

Abstract N°: 210**Risk of Nonmelanoma Skin Cancers and Cutaneous Melanoma after Psoralen-UVA Therapy in Psoriasis Patients: A Nationwide Cohort Study**Mei-Ju Ko*¹, Ping-Hsiu Tsai², Hon-Yen Wu²¹Taipei City Hospital, Dermatology, Taipei, Taiwan, ²Far Eastern Memorial Hospital, Internal Medicine, New Taipei City, Taiwan**Introduction & Objectives:**

PUVA phototherapy is associated with an increased risk of nonmelanoma skin cancers and cutaneous melanoma in Caucasian populations. However, there is a scarcity of data concerning the safety of PUVA therapy in non-Caucasian populations. The study aims to assess the risk of nonmelanoma skin cancer and cutaneous melanoma among psoriasis patients receiving PUVA phototherapy with Asian Fitzpatrick skin phototypes II to V.

Materials & Methods:

Data for this study were acquired and linked from three primary sources: the National Health Insurance (NHI) of Taiwan, the Taiwan Cancer Registry (TCR), and the national death registry of Taiwan. We conducted a nationwide Taiwanese cohort study spanning from 2001 to 2018 to assess the risk of PUVA phototherapy in relation to nonmelanoma skin cancer and cutaneous melanoma in psoriasis patients. The primary outcomes of this study were the occurrence of NMSC and cutaneous melanoma from the index date until the end of the study on December 31, 2018. Univariate and multivariate Cox proportional hazards models were used to assess the hazard ratio regarding two independent variables: (1) whether PUVA phototherapy was received or (2) the number of PUVA phototherapy sessions in relation to the risk of NMSC and cutaneous melanoma. Covariates were considered in an age- and sex-adjusted model as well as a multivariate model, adjusted for age, sex, CCI score, type of medical facility, outdoor occupation, high UV index, history of UVB phototherapy and prescriptions of hydrochlorothiazide, immunosuppressant drugs, or acitretin.

Results:

Among 13,245 psoriatic patients, PUVA phototherapy was associated with an increased risk of nonmelanoma skin cancer (adjusted HR, 1.55; 95% CI, 1.03-2.32, P=0.03). The association remained consistent when considering the number of PUVA phototherapy sessions (adjusted HR, 1.006; 95% CI, 1.004-1.009, P<0.0001). Notably, neither PUVA phototherapy nor the number of PUVA phototherapy sessions revealed an increased risk of cutaneous melanoma (adjusted HR, 0.90; 95% CI, 0.24-3.42, P=0.87; adjusted HR, 1.000; 95% CI, 0.977-1.023, P=0.994, respectively).

Conclusion:

This study found that PUVA therapy was associated with an increased risk of nonmelanoma skin cancer but not melanoma. For psoriasis patients who have received PUVA phototherapy, regular follow-up skin examinations are suggested.

Abstract N°: 993

Comparison of the efficacy of topical narrow-band UVB (311) ultraviolet radiation and topical psoralen with UVA phototherapy in localized vitiligo

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Comparison of the efficacy of topical narrow-band UVB (311) ultraviolet radiation and topical psoralen with UVA phototherapy in localized vitiligo

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Introduction & Objectives: : Vitiligo is a determined melanocytopenia characterized by depigmentation, in which skin patches lose brightness due to a lack of melanin. Phototherapy is one of the available therapeutic methods. The distal limb presents the greatest challenge in therapy.** To compare the effectiveness of targeted narrowband UVB (311) ultraviolet radiation and topical psoralen with targeted UVA phototherapy for localized vitiligo.

Materials & Methods: The study comprised 20 participants who had symmetrical vitiligo foci on their hands. On one side was targeted narrowband UVB (311) ultraviolet radiation, while on the other was topical psoralen combined with targeted UVA phototherapy. All lesions were treated with the same regimen during 36 sessions. Repigmentation was assessed using the Vitiligo Area Scoring Index (VASI). Twenty patients with localized vitiligo on their hands were included in the study.

Results: : There were six (30%) females and fourteen (70%) males aged 16 to 66. 50 symmetrical vitiligo lesions (20 left and 20 right) on the hands. Following 36 sessions, a considerably decreased VASI score and enhanced repigmentation rate were observed. An excellent repigmentation response was reported in 26.7% and 23.4% of patients in the UVB and PUVA groups, respectively, with no significant difference in repigmentation rate between the two groups.

Conclusion: By the conclusion of the third month, both targeted UVB phototherapy (311), and topical psoralen combined with targeted UVA phototherapy, had resulted in repigmentation of localized vitiligo on the hands. Our study found that both therapies are safe and offer repigmentation with a limited response; nevertheless, a bigger examination of patients is required.



Abstract N°: 1079**Successful topical 5-aminolevulinic acid photodynamic therapy in the treatment of resistant, multiple palmar warts - two clinical cases with general evidence analysis**

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Introduction & Objectives:

Palmoplantar warts are common, benign skin disease caused by human papillomaviruses (HPV).

Photodynamic therapy (PDT) uses a photosensitizer (5-aminolevulinic acid, 5-ALA) absorbed by infected cells and a source of light, which excites the photosensitizer, resulting in production of reactive oxygen species that cause cytotoxic effect. The authors present 2 cases in which 5-ALA PDT was successfully used to treat resistant, multiple palmoplantar warts, as well as general evidence on this method efficacy.

Materials & Methods:

28-year old man with multiple (>20) verrucae on eight fingers in the periungual area and a 51-year old woman with >25 lesions present on the both hands were referred to the dermatology clinic after unsuccessful, multiple treatments by curettage, cryotherapy with liquid nitrogen, topical salicylic acid and 5-fluorouracil with no clinical improvement observed. Patients have been qualified for 5-ALA PDT. After 3 hour of 10% topical 5-ALA solution incubation, they underwent 15-minute red light lamp (635nm) exposure. The male patient had 3 sessions, while the female patient had 2 PDT sessions in 30 days intervals. Also, the authors conducted research in PubMed database on 5-ALA PDT in palmar verrucae treatment; searching was as broad as possible from the inception of the database until January 2024, including Emtree and Mesh approaches, conducted according to the PRISMA guidelines.

Results:

Both of the patients experienced full clinical remission. Reported side effects included temporary pain, swelling and redness in the regions where 5-ALA was applied, lasting up to 7 days after each session. The provided result remains consistent with evidence obtained from data extracted from PubMed database.

Conclusion:

In cases of multiple, resistant palmar warts, 5-ALA PDT may be an effective and safe treatment method, exhibiting few side effects.

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Abstract N°: 1161**The condition of skin microbiota in patients with psoriasis is affected by the use of NB UVB**

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Introduction & Objectives: Psoriasis is related to the systemic diseases characterised by a complex of mutually conditioned pathogenetic links (immune, neuro-endocrine, infectious, etc.). Microbiocenosis of both healthy and pathologically altered skin can serve the point to assess the health of macroorganism. In chronic dermatoses a qualitative and quantitative change in skin microbial associations is observed.

Changes in macroorganism are reflected in disorders of microbial landscape of all skin topographic zones. It should be noted, that the study of microbial skin flora in psoriatic patients is episodic and unstructured. Despite loads of suggested methods and therapeutic means used to treat psoriatic patients, their efficacy remains not high due to the uncertainty of aetiology, disease pathogenesis multi-factority and polymorphism of clinical manifestations. The purpose of our study was to study changes in microbial flora of psoriatic patients skin under NB UVB application.

Materials & Methods: Procedures were conducted 3-4 times a week. The initial dose was 0.1-0.25 J/cm² depending on the skin phototype. At each subsequent procedure the dose of irradiation was increased by 0.05-0.1 J/cm². Skin microflora was examined by taking smears from affected areas in 34 patients staying under observation. Our control group consisted of 21 healthy individuals. The material was sampled using replica method followed by a microbiological identification of microorganisms.

Results: Microbiological study of skin microflora taken from affected areas in psoriatic patients made it possible to ascertain the prevalence of *S. aureus*, *S. epidermidis*, *S. saprophyticus*, and *Bacillus* and *Micrococcus* genera. The quantitative composition of microbial skin landscape showed the domination of *S. aureus*, which concentration increased up to 512.67 ± 34.92 CFU/cm² (in healthy individuals – 46.12 ± 3.55 CFU/cm², $p < 0.05$). The narrow-spectrum UVB therapy applied to psoriatic patients resulted in a significant inhibition of microbial contamination of the affected skin areas. Specifically, the amount of *S. aureus* and *S. epidermidis* in patients was 235.83 ± 24.39 CFU/cm² (before treatment – 415.81 ± 14.25 CFU/cm², $p < 0.05$) and 42.38 ± 1.95 CFU/cm² (before treatment – 93.40 ± 5.38 CFU/cm², $p < 0.05$).

Conclusion: Considering the results of our study, it has been established that narrow-band phototherapy produced an accentuated corrective effect on the skin microbial landscape of affected areas in psoriatic patients. A quantitative analysis of skin microorganisms can be used as a prognostic test used to determine nonspecific defence factors at different stages and at different forms of dermatosis

Abstract N°: 1636

Efficacy of photodynamic therapy in the treatment of actinic cheilitis

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Introduction & Objectives:

Treatment of actinic cheilitis (AC) remains challenging in view of the distinctive anatomic features of the lips.

Photodynamic therapy (PDT) is a modern and non-invasive treatment modality for (AC). The scarcity of high-quality studies remains the primary limitation in determining the effectiveness and tolerability of the technique. The main aim of our study was to assess the efficacy and adverse effects of PDT in the management of AC.

Materials & Methods:

We conducted a prospective and descriptive study in our department of Dermatology.

Patients with AC received two sessions of methyl-amino levulinate (MAL)-PDT at one-month interval using red light (633nm, 37j/cm², 10 minutes).

Patients were assessed at 1 week, 1 month and 3 months for clinical outcomes and adverse effects. Recurrence rate was evaluated at 6 months.

Results:

Four patients (2males and 2 females) were included with a mean age of 46.5± 17.9 years. AC was staged as grade 1 (n=1), grade 3(n=1), and grade 4(n=2). Complete clinical remission was achieved in two patients. Two others showed partial remission with improvement superior to 50 % of their AC. Constantly, PDT has shown its superiority over other non-invasive techniques, mainly topical chemotherapy. The technique was painful in all patients with a mean Visual Analogue Scale score of 8.

Self-limiting local phototoxicity was seen in two cases after one week of PDT. Transient hyperpigmentation was observed in two patients. None of the patients relapsed at 6 months of follow-up.

Conclusion:

MAL-PDT is an effective treatment option in AC that has shown its efficacy in terms of clinical outcomes and the rate of recurrence. Pain is the main limiting factor. Prescription of daylight-PDT could reduce the risk of side effects. Other prospective and comparative trials are needed in the future to determine its superiority compared to the other treatment modalities.

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LED therapy as an effective adjuvant treatment of inflammatory facial dermatoses

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Introduction & Objectives:

Benefit derived from the use of light has been recognized since ancient times, but only in the last few decades have we witnessed the rapid expansion of light-emitting diode (LED)-based devices as emerging and safe tools for the treatment of many skin conditions. LED light therapy (LED-LT) is FDA-approved for cosmetic procedures and uses noncoherent light across the electromagnetic spectrum to induce various effects, including increased ATP production, modulation of oxidative stress, and stimulation of collagen synthesis and angiogenesis. It influences skin cellular processes such as proliferation, differentiation, and inflammation. LED-LT comprises a variety of lights with different wavelengths that determine the depth of penetration. Blue light (400–490 nm) has a lower potential for penetration, reaching only to the epidermis (<1 mm) and proving useful for skin conditions in the epidermal layer. Red light (630–700 nm) penetrates deeper into the reticular dermis (2–3 mm), activating fibroblasts and increasing fibroblast growth factor expression, such as type 1 procollagen and matrix metalloproteinase-9.

Materials & Methods:

The study included 18 patients with acne, 4 patients with papulopustular rosacea, 2 patients with perioral dermatitis, and 1 patient with seborrheic dermatitis. None of them had photosensitivity disorders. Patients were submitted to LED therapy, initially receiving 7-10 consecutive sessions, followed by twice-weekly sessions for another 8 weeks. Blue (415 nm) and red (630 nm) light were concurrently irradiated for 20 minutes using a LED system. Therapy started at lower intensity and increased with each session until reaching maximum intensity or until mild erythema appeared after the session. The therapy complemented standard topical treatment.

Results:

Therapeutic response was assessed utilizing a global improvement scoring system, ranging from 0 (no improvement), to 4 (complete or almost complete resolution of lesions). After completing all the LED-LT sessions, all patients exhibited a positive response. Each patient completed a Patient Quality of Life survey, documenting a reduction in symptoms and expressing satisfaction with the treatment. Furthermore, both the physician's clinical observations and patient feedback indicated a decrease in erythema, papules, and pustules. No side effects were noted throughout the study period.

Conclusion:

Several studies have highlighted the effectiveness and safety of LED therapy, particularly when combining red and blue light, in addressing inflammatory acne lesions. Blue light demonstrates antibacterial activity, inhibiting *Cutibacterium acnes* and reducing human sebocyte proliferation significantly, while red light is known to influence sebum production.

While LED-LT is not yet approved for rosacea treatment, its efficacy in the papulopustular subtype has been noted due to the anti-inflammatory effects of both blue and red light, offering a valid alternative to conventional therapy, and potentially reducing side effects. Additionally, LED-LT serves as an adjunctive treatment for perioral dermatitis for similar reasons. While evidence for LED-LT in seborrheic dermatitis is limited, its targeting of sebocytes and sebum production suggests potential efficacy in this condition as well.

In conclusion, LED-LT represents an effective, safe, and well-tolerated adjuvant treatment in certain dermatological inflammatory conditions.

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