selected allergens. Results: Positive allergic reaction was found in 85.2% and 33.8% of SACDC and non-SACDC (P < .001), respectively, and 27.0% of healthy volunteers. Most reactions occurred at day 3, and the majority of all the examinees including normal controls reacted to more than 1 allergen. In SACDC patients, leading allergens were ethylchloroisothiazolinone/methylisothiazolinone (28.7%), linalool hydroperoxide (27.1%), fragrance mix I (21.3%), methylisothiazolinone (17.2%), limonene hydroperoxides (16.4%), formaldehyde (14.8%), myroxylon pereirae (13.9%), and propolis (10.7%); the overall allergic reaction rate positively correlated with new onset of facial pruritus (P < .001). The occurrence of irritant contact reactions correlated with positive allergic reactions in rosacea patients with or without SACDC (P = .032 or P < .001, respectively). Conclusions: Preservatives and fragrances are primary culprits for ACDC in Chinese female rosacea patients. Patch testing should be considered in the suspected patients.

Transcriptome comparison of isotretinoin-effective and isotretinoin-ineffective severe acne vulgaris patients. Jiang Y, Zhang J, Guo H, et al. J Cosmet Dermatol. 2020 Dec 22. doi: 10.1111/jocd.13898. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33350071/
Background: Oral isotretinoin is the first-line treatment of severe nodular acne. However, patients presenting ineffective or poor effective to oral isotretinoin are still a clinical problem, and its molecular genetic mechanisms remain unclear. Aims: To compare the transcriptome profiles of isotretinoin-effective and isotretinoin-ineffective severe acne vulgaris patients and analyze the potential physiological roles to better understand the mechanisms of isotretinoin efficacy differences. Patients/methods: Peripheral blood of 43 patients with severe acne was collected before treatment. After 8-week isotretinoin, patients presented effective and ineffective to isotretinoin treatment were selected and their pretreatment peripheral blood was analyzed. High-throughput sequencing was used to detect gene expression profiles. Gene Ontology and KEGG were used to perform functional annotation and pathway enrichment analysis. Results: Ten acne patients (3 male and 7 female, age 31 ± 9.2) presented effectiveness by oral isotretinoin and 10 acne patients (4 male and 6 female, age 28 ± 7.7) presented ineffectiveness were included. Comparison of

gene profiles of isotretinoin-effective and isotretinoin-ineffective patients revealed 2779 differentially expressed genes: 2723 upregulated and 56 downregulated. Differentially expressed genes were enriched in RNA degradation pathway, autophagy pathway, protein ubiquitination pathway, protein processing in endoplasmic reticulum pathway, T-cell receptor signaling pathway, spliceosome pathway, mRNA surveillance pathway, cell cycle pathway, long-term potentiation pathway, and FoxO signaling pathway. Conclusion: Transcriptome expression differences not only participated in the acne pathogenesis, but also influenced the isotretinoin therapeutic effects. These findings might provide some evidence for exploring individualized therapy for acne patients.

Efficacy evaluation of Endolift-based subcision on acne scar treatment. Nilforoushzadeh MA, Fakhim T, Heidari-Kharaji M, et al. J Cosmet Dermatol. 2020 Dec 21. doi: 10.1111/jocd.13876. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33347682/

Background: People with acne scar suffer from destruction to the surface of the skin. Treating acne scars is a challenge that might need several methods. Aims: Subsection is a method that has been informed to be a useful method in treating rolling acne scars. While Subcision is a valued procedure, its effect is mild to moderate due to its high reappearance rate, and patients' dissatisfaction with some of the side effects such as inflammation after procedure. Patients/methods: In this pilot study, 9 rolling acne scar patients underwent Subcision with the Endolift (200-nm fiber) and followed up for 3 months. Outcomes were evaluated by 3 dermatologists (Blind). Also, the patients' satisfaction was assessed to compare with dermatologist's opinions. Results: Our results indicated that Subcision with the Endolift displayed good and very good improvement in about 90% of patient with a good and very good satisfaction in the patients. Photographic data evaluation indicated 100% improvement in scar depth, topography, and total acne scar appearance. The average numbers of lesions before the treatment were 25.5 ± 12.1, and after treatment, it was reduced to 11.4 ± 2.1 ($P < .05$). Conclusion: Subcision with the Endolift seems to be a safe and effective method for acne scar treatment. It is done with a single perforation on each side (instead of several perforations), which reduces the pain and scar risk in the patients. Also, Endolift-based Subcision needs fewer surgical sessions and less recovery time with less inflammation and erythema.

Evaluating depression among acne vulgaris patients treated with isotretinoin. Algamdi BN, ALdahlan HW, ALALhareth H, et al. Cureus. 2020 Dec 17;12(12):e12126. doi: 10.7759/cureus.12126. https://pubmed.ncbi.nlm.nih.gov/33364137/

Background: Isotretinoin is the most effective treatment for moderate to severe acne. However, isotretinoin has many side effects related to its use. Since 1983, when Hetzen reported the first occurrence of new depressive symptoms in patients treated with isotretinoin, a lot of controversies emerged regarding the causal relationship between isotretinoin and depression. Objective: To evaluate depression among acne patients treated with isotretinoin versus doxycycline at King Fahad Hospital of the University between December 2019-March 2020. Methods: Using the Global Acne Grading System, patients aged 18 - 30 years old with moderate to severe acne vulgaris who have not received isotretinoin previously and has no personal or family history of any psychiatric illnesses, were evaluated for depression using the patient health questionnaire-9 before starting treatment and 8 weeks after. Twenty-nine patients had met the inclusion criteria and were included in the study. Results: Of the 29 patients included, 18 patients completed the study (nine males, nine females). Twelve patients received isotretinoin 0.5mg/kg (study group) and six patients received doxycycline 100mg (control group). The mean depression score for the isotretinoin group has decreased from (4 ± 2.48) to (3.08 ± 2.84) but the result was statistically insignificant with a p-value of 0.19, CI (-5.28, 2.36). For the doxycycline group, the mean depression score has decreased from (5.5 ± 2.5) to (2.83 ± 0.75) with a p-value of 0.043, CI (0.12, 5.21). There was no statistically significant difference in the mean depression score between the two groups after 8 weeks of starting treatment [p-valve 0.837, CI (-2.28, 2.78)]. Conclusion: This study showed that, after

8 weeks of starting treatment, isotretinoin at 0.5 mg/kg has no risk of developing depression. The results of this study did not reveal a direct relationship between the use of isotretinoin and the development of depression. Furthermore, optimum control and treatment of acne vulgaris have shown to improve depression scores.
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Microencapsulated benzoyl peroxide and tretinoin for the treatment of acne vulgaris: Results from a phase 2 multicenter, double-blind, randomized, vehicle-controlled study. Webster GF, Sugarman J, Levy-Hacham O, Toledano O. Skinmed. 2020 Dec 1;18(6):343-351. eCollection 2020. https://pubmed.ncbi.nlm.nih.gov/33397563/
This phase 2, 12-week, multicenter, randomized, double-blind, active- and vehicle-controlled (VC), parallel-group trial assessed the efficacy and safety of silica encapsulated benzoyl peroxide BP (E-BP), two concentrations of silica encapsulated tretinoin (E-ATRA) and their combinations (TWIN high and low) vs VC in 726 males and females ≥9 years of age with moderate-to-severe inflammatory facial acne. The co-primary efficacy endpoints were Investigators Global Assessment (IGA) success rate ("clear" or "almost clear") and changes from baseline in inflammatory and non-inflammatory lesion counts. TWIN high and low were each significantly superior vs VC for IGA success at 12 weeks (39.7% and 27.4%, respectively, vs 12.3%, P < 0.001 and P < 0.01). TWIN high and low resulted in mean reductions in inflammatory lesions of -16.9 (64%) and -17.0 (60.8%) vs -11.5 (42%) for VC. Reductions in non-inflammatory lesions were -23.7 for TWIN low (54.9%) and -23.6 for TWIN high (53.3%) vs -13.7 (32.4%) for VC (all P < 0.001 vs VC). Results for TWIN were also numerically superior to E-BP and E-ATRA. All treatments were safe with comparable skin tolerability. The significant superiority of both combinations over VC and numerical superiority over E-BP and E-ATRA were achieved without an increase in adverse events or reduced skin tolerability.

Clinical Reviews

Long-term use of spironolactone for acne in women: A case series of 403 patients. Garg V, Choi JK, James WD, Barbieri JS. J Am Acad Dermatol. 2021 Jan 9;S0190-9622(21)00090-6. doi: 10.1016/j.jaad.2020.12.071. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33434594/
Background: There is limited data regarding the long-term outcomes of spironolactone use for women with acne and its effect on truncal acne. Objective: To comprehensively describe outcomes of patients treated with spironolactone in routine clinical practice, including long-term outcomes. Methods: We performed a retrospective case series of 403 adult women treated for acne with spironolactone at an academic medical center between 2008 and 2019. Rates of objective, as assessed by Comprehensive Acne Severity Scale (CASS) scores, and subjective acne clearance were evaluated, as well as rates of treatment discontinuation, dosage changes, and drug survival. Logistic regression was used to assess for association between incidence of menstrual side effects and combined oral contraceptive use. Results: As evaluated by CASS scores, at the first follow up, 75.5%, 84.0%, and 80.2% of patients with available data had reduction or complete clearance of acne on the face, chest, and back, respectively. The mean drug survival was 470.7 days. Menstrual side effects were less common among those using combined oral contraception (OR 0.23; 95% CI 0.11-0.50). Limitations: This study was conducted at a single academic medical center. Conclusion: Spironolactone improves clinical outcomes and is and well tolerated for many adult women with acne using it for an extended duration.
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New acne therapies and updates on use of spironolactone and isotretinoin: A narrative review. Han JJ, Faletsky A, Barbieri JS, Mostaghimi A. Dermatol Ther (Heidelb). 2021 Jan 6. doi: 10.1007/s13555-020-00481-w. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33409936/

Acne vulgaris is a chronic inflammatory skin disease with a multifactorial pathogenesis. Although a variety of acne treatments are available, limitations of current therapies include tolerability, antimicrobial resistance, and costs and patient burden associated with monitoring. This narrative review focuses on emerging treatments and updates on the management of acne. Clascoterone, sarecycline, trifarotene, and novel lotion formulations of tretinoin and tazarotene have been evaluated in clinical trials and provide new options for treatment. Emerging data on the safety and efficacy of spironolactone and isotretinoin challenge current conventions and suggest a need to reconsider drug monitoring guidelines and risk prevention systems. Additional head-to-head data are needed to confirm these novel treatments' utility in treating acne.

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Laser and light-based therapies in the management of rosacea: An updated systematic review. Husein-ElAhmed H, Steinhoff M. Lasers Med Sci. 2021 Jan 3. doi: 10.1007/s10103-020-03200-1. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33389310/

Unlike other rosacea therapies which need daily takings or applications over long periods, the edge of lasers and light-based therapies (LLBT) is the limited number of sessions to achieve improvement. The proper selection of the adequate physical device in accordance with the patients' skin features and rosacea-related signs and symptoms should be considered and the management with physical sources should be updated as new data become available. This article reviews and discusses the current use of lasers and light-based therapies in rosacea with reference to all the available literature. This systematic review demonstrates the quality of evidence to support any recommendation on LLBT in rosacea is low-to-moderate. Among all the available devices, PDL holds the most robust evidence. Treatments options should be tailored for each specific clinical scenario as it is unlike that single modality results in complete resolution. Platforms that include two or more devices and combined therapies with topical agents are suitable and they warrant further investigations.

Analyzing the efficacy of isotretinoin in treating dissecting cellulitis: A literature review and meta-analysis. Guo W, Zhu C, Stevens G, Silverstein D. Drugs R D. 2021 Jan 2. doi: 10.1007/s40268-020-00335-y. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33387328/

Background and objective: Dissecting cellulitis of the scalp is a primary scarring alopecia. Isotretinoin is commonly referenced in the literature as a treatment for dissecting cellulitis. The objective of this article was to conduct a review and meta-analysis to assess the efficacy of isotretinoin for treating dissecting cellulitis of the scalp. Methods: The following databases were searched for articles prior to 23 June 2019: PubMed, Embase, Cochrane Central, CINAHL, and Web of Science. Multi-patient studies (more than three) that reported on the administration of isotretinoin for dissecting cellulitis were included. A pooled meta-analysis for improvement of disease burden after isotretinoin administration in patients with dissecting cellulitis of the scalp was performed. A fixed-effects model was used. Results: Five articles were ultimately used for the quantitative meta-analysis. The overall efficacy rate of isotretinoin in treating dissecting cellulitis of the scalp was estimated to be 0.9 with a 95% confidence interval (0.81-0.97). The sensitivity analysis suggested that the overall efficacy is still very high, with a range of 0.83-0.94. Recurrence was seen in 24% (6/25) of patients. Common associated diseases amongst patients with dissecting cellulitis of the scalp were acne conglobata 20% (30/151) and hidradenitis suppurativa 19% (11/72). Conclusions: Isotretinoin is an effective treatment for improving symptoms of dissecting cellulitis of the scalp. Disease recurrence is a common finding for those who undergo successful treatment.

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Treatment of acne and acne-related scarring with fixed combination clindamycin phosphate and benzoyl peroxide gel (1.2%/3.75%) and tretinoin gel microsphere 0.06% in an Asian American transgender female. Kaminska EC. SAGE Open Med Case Rep. 2020 Dec 29;8:2050313X20984038. doi: 10.1177/2050313X20984038. eCollection 2020. https://pubmed.ncbi.nlm.nih.gov/33447388/

Acne vulgaris is one of the most common skin diseases in the United States and can affect any gender or ethnic group. Post-inflammatory hyperpigmentation (PIH) and scarring from acne can have a negative psychosocial impact on patients. Skin of color patients are particularly prone to PIH, as the dark marks left from acne may take several months to resolve, far after the acne has cleared. Here, we report a case of moderate acne with associated scarring in a transgender, Asian American female who was successfully treated with fixed combination topical therapy with clindamycin phosphate and benzoyl peroxide gel 1.2%/3.75% and tretinoin gel microsphere 0.06%.

Benefits of fractional radiofrequency treatment in patients with atrophic acne scars - literature review. Cucu C, Butacu AI, Niculae BD, Tiplica GS. J Cosmet Dermatol. 2020 Dec 23. doi: 10.1111/jocd.13900. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/33355993/

Objective: Acne scars carry a huge physical and psychological impact on people. This article aims to evaluate the role of fractional radiotherapy in treatment of atrophic acne scars. The main objective includes providing an up-to-date review of existing literature, presenting the most significant studies conducted in this field. Methods: In order to study the impact of fractional radiotherapy on the appearance of atrophic acne scars, we conducted a search on Pubmed using the keywords "fractional radiotherapy", combined with/or "acne", "atrophic acne scars" and "acne scars" and found 75 papers, from which we selected 39. Results: There are several therapeutic approaches for the improvement of acne scars with variable results and possible side effects. Fractional radiofrequency system has been used widely in the last years, as it turned out to be an effective treatment method, either in combination with other modalities, or alone. Conclusion: There are no generalized clinical guidelines adopted to standardize atrophic acne scar treatment. The multiple therapeutic options available create a dilemma in choosing the proper method in order to enhance its efficacy and to minimize its risks. The accumulated experience in nonablative collagen stimulating devices like fractional radiofrequency has proven that thickening of interstitial fibers in the dermis is possible with a controlled thermal injury, without epidermal damage and development of side effects.

Microneedling for the treatment of scars: An update for clinicians. Juhasz MLW, Cohen JL. Clin Cosmet Investig Dermatol. 2020 Dec 22;13:997-1003. doi: 10.2147/CCID.S267192. eCollection 2020. https://pubmed.ncbi.nlm.nih.gov/33376377/

Background: Microneedling (MN) is used for the treatment of scars, amongst other indications. Although used in Asia and the Middle East for decades, related to the supposed lack of post-procedure pigmentary alterations even in darker skin types, MN only recently gained attention in the United States as an effective, well-tolerated aesthetic treatment. Materials and methods: A systematic review of the Medline database was completed using search terms "microneedle" or "microneedling" or "micro needle" or "micro needling" and "scar". Included articles were written in English and discussed the use of MN for the treatment of scars in human subjects. Results: Fifty-eight studies were included for review, with a total of 1845 patients treated for acne scarring, hypertrophic or keloid scars, and those resulting from surgery, trauma, varicella or smallpox. MN and its counterpart fractional radiofrequency MN (FRF-MN) were used as monotherapy or in combination with topical, surgical or systemic modalities. MN and FRF-MN treatment resulted in clinical improvement of scar appearance from baseline. No serious adverse events occurred. Conclusion: MN is a well-tolerated, minimally invasive procedure that can be used for the treatment of scars with a high level of patient satisfaction. Further clinical studies are needed to develop standardized treatment protocols.

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Recent advances in hidradenitis suppurativa in pediatrics. Rundle CW, Price KN, Hogeling M, et al. Dermatol Online J. 2020 Dec 15;26(12):13030/qt5gt6m9n3. https://pubmed.ncbi.nlm.nih.gov/33423411/

Hidradenitis suppurativa (HS) is a chronic inflammatory skin condition that can cause significant physical, mental, and socioeconomic burden. There remains a paucity of literature on HS in the pediatric population. This systematic review highlights recent advances in pediatric HS in epidemiology, presentation, comorbidities, and management. PubMed, Embase, Google Scholar, and Clinicaltrials.gov databases were used to identify trials and articles published on HS in pediatric patients between January 2015 and October 2019. A total of 39 articles were included. Current evidence suggests that pediatric onset HS may be associated with genetic factors along with endocrine and metabolic abnormalities. Delayed diagnosis in children with HS contributes to poor outcomes. Overall, children and adults with HS share similar lesion types and involved areas. Pediatric HS is associated with a number of comorbid conditions including acne, obesity, inflammatory joint disease, Down syndrome, inflammatory bowel disease, and diabetes. There are currently no pediatric treatment guidelines. Adalimumab is approved for the treatment of moderate-to-severe HS in children 12 and older. Other targeted immunomodulators and hormonal modulators are under investigation. Although the number of studies concerning HS are increasing, further investigation is warranted to better characterize HS, facilitate early diagnosis, and determine the best management for children.

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Acne fulminans induced by a low dose isotretinoin: Case report and review of the literature. Fakih A, Goens J, Grozdev I, et al. Dermatol Online J. 2020 Dec 15;26(12):13030/qt14h2419w. https://pubmed.ncbi.nlm.nih.gov/33423422/

Acne fulminans is a rare complication of classic acne. Less than 200 cases have been reported. It usually affects adolescent males with pre-existing acne vulgaris. It is characterized by an acute eruption of numerous and large inflammatory nodules, plaques, erosions, and ulcers covered by hemorrhagic crusts. The disorder may occur spontaneously or may be triggered by isotretinoin. We report a young boy who developed acne fulminans after isotretinoin therapy at a dose of 0.1mg/kg/day. A systematic literature review gathering previously reported cases on PubMed revealed that one similar case has been reported. Regarding therapeutic strategies, there are no randomized clinical trials to identify the best treatment for acne fulminans. Recommendations are based on case series and case reports. We share this case to raise awareness of the induction of acne fulminans by a very low dose of isotretinoin.

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