

The Impact of At-Home Narrow-Band UVB Phototherapy for Mild-to-Severe Psoriasis: A Retrospective, Multicenter, Observational Study

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INTRODUCTION

Narrow band-ultraviolet B (NB-UVB) light therapy has been shown to be one of the safest, least expensive, and most effective treatments for psoriasis.¹ Traditional clinic-based phototherapy is time-consuming, expensive, and inconvenient, causing significant patient dropout. This study aims to assess adherence, patient-reported outcomes, and satisfaction with a comprehensive at-home NB-UVB phototherapy system.

Thirty-six patients with mild to severe psoriasis (mild n=14, moderate n=17, severe n=2, unknown n=3) who had been prescribed topical corticosteroids (Group 1, n=25) or systemic or biologic therapy (Group 2, n=11) were treated with adjuvant at-home NB-UVB phototherapy accompanied by a smartphone application with integrated dosing controls, adherence reminders, and one-to-one coaching and monitoring by a care coach (Zerigo Health Solution). The treatment period ranged between 86 to 286 days (three treatments per week, per AAD guidelines¹). Adherence and treatment satisfaction (5-point scale) were collected. Dermatology Life Quality Index (DLQI) and Psoriasis Symptom Inventory (PSI) surveys were administered at baseline and 12-week follow-up. Normality of the data was determined by the Shapiro-Wilk test, and statistical significance was determined by the Wilcoxon signed-rank test. Results were considered significant at a *P*-value <0.05.

Median adherence was 70.4%, 68.3%, and 86.7% for all patients, Group 1, and Group 2, respectively, with average patient satisfaction ratings of 4.27, 4.33, and 4.11 out of 5, respectively. Average treatment time per patient was 16.7 minutes per week. Average treatment time by disease severity at the initiation of the study was 19.1, 13.4, and 25.4 minutes per week for mild, moderate, and severe disease, respectively. Twenty patients completed both the baseline and week 12 PSI (range 0 to 32, the higher the score, the more severe of symptoms) and DLQI (range 0 to 30, the higher the score, the more quality of life is impaired). There was a 3.9-point average improvement in PSI at week 12 compared to baseline (*P*=0.007; Table 1). DLQI scores

improved by an average of 1.8 points at week 12 compared to baseline (*P*=0.038), with 30.0% of patients achieving the minimal clinically important difference (≥ 4 points improvement; Table 2). As part of the treatment protocol per AAD-NPF guidelines,¹ two patients experienced mild erythema as they attempted to reach minimal erythema dosing levels. They paused treatment until the erythema resolved. Events were evaluated and were not reportable to the Food and Drug Administration.

Previous studies have found that at-home NB-UVB phototherapy is at least as effective and safe as NB-UVB phototherapy offered in the outpatient clinic setting for the treatment of mild to severe psoriasis.^{2,4} Koek et al reported that for patients treated at home, the median PASI score decreased by 74% compared with 70% for patients treated in an outpatient setting and that the treatment effect was similar (*P*>0.3).⁴ Importantly, our current study shows notable improvement in psoriatic symptoms and quality of life. A potential reason for the improved quality of life

TABLE 1.

Psoriasis Symptom Inventory Among Patients Who Received At-Home Narrow-Band UVB Phototherapy		
PSI (n=20)		
Average reduction from baseline	3.9 points	
Scoring Category	Baseline (n)	Week 12 (n)
0-8 None/Mild	8	15
9-16 Moderate	7	3
17-24 Severe	4	1
25-32 Very Severe	1	1
Change in PSI		
Worsened (n, %)	1 (5%)	
No change (n, %)	10 (50%)	
Improved by 1 category (n, %)	7 (35%)	
Improved by 2 categories (n, %)	2 (10%)	
Improved by 1 or 2 categories (n, %)	9 (45.0%)	

Abbreviations: PSI: Psoriasis Symptom Inventory, UVB: Ultraviolet B light

TABLE 2.

Dermatology Life Quality Index Among Patients Who Received At-Home Narrow-Band UVB Phototherapy		
DLQI (n=20)		
Average reduction from baseline	1.8 points	
Patients who achieved MCID* (%)	30.0%	
Score (Effect on patient's life)	Baseline (n)	Week 12 (n)
0-1 (None)	3	2
2-5 (Small)	8	13
6-10 (Moderate)	6	4
11-20 (Very large)	2	1
21-30 (Extremely large)	1	0
Change in DLQI		
Worsened (n, %)	3 (15%)	
No change (n, %)	9 (45%)	
Improved by 1 category (n, %)	7 (35%)	
Improved by 2 categories (n, %)	1 (5%)	
Improved by 1 or 2 categories (n, %)	8 (40.0%)	

*Change in DLQI of at least 4 points.
Abbreviations: DLQI: Dermatology Life Quality Index, MCID: Minimally clinically important difference, UVB: Ultraviolet B light

is the overall low treatment time at just under 17 minutes per week, in addition to the one-on-one coaching provided. When considering travel time and actual appointment time, the burden on one's daily life is significantly reduced by offering at-home treatment. An additional benefit other studies have identified is the cost-effectiveness of at-home phototherapy since the cost of at-home treatment is comparable to outpatient treatment and significantly less expensive than biologic therapy.^{3,5} In conclusion, hand-held, at-home NB-UVB phototherapy with proactive coaching and monitoring can improve outcomes and quality of life for patients.

DISCLOSURES

Justine Schneider has no disclosures. Tina Bhutani and Ronald Moy are members of the Zerigo Medical Advisory Board.

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