

Review Article

Phototherapy-Induced Erythema in a Patient with Psoriasis and Obesity Treated with Narrowband UVB Phototherapy

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Abstract

Psoriasis is more common among patients with obesity. These patients tend to have more severe psoriasis. Therefore, a higher proportion of them require intensive treatment modalities such as phototherapy, but with not always dose adjustment. We report a phototherapy-induced erythema in patient with psoriasis and obesity treated with narrowband UVB phototherapy.

Keywords

Narrowband UVB phototherapy; Obesity; Psoriasis

Observation

A male patient 62 years old, with a history of arterial hypertension and obesity (body mass index (BMI): 36.2, waist circumference (WC): 115cm), has suffered from a psoriasis for 23 years, treated and controlled by methotrexate and retinoids. In the last 9 months there was an extension of his lesions. Serum biochemistry and urinalysis profiles were normal. Narrowband UVB phototherapy TLO1 was indicated with a dose of 2J/cm² (patient Fitzpatrick phototype III). 48 hours after the first session, the patient developed a severe, painful erythema, primarily located on the trunk, arms and legs (figures 1,2,3). UVB phototherapy was immediately suspended, and application of topical steroids and antalgics were prescribed. An improvement of Phototherapy-induced erythema was noted after 2 weeks of treatment.

Discussion

Variations in irradiance with the delivery of phototherapy are influenced by many factors, such as hot and cold spots due to new lamps and failed lamps, as well as the distance of the skin from the UV lamps. Clarkson et al. [1] also concluded that the accuracy of cabinet dosimetry can be dependent on patient size [1]. UV dosing is



Figure 1: Erythema located on the back (48 hours after UVB phototherapy)

calculated using designated patient irradiance, which is determined by measuring mean irradiance at chest, waist and knee levels in a person of average body size. There is currently no adjustment made for patients with obesity and increased WC. In a pilot study of 38 patients [2], the authors aimed to determine if there was an association between BMI, WC and incidence of phototherapy-related erythema in patients with psoriasis receiving narrowband UVB phototherapy. They observed that patients who were obese developed more frequently erythema during their phototherapy course and consequently required more cautious increasing doses in their UV



Figure 2: Erythema located on the trunk (48 hours after UVB phototherapy)



Figure 3: Erythema located on the legs (48 hours after UVB phototherapy)

therapy dosing, with 10% increments rather than the standard 20% increments. The higher erythema scores in these patients could be due to their closer proximity to the phototherapy bulbs or to altered photoadaptation in patients with obesity.

Conclusion

We remember through this case, that psoriatic psoriasis with obesity and increased WC may be at a higher risk of phototherapy-induced erythema. In light of the growing incidence of obesity, future treatment regimens may require dose adjustment for patients with increased BMI to help reduce this complication.

References

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