

FC11.112 SPLIT APPROACH STUDY FOR THE TREATMENT OF ACTINIC KERATOSES AND NON-MELANOMA SKIN CANCERS WITH ALA MEDIATED PHOTODYNAMIC THERAPY VERSUS TREATMENT WITH TOPICAL IMIQUIMOD CREAM

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Background / Objectives:

Actinic keratoses (AKs) and superficial non-melanoma skin cancers (NMSC) are very common in elderly as well as in immunosuppressed populations. Our study goal is to compare efficacy of ALA Photodynamic Therapy (PDT) versus topical application of conventional therapy with imiquimod (Aldara), for the treatment of AKs.

Methods:

According to IRB approved protocol “split” technique is followed. After skin preparation, 20% 5-aminolevulinic acid (5-ALA) is applied on lesional skin (proposed N=30), followed by exposure to 417 nm blue light (Blu-U, DUSA), for 16 minutes, with total light dose of 10 J/cm² delivered on treated area. ALA incubation time is 3 hours. Topical application of imiquimod is applied on lesional skin and on equivalent body sites, three times weekly for 12 weeks.

Clinical evaluation and photography are obtained to monitor erythema, edema, scaling, scab, eschar, necrosis, scarring, and alopecia due to PDT that are graded according to prearranged scale, before and after treatment, on days 1, 2, 7, 15, 30 post exposure. Partial, complete clearance and re-occurrence of skin lesions are monitored in bi-monthly intervals during 18 month follow-up. Number of the PDT treatments ranges from 2-5 sessions, every 2-4 weeks apart, pending on response. Experienced pain or discomfort, patient preference and cost effectiveness for the applied modalities have been monitored as well.

Results:

ALA-PDT is an efficient method for the treatment of AK and superficial NMSC. Clinical responses (erythema, edema, scaling, pruritus) are more pronounced on post-treatment days 1-5 on ALA-PDT treated sites and resolve in 12-15 days with complete skin recovery. Topical application of imiquimod results in redness, scaling and crusting of lesional skin but onset of symptoms is demonstrated following 7-10 days of application and duration of treatment is much longer (12 weeks total) compared to PDT. Treatment compliance and reproducibility are better when ALA PDT is applied in clinic compared to topical imiquimod protocol. Re-occurrence of AKs at treated skin areas during the 18 month follow-up is in progress in healthy elderly patients versus immunocompromised participants, with evidence showing remarkable responses to ALA-PDT for the treatment AK and NMSC for patients with immunosuppression, non-responsive to topical imiquimod.

Conclusion:

The results of this study are pointing towards PDT becoming first line “field” treatment in dermatology practice for these commonly encountered neoplasms and comprising a modality of choice for chemoprevention in patients under chronic immunosuppression.

References: 1. Juarranz A, et al. Photodynamic therapy of cancer. Basic principles

and applications. Clin Transl Oncol, 2008 Mar;10(3):148-54

2. Touma D, et al. A trial of short incubation, broad-area photodynamic therapy for facial actinic keratoses and diffuse photodamage. Arch Dermatol, 2004 Jan;140(1):33-40