Narrow- band UVB effects on cutaneous vitamin D receptor expression and serum 25-hydroxyvitamin D in generalized vitiligo

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Abstract

Background/Purpose: Vitamin D has a role in variety of autoimmune diseases including vitiligo. Narrow- band UVB (NB- UVB) treatment of vitiligo might act through its effects on vitamin D and its receptor.This study is the first to elucidate NB- UVB effects on immunohistochemical vitamin D receptor (VDR) expression in generalized vitiligo and correlate it with serum vitamin D and repigmentation response. **Methods:** Using immunohistochemistry, VDR expression was estimated in skin biopsies of 30 controls and 30 vitiligo patients; from vitiligo lesion, perilesional skin at baseline and from repigmented and nonresponding skin after 24 NB- UVB sessions. Baseline serum 25- hydroxyvitamin D [25(OH)D] was investigated and repeated after 24 NB- UVB sessions. **Results:** Vitamin D receptor expression and serum 25(OH)D in controls were significantly higher compared to vitiligo patients. After NB- UVB therapy, there was a significant rise in VDR expression and serum 25(OH)D. VDR expression was significantly higher in repigmented skin compared to nonresponding lesion. Improvement in the clinical outcome score was associated with higher baseline VDR expression and higher serum 25(OH)D. **Conclusions:** NB- UVB phototherapy is associated with improved cutaneous VDR expression and vitamin D synthesis. Better repigmentation response to NB-UVB may be related to higher baseline VDR expression and its upregulation after phototherapy.