



The Epidermic Diseases Treatment With Ultraviolet Spectrum.

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ABSTRACT

The utility of UV radiation in the treatment of epidermic diseases is proven by various systematic study on case to case basis. Phototherapy has undergone multifaceted improvements over few decades. While conventional phototherapy was based on body part exposure to UV radiation which included both affected and unaffected areas, targeted phototherapy using optic fiber cable and laser or nonlaser light with few mJ energy dose and spot size ranging from 1cm to 4 cm. In recent years, the research in the targeted phototherapy made availability of radiation with specific wavelength and intensity in portable models. Phototherapy is being used for effective treatment of about 20 dermatological problems¹. It is found that Lasers with 337.1 nm are also useful for many of these diseases.

INTRODUCTION

Conventional phototherapy used Ultraviolet spectrum(200nm-400nm) for the treatment of dermatological problems. It included Broadband UVB Therapy, UVA therapy, Selective phototherapy (310-318 nm), Narrowband UVB (311 nm) therapy, Ultraviolet A1 (UVA1) and Ultraviolet A2 (UVA2) therapy. Conventional phototherapy is based on the use of tube light having radiation of desired wavelength.

In recent years, Targeted phototherapy in which Excimer laser is used, Intense pulse light therapy, Light-based targeted phototherapy, Photodynamic therapy Low-level laser and light-emitting diode therapy. All these devices have the source of radiation designed with the aim of improved utility standards. These are smaller in size and their spot size is reduced with Controlled energy dose.

METHOD

Conventional phototherapy have the main disadvantage of exposure of unaffected areas to UV light. In this method the treatment continues for long session with step by step increment in doses. The devices used are not handy so patient has to visit the clinic for long period. Certain body parts can not be treated due to risk involved. Especially children patients do not cope up with such type of treatment.

Targeted phototherapy is emerging as a more effective treatment tool for various dermatological problems but it has some drawbacks. Since the spot size is reduced to few cm the treatment of large affected areas become difficult. If the affected skin area is above 10% of the body then the targeted phototherapy is not recommended due to cost and time required for satisfactory results.

Along with these phototherapy modalities the use of topical or systemic agents was also tested which is referred as combination therapy.

Combination therapy

Phototherapy may be combined with topical or systemic agents to achieve higher clearance rates, longer disease free intervals and a lower carcinogenic risk.⁸ Topical agents include anthralin, vitamin D analogues, retinoids, glucocorticoids, emollients, saltwater baths and tar. The combination of either broad band UVB or 311 nm UVB therapy with calcipotriol increases the therapeutic efficacy of phototherapy and reduces the irritation caused by calcipotriol.⁹

In psoriasis tazarotene gel applied topically along with narrowband or broadband UVB which promotes fast and effective cleaning of the disease.¹⁰ This combination therapy can be initiated at lower doses than usual when used in combination with tazarotene.¹¹

Laser Therapy

The Excimer laser power and exposure time were so adjusted that the number of photons in both the cases were same. Final evaluation was done after every one month of the treatment. The patches exposed to UVB radiation i.e. Excimer laser radiation clearly showed pigmentation. No serious or adverse side effects were observed.

UVA radiation phototherapy and 337.1 nm pulsed nitrogen laser¹² were targeted to affected lesions only. The use of laser in the treatment limits the total skin exposure to UV radiation and hence the risk of skin cancer may also be reduced. It also brings faster therapeutic effect and the total treatment time also reduced after getting more experience. It limits the cumulative exposure to the UV radiation as compared to the conventional phototherapy. Thus we conclude that nitrogen laser can be used as a major pigmentary tool in all types of vitiligo treatment.¹³ It is helpful in preventing further spread of vitiligo patches. Decrease of depigmentation versus time found to be exponential in behaviour.

Conclusion

The phototherapy is playing vital role in the treatment of dermatological disorders from ancient times. The modalities of treatment include variety of research. The use of small portion of light spectrum had been found of great

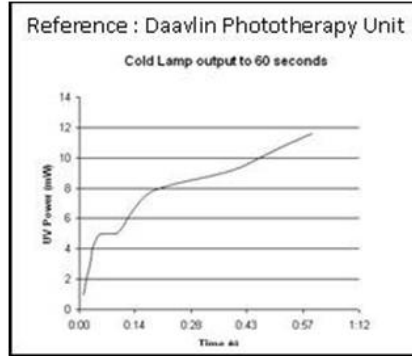
importance for curing a number of diseases related to skin. In coming years new research in this field with analytical and statistical data of patients may come out with remarkable success against the fight with skin diseases.



Conventional Unit



Targeted Unit



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