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THE USES OF PUVA IN ATOPIC DERMATITIS

Harry C. Goldberg

St. Mary's Hospital, Palm Beach, Florida, USA

Abstract. PUVA is an acronym which stands for the use of Psoralen as a photo-sensitizer for patients exposed to ultraviolet light type A (320–400 nm). Such use was brought to worldwide attention by Parrish et al. in 1974. Its deserved popularity is warranted by a remarkable improvement in over 85% of psoriatic patients. It was expected that PUVA would be tried for many skin conditions. Good results have also been claimed in atopic dermatitis (AD), mycosis fungoides, alopecia areata, prurigo, parapsoriasis, and urticaria pigmentosa. This paper represents a compilation of the reports from several PUVA treatment centers in the USA concerning AD. The reason for the improvement in these skin conditions which vary considerably in their etiology and histo-pathology, remains to be explained.

Key words: PUVA therapy; PUVA treatment centers

Patients with atopic dermatitis (AD) were treated in a manner similar to that commonly used for the treatment of psoriasis namely, 0.6 mg/kg bodyweight of 8 methoxypsoralen was administered orally approximately 2 hour prior to exposure of the patient to UVA 2–3 times per week up to the tolerance of the patient, i.e. just less than that amount which produced a feeling of and/or a visible redness of the skin plus itching. This amount was gradually increased, depending on the type of skin of the patient until 5 and up to 10 joules/cm^2 of UVA was given. This range was usually sufficient to produce a gradual improvement of the affected skin. Laboratory studies of the complete blood count and the blood chemistry including the anti-nuclear antibody test were performed to establish a base for further studies as the treatments proceeded. Eye studies were also taken and monitored.

Although my primary interest is in psoriasis, having a complete PUVA set-up has made it possible for me to test its value for other disorders. Although less common diseases such as mycosis fungoides, parapsoriasis, and urticaria pigmentosa are reported as being responsive to PUVA, I have been more interested in using it for the treatment of AD, vitiligo, and alopecia areata. This use has been somewhat limited by the fact that patients under the age of 12 are excluded from PUVA treatment in USA. Personal communications have been used to evaluate and broaden the results of my own experiences. Atopy was a term coined by Coca (1) in 1923 a has been applied to dermatitis (atopic) and other disorders. A review article on this subject by Hanifin & Lobitz (2) emphasizes the confusion and difficulty in establishing the diagnosis. Speculations on the pathogenesis vary considerably. This makes an explanation of the possible improvement in AD by PUVA even more difficult, since the histo-pathologic findings of AD and psoriasis are so different. This is more so where we find further differences in the pathogenesis of mycosis fungoides and urticaria pigmentosa. The most extensive study of the use of PUVA in AD is that of Morison et al. (3). These authors described the clearing of atopic eczema in 15 patients with PUVA therapy. The authors have allowed me to show typical slides of some of their patients and also sent me a follow-up note on their patients after 4 years of treatment (4). The notes that especially interested me were: that P-UVB did not have the beneficial effects that P-UVA had; the beneficial effects that PUVA has on blepharitis; the fact that the amount of PUVA needed to clear atopic eczema was about twice that needed for the clearing of psoriasis, and the unfortunate fact that 20% of these patients developed herpes simplex.

The end results of this treatment by Morison et al. (3) as of February 26, 1979 are:

one patient who had an early spontaneous remission is still clear;

one patient who cleared dropped out of treatment;

one patient needed two treatments/week for maintenance (this was considered an excessive amount of treatment for this disorder);

two patients are on weekly treatments, but still have 20% involvement;

ten patients are on PUVA and are controlled with

requirements of weekly (5 patients), every 2 weeks (3 patients) and monthly (2 patients) treatments.

Personal communications regarding PUVA therapy for AD in several other PUVA centers are as follows:

Mount Sinai Medical Center (5), Miami Beach, Florida: Dr Phillip Frost states he has had no experience in the use of PUVA for AD.

University of Michigan Medical School (6), Ann Arbor, Michigan: Dr John J. Voorhees states he does not treat AD with PUVA because of the possibility of serious side effects, since AD requires more treatment time than psoriasis. This is exemplified in the article by Tam et al. (7) which describes the occurrence of Bowen's disease and squamous cell carcinoma in a patient age 32 who had a most unusually high cumulative dosage of UVA, namely 3 700 joules/cm^2 as part of his PUVA therapy.

Finally a note for those physicians to whom it has not become available because of cost. Petrozzi & Kligman (8) describe PUVA without specialized equipment in the Arch Dermatol *114:* 387–390, 1978.

It may be that AD in Norway is more of a problem than in many areas of the USA, and therefore PUVA treatment may be important to have available. AD patients in my own practice have been limited, but in general my results have agreed with those of the Harvard Medical School group.

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