denoting acne lesions before treatment, it showed a reduction in all kinds of lesions on the ALA-treated side (p<0.05), however, there was only a reduction of pustules and total lesion counts on the control side (P<0.05).

Conclusions: Both 5%ALA-PDT and red light alone can be effective in the treatment of acne. The effective rate and efficacy analysis of 5%ALA-PDT was superior to using red light alone. The adverse effects of 5%ALA-PDT were mild or moderate.

MFS 10-2
Blue Light and Other Adjunctive Therapy in the Treatment of Acne Vulgaris

Rongya YANG

MFS 10-3
Light Treatment for Acne

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Acne, originating from pilosebaceous units, is a chronic inflammatory disorder, known to be caused by excessive production of sebum, abnormal exfoliation of follicular epithelium, and Propionibacterium acne. The treatment regimen has included oral agents such as antibiotics and isotretinoin and variety of topical agents, but the use has been limited due to the possible rise of antibiotic tolerance and drug side effects. Recently, there are ongoing researches on therapies using laser or light for better compliance and sustained therapeutic effects, and blue and red light, pulsed dye laser and diode laser have been applied in practice and are being tested for their efficiency.

When exposed to certain wavelength of light, the endogenous photosensitizer coproporphyrin III and protoporphyrin IX from P. acne produce reactive oxygen, destroying P. acne and thereby improving symptoms. Using this principle, there is a variety of ways to treat acne using different light sources. Also, the 532-nm potassium titanyl phosphate laser, 585- and 595-nm pulsed dye lasers, 1450-nm diode laser, and 1540-nm erbium glass laser have been used with variable efficacy. An evolving understanding of laser-tissue interactions involving Propionibacterium acne-produced porphyrins, and the development of infrared nonablative lasers to target sebaceous glands, has lead to the development of an escalating number of laser, light and radiofrequency devices for acne. Used as monotherapy or in combination, these devices are showing promise as a method to clear acne in a convenient, non-invasive manner, though there remains a clear need for long-term data and randomized, blinded studies.

KEYWORDS: Acne vulgaris, Laser therapy, Light therapy

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Acne vulgaris is a very common skin disorder and various treatments, including topical antibiotics, isotretinoin, and oral antibiotics, are used to manage the skin condition. A new targeted phototherapy, however, has emerged as an alternative treatment for acne vulgaris. Among the current phototherapies, blue light phototherapy has a marked effect on inflammatory acne lesions. Blue light (visible light in the blue spectrum, 405-420 nm) induces a photodestructive effect on Propionibacterium acne (P. acne). P. acne produces porphyrin, mainly coproporphyrin III, which has an absorption spectrum peak at 415 nm. In vitro irradiation of P. acne colonies with blue light leads to photodestruction of endogenous bacterial porphyrins, singlet oxygen production, and subsequent bacterial destruction. There are many reports of the beneficial effects of blue light phototherapy for acne. Based on these reports, there is sufficient evidence to justify the use of blue light for treating acne vulgaris. The demand for blue light phototherapy is increasing because of its effect on acne clearance without the risk and side effects induced by topical isotretinoin or oral antibiotics. Blue light phototherapy for acne is expected to gain popularity.

Lasers and other light-based devices are also possible treatment modalities for acne vulgaris. UVA and UVB irradiation effectively kill P. acne, subsequently improving acne. A high-intensity, enhanced, and narrow-band blue light has beneficial effects for the treatment of acne and decreases the risk for UV-induced photocarcinogenesis compared to UVA or UVB phototherapy. The effect of irradiation with a combination of blue and red visible light is superior to that with blue light alone or blue light combined with 5% benzoyl peroxide. Photodynamic therapy (PDT) with 5-aminolevulinic acid (ALA) is also effective against acne. The biologic mechanisms underlying the effects of PDT with ALA are similar to those of blue light phototherapy in that they selectively induce porphyrin fluorescence in the pilosebaceous units. Despite the excellent therapeutic outcome, PDT has significant side effects. Although both blue light phototherapy and PDT target P. acne, the 1450-nm diode laser seems to also affect sebaceous glands and subsequently reduces sebum production. The 1450-nm diode laser produces superior therapeutic improvement, including long-term remission, compared with other phototherapies for acne. In rare cases, however, there are some adverse effects, such as burning pain, burns, and post-inflammatory pigmentation. Local anesthesia (lidocaine cream, lidocaine tape, etc.) is commonly used to relieve the pain. Low-energy double-pass 1450-nm diode laser treatment is an alternative irradiation method to eliminate or reduce the pain that some patients suffer with 1450-nm laser treatment. We evaluated the efficacy and advantage of low-energy double-pass 1450-nm diode laser therapy for the treatment of facial acne in Japanese patients.

KEYWORDS: acne, blue light, diode laser, photodynamic therapy

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S 4. Recent Advances in Psoriasis

S 4-1
The Genetic Basis for the Association of HLA-Cw*0602 with Psoriasis

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Psoriasis which occurs pathological events in both the epidermis and dermis is a multifactorial disease with the prevalence of 0.05% to 0.1% in Japan. This figure is much lower than those (2-3%) in Caucasians. However, HLA-Cw6 within a cluster of candidate genes known as PSORS1 on chromosome 6p21 is a commonly heritable risk marker among different ethnic populations, including the Japanese. We previously reported association between HLA-Cw*0602 and killer cell immunoglobin-like receptor (KIR) in psoriasis. The patterns of combination between HLA and KIR can contribute to the disturbed events at immunocyte levels. The vitamin D receptor (VDR) which is one of the ligand-dependent transcription factors is known to regulate the expression of target genes via 1,25-dihydroxyvitamin D₃ [1,25-(OH)₂D₃] ligand. VDR gene belongs to a superfamily of genes which encode receptors for the retinoic acid, thyroid, and steroid hormones. Previously Park B-S et al. reported an increased frequency of A allele by Apal restriction fragment length polymorphism (RFLP) in the Korean psoriasis.

In the present study, we examined RFLP analyzed by Apal and FokI enzymes, using both Japanese and Korean patients with psoriasis. A tendency of increase in the frequency of the A allele by Apal RFLP was also observed in both of the patient groups. The current data concerning VDR gene were based on the cooperative study with Professor Youn J-I. of Seoul National University. So it is possible that allelic variants of VDR shared by the East Oriental populations are associated with psoriasis but do not determine disease response to vitamin D₃.

The expression of VDR gene is upregulated by coiled-coil a-helical rod protein (CCHCR1) gene which is located within PSORS1. CCHCR1 gene itself shows allelic variants, as shown by several investigators. In conclusion, there is the possibility that HLA-Cw*0602 might control the predisposing susceptibility to psoriasis by pleiotropic effects through the complex processes by HLA-KIR and/or HLA-HCR.

KEYWORDS: Psoriasis, Immune Response, Genetic Polymorphism

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S 4-2
Regulatory T Cells in Psoriasis

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T lymphocytes play a central role in the pathogenesis of psoriasis. Recently, CD4⁺CD25⁺high/regulatory T cells (Tregs) were found to suppress the autoimmune reactions and are deficient in the skin lesions and in the peripheral blood of psoriatic patients. The purpose of this study was to evaluate the changes of Tregs in psoriasis related to the clinical course, and to investigate the role of Tregs in the pathogenesis of psoriasis. Immunohistochemistry was performed on the skin biopsy samples of 22 patients with psoriasis compared with normal control subjects using primary antibodies for CD3, CD4, CD8, CD30, CD79, cutaneous lymphocyte antigen (CLA), T-cell intracellular antigen-1 (TIA-1) and FOXP3. Flow cytometry using primary antibodies for CD4, CD8, CD25, and FOXP3, and reverse transcriptase polymerase chain reaction for foxp3 mRNA were performed in the peripheral blood mononuclear cells of 18 psoriatic patients and 8 normal volunteers. In results, FOXP3⁺ cell fraction was increased in the lesional skin of psoriasis irrespective of the psoriasis severity compared with the normal skin. However, the skin lesions obtained from psoriasis of acute course (acute exacerbating) had decreased FOXP3⁺ cells. FOXP3⁺ Treg populations in the blood of the acute course' psoriasis was not different compared with those of chronic course' psoriasis and normal controls. In conclusion, the deficiency of FOXP3⁺ Tregs in the lesional skin may be responsible for the initiation or exacerbation of psoriasis.

KEYWORDS: regulatory T cells (Tregs), psoriasis, FOXP3, CD25

S 4-3
Quality of Life Impairment and Medication Adherence Considerations in Patients with Psoriasis

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The effects of psoriasis on patients are multidimensional, including the physical, psychological, and social health of the individuals, and are largely based on the patients' perception of their clinical conditions. Clinical severities as assessed by Body Surface Area affected (BSA), the Psoriasis Area and Severity Index (PASI) and the duration of psoriasis do not reflect the impairment evaluated by several quality of life measures. Indeed, it has been recognized over years that psoriasis affects patients' lives in many ways and patients with psoriasis often ascribe substantial negative effects on their quality of life and the psoriasis treatments. The negative psychosocial effects of psoriasis on patients are profound, possibly resulting in considerable stigmatization, social isolation and discrimination. As a consequence, majority of patients are frustrated with the management of their psoriasis and by the perceived ineffectiveness of their treatments. Particularly, time-consuming and troublesome application of topical treatments and the potential adverse effects of systemic therapies lead many patients to believe that medical intervention is of limited value, leading to poor medical compliance. Medication compliance (adherence) is an important issue in assessing the effectiveness of the therapy. Adherence in health care is defined as the extent to which a person's behavior coincides with medical health-related advice and includes the ability of the patient to follow the physician's guidance of the directions of medication, lifestyle changes and so on. And, it is well known in psoriasis that the treatment effectiveness is limited by poor treatment adherence mainly related to the psychological status and the degree of quality of life impairment.

S 4-4
New and Promising Scalp Gel for Scalp Psoriasis

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There is a need for new treatments for scalp psoriasis, as many topical treatments are cosmetically unacceptable and difficult to apply, resulting in poor compliance. Recently a study was performed to compare the efficacy
and safety of a new, once-daily, two-compound scalp formulation containing calcipotriol 50 mcg g⁻¹ plus betamethasone 0.5 mg g⁻¹ (as dipropionate), with the active ingredients as single compounds in the same vehicle. This 8-week, multicentre, double-blind, parallel-group study, randomized adult patients with scalp psoriasis involving >10% of the scalp to the two-compound scalp formulation (n=568), betamethasone dipropionate 0.5 mg g⁻¹ (n=563), or calcipotriol 50 mcg g⁻¹ (n=286).

The proportion of patients with ‘absence of disease’ or ‘very mild disease’ at week 8 was significantly higher in the two-compound group (68.4%) than the betamethasone dipropionate (61.0%, P= 0.0079) or calcipotriol (43.4%, P=0.0001) groups. The proportion of patients rating their scalp psoriasis as ‘clear’ was significantly higher for the two-compound scalp formulation (69.6%) than for betamethasone dipropionate (59.9%, P=0.0006) or calcipotriol (44.7%, P<0.0001). The incidence of lesional/perilesional adverse events was lower in the two-compound and betamethasone dipropionate groups than the calcipotriol group.

The two compound scalp formulation was well tolerated and more effective in the treatment of scalp psoriasis than either of its individual components in the same vehicle.

KEYWORDS: betamethasone, calcipotriol, psoriasis, scalp, trial.
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S 4.5
Recent Advances in Psoriasis-The Asian Perspective
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Psoriasis is a common skin disease in Asia. The absence of a curative treatment for the disease provides many opportunities for the continued popularity of traditional and unorthodox therapies among the Asian patient. The recent introduction of biologic treatment for psoriasis in the Asian market is a milestone in boosting the credibility of evidence-based treatment. However the overriding cost factor makes it unlikely in the short-term to have any significant impact in altering the patients’ perception of the disease and its treatment.

KEYWORDS: Psoriasis, Biologic treatment, Overriding Cost factor
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S 5. Dermatopathology: Southeast Asian Forum

S 5.1
Non-Tender Rhinofacial Mass in a Healthy Male
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Clinical History: A 42 year old apparently healthy male bank collector presented with a 6 month history of an ill-defined, firm, movable, non-tender, erythematous, edematous, 10x7.5 cm mass involving the left & right naso-maxillary areas, nasal bridge & forehead. Accompanying symptoms were intermittent left frontal headache, nasal stuffiness, rhinorrhea, itching, tearing and foreign body sensation of the left eye. Paranasal sinus X-ray showed a nasal polyp. CT-scan showed an enlarging mass at the left maxillary sinus.

Key Microscopic Features:
A: Diffuse granulomatous inflammation
B: Broad, thin-walled hyphae showing eosinophilic sheath consistent with Splendore-Hoeppli phenomenon with branching at irregular angles & intervals, some with collapsed or twisted walls.
C: Hyphae positive with periodic acid Schiff (PAS) and Gomori methenamine silver (GMS)
D: Without infarction or vascular invasion.

Diagnosis: RHINOFACIAL ZYGOMYCOSIS

Discussion: The broad or wide ribbon-like asperriform hyphae are the key features associated with zygomycosis. There are two orders of Zygomycetes organism that cause human disease, the Mucorales and the Entomophthorales. Majority of the cases is caused by the Mucorales that generally affect immunocompromised hosts and usually present with subcutaneous and systemic zygomycosis. The Entomophthorales consisting of the genera, Basidiobolus and Conidiobolus are less common causes of human zygomycosis, presenting with chronic, slowly progressive infections which are generally restricted to the subcutaneous tissue in otherwise healthy individuals. Other characteristic features that differentiate these infections from those caused by the Mucorales are the (a) lack of vascular invasion or infarction and (b) production of prolific inflammatory response often presenting with an eosinophilic sheath surrounding the hyphae, known as the Splendore-Hoeppli phenomenon. The infections caused by the Basidiobolus species usually affect the limbs, chest, back or buttocks of children and present as massive, firm, indurated, painless swelling which are freely movable from the underlying muscle. The zygomycosis caused by the Conidiobolus species are typically restricted to the nasal submu cosa, and usually presents as subcutaneous masses or polyps with progressive facial swelling. Symptoms of nasal obstruction, drainage and sinus pain may also be observed.

References: