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Enhancing the Ability to Diagnose, Interpret and Apply Best Treatment Options for Cutaneous Lymphomas

Therapeutics/Preclinical Studies | #16

Illuminating Inequities:
A Study of Narrowband UVB Therapy Response in Mycosis Fungoides Patients Across Skin Types

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Disclosures

- I do not have any relevant financial relationships.

This presentation and/or comments will provide a balanced, non-promotional, and evidence-based approach to all diagnostic, therapeutic and/or research related content.

Background

- Mycosis fungoides (MF) presents with **poorer prognosis in patients with skin of color.**[1-2]

- Black patients have **higher incidence** and **more aggressive disease** compared to white patients.[1-4]
- Black patients are more likely to be **diagnosed** with MF at a **higher stage** and have significantly **worse overall and disease-free survival.**[2,4]

Background

- Narrowband UVB (**NB-UVB**) is a first-line therapy for early-stage MF across skin types.[5]

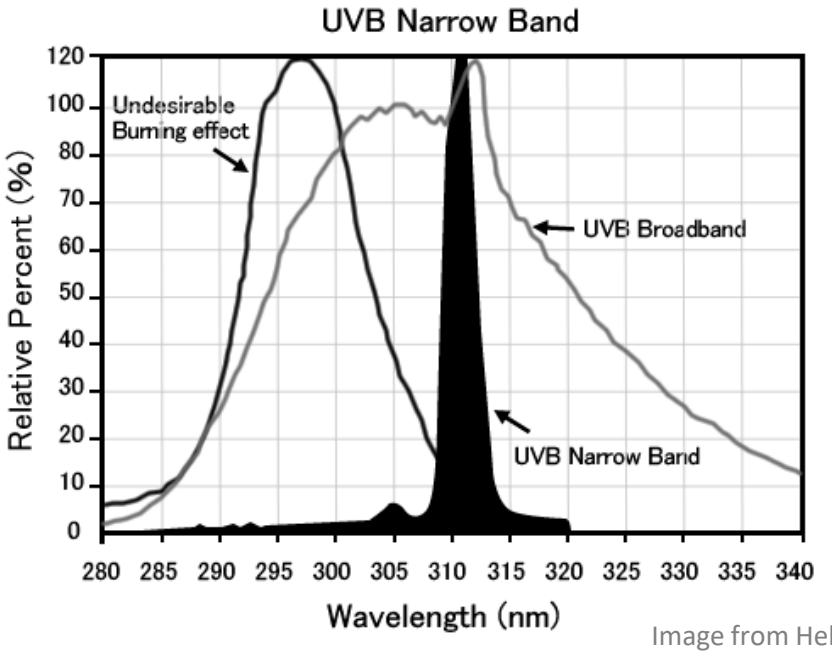

Image from Helander Dermatology

- Optimal dosage is determined by identifying the minimal erythema dose (MED) and customizing the MED to achieve sub-erythema.[6]

Background

- Current NB-UVB guidelines and practices take a more generalized approach, based on the Fitzpatrick skin type scale.[7]

Type I

Type II

Type III

Type IV

Type V

Type VI

Background

- Current NB-UVB guidelines and practices take a more generalized approach, based on the Fitzpatrick skin type scale.[7]

Skin type	Initial dose (mJ/cm^2)	Increments (by mJ/cm^2)
I	130	15
II	220	25
III	260	40
IV	330	45
V	350	60
VI	400	65

Background

- We observed that MF patients with darker skin seem to experience **slower initial improvement** on NB-UVB than their lighter skin counterparts.

Type I

Type II

Type III

Type IV

Type V

Type VI

Objectives

- We aimed to evaluate the clinical response to NB-UVB therapy of MF patients across Fitzpatrick skin types.

Methods

Study Design:

- Retrospective chart review of CTCL patients seen in the Department of Dermatology at Columbia University (January 2020 to July 2023)

Inclusion Criteria:

- **Biopsy-confirmed early-stage MF** (stage IA/IB)
- **NB-UVB monotherapy three times per week**, +/- topicals for symptom management
- At least **two objective data points** measuring disease severity (mSWAT)
  - One at the initiation of therapy
  - Another at least 10 weeks into therapy to allow for sufficient treatment duration
- mSWAT was measured at each follow-up visit (every 2-3 months)

Results

Table 1. Patient demographics and characteristics across different skin types.

Skin Type	# of Patients	Mean Age (years, range)	% on Topical Steroids	Response (ΔmSWAT/week)	p-value
I-II	14	61.1, 28-76	36%	-3.66 ± 1.67%	reference
III-IV	9	47.6, 30-70	33%	-1.55 ± 1.97%	*p < 0.05
V-VI	5	46.4, 22-71	60%	+0.96 ± 4.14%	**p = 0.001

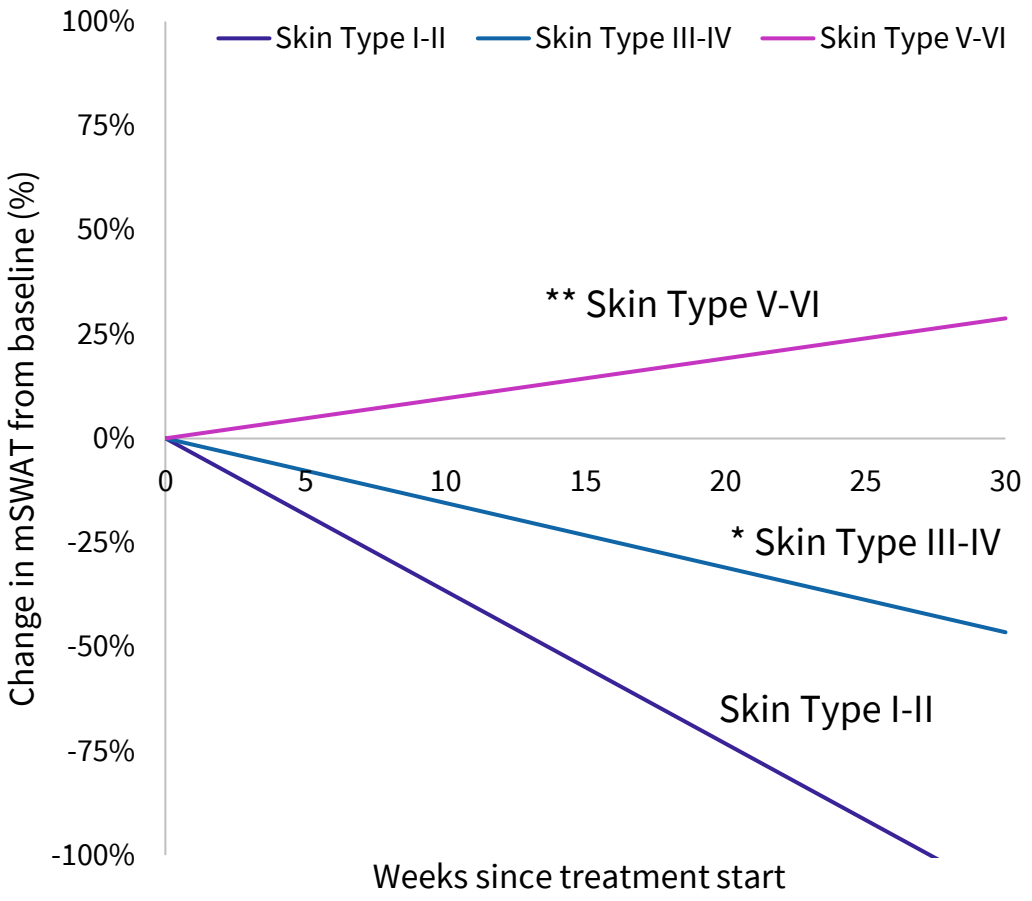

Figure 1. Rate of response to NB-UVB therapy by skin type.

Results

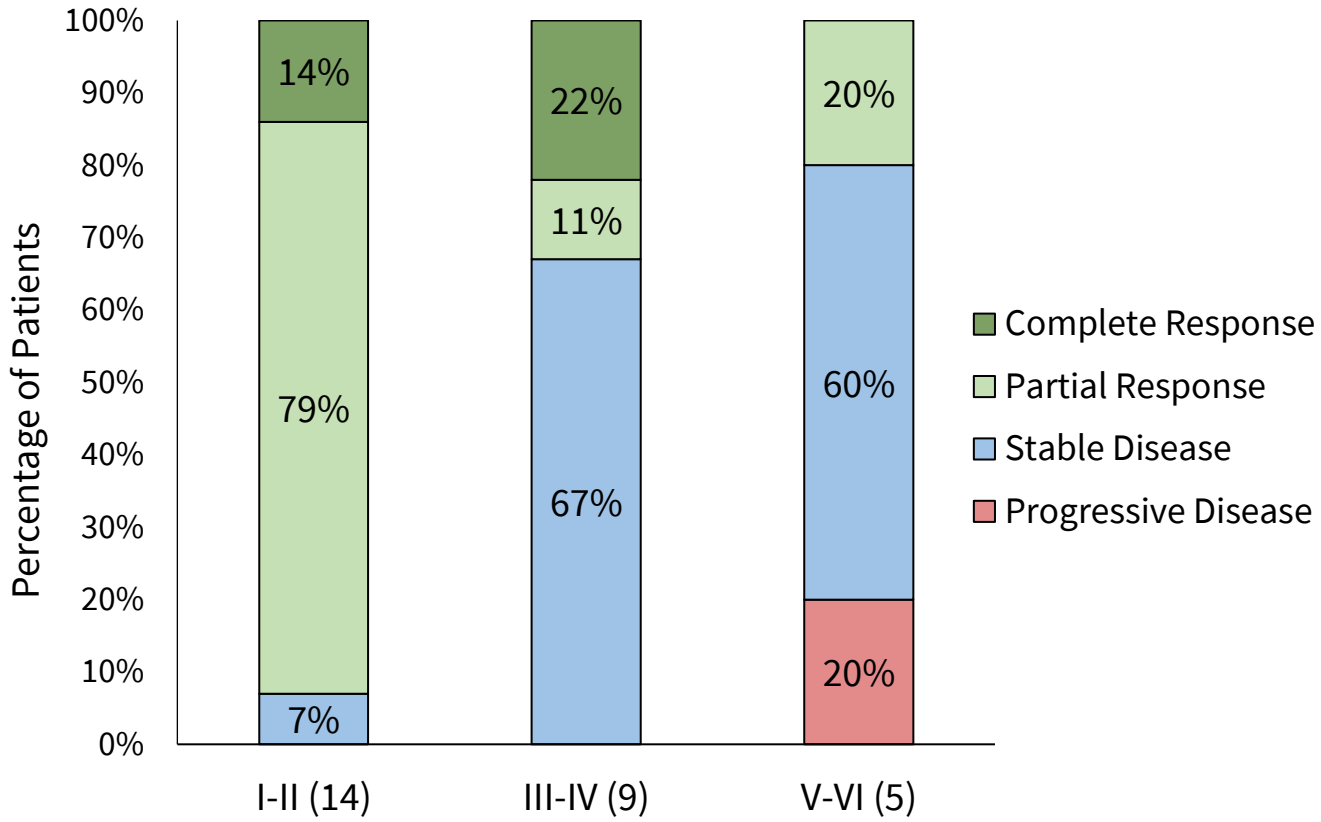

Figure 2. Distribution of responses to NB-UVB therapy by skin type.

- Compared to 93% of skin type I-II patients, only 33% of skin type III-IV and 20% of skin type V-VI patients achieved complete or partial response within the first months of therapy.

Complete response = 100% clearance of skin lesions
Partial response = 50-99% clearance from baseline
Stable disease = <25% increase to <50% clearance from baseline
Progressive disease = ≥25% increase from baseline

Conclusions

- Patients with **skin types III-IV and V-VI** experience **slower clinical improvement, and even disease progression, in the initial stages of therapy**, compared to patients with skin type I-II.
- Poorer responses may be due to insufficient starting NB-UVB doses and/or insufficient incremental increases over treatment course.
- MED testing should be used whenever possible to achieve more personalized and effective regimens for patients.
- Prospective studies are urgently needed to re-evaluate NB-UVB dosing regimens to ensure equitable care for MF patients across skin types.

Acknowledgements

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Thank you!

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