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Study of Biophysics of the Skin and Light

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Abstract

Light is important for plant life and human life. Medical sciences is using light in number of ways. X-rays and non-neonatal care are popular examples of light in medical sciences. Since many decades UV that is ultraviolet light is being successfully used for the treatment of skin diseases. The skin diseases can be cured using light of suitable wave length. Many researchers studied and reported the utility of light in skin disorders. The wavelength ranging from 240 nano-meter to 360 nano-meter are referred as UV light and it is further subdivided in three categories. The range of 320 nano-meter to 360 nano-meter is called UV-A and UV-B ranges between 299 to 320 nano-meter. The range of 240 nano-meter to 299 nm range is considered as UV-C. We see radiation category in the medical applications of UV-B in skin disorder and its results are tested clinically from time to time.

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Introduction

The applications of ultraviolet rays are not only restricted to medical field but it is equally useful in many other fields also. UV 365 nano-meter light is used for bacterial treatment, fungus identifications, photography, titration process, TLC, nucleic acid visualisation, genetic experiments, sanitation covers, a frock Singh detection, rodent contamination and lies detection of food contamination, milk stone inspection, in industrial applications non-destructive testing, UV curing, magnetic particle inspection, inspection of conformal coating are the areas where UV light is used. It is very useful in criminology. It is applicable for detection of altered documents, counterfeit currency, detection of signature, verification for forensic application, coding or marking, Arson investigation and lab testing, in the field of electronics clean room inspection, epoxy coat, quality control, inspection are the areas of utility.

miscellaneous applications like examination of fine art archaeology, Entomology, science and technology, photo resist exposure, philately, re admission control, mineralogy, automotive leak detection and wind shield repair or also there.

Mid-range UV that is 302 nano-meter which has used and researched gel electrophoresis, gel viewing, optical lab measurements, industrial UV curing, gradient sampling, solar experimentation.

In medical diagnosis, dermatology, cosmetology the light having wavelength in UV range are widely used for the treatment purpose. We have mainly studied UVB in with the skin treatment. The interaction of UVB with skin, penetration level of the different wavelength effect of variation in UV exposure time and energy dose level were studied. The use of Eximer laser was also examined ^[4],^[6]. The photograph of patients were taken for detail analysis of curing rate and percentage of curing with photo therapy

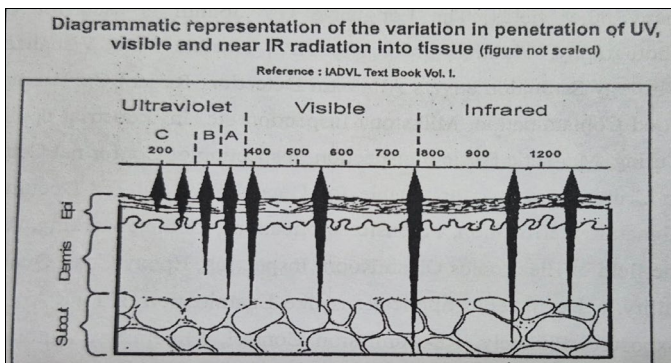
Method

Bio Physics of light and skin was based on case studies at clinical labs as the source of photo therapy the unit from Daavlin Company was used. In this study more than 60% patients reported satisfaction. The result from photo therapy are free from any type of side effects. The skin disorder like psoriasis, vitiligo were treated using photo therapy and results were analysed. The patient maintaining regularity in the treatment could not noticeable results. The very first patch appeared on the skin got quick response and got cured completely.

Limitation

The photo therapy is a treatment type in which minimum 6 month regular visits to clinic are required. The visit schedule

is thrice a week. In succession it is to be followed. Step by step increment in dosage is suggested so continuity is very important. Exposure of unaffected areas to UV light is also one limitation. The devices used are not portable so patient has to visit the clinic for long period. Certain body parts cannot be treated due to risk involved in it. Especially children patient do not cope up such type of treatment.



Conclusion

The biophysics of skin and light is trustworthy and gives satisfactory results in curing a number of diseases related to skin. UVB photo therapy is playing vital role in the treatment of dermatological diseases like psoriasis and vitiligo. In recent years new research in this field has given many new type of devices. The analytical and statistical data of patients prove that worldwide photo therapy is getting acceptance for the treatment of skin disorders

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