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Conflicts of interest

None disclosed.

REFERENCES

1. Wang D, Chong VC, Chong WS, Oon HH. A review on pityriasis rubra pilaris. *Am J Clin Dermatol*. 2018;19(3):377-390.
2. Marrouche N, Kurban M, Kibbi AG, Abbas O. Pityriasis rubra pilaris: clinicopathological study of 32 cases from Lebanon. *Int J Dermatol*. 2014;53(4):434-439.
3. Price L, Lesesky E. Pityriasis rubra pilaris and severe hypereosinophilia. *Cutis*. 2017;100(3):E6-E7.
4. Hara T, Ikeda T, Inaba Y, et al. Peripheral blood eosinophilia is associated with the presence of skin ulcers in patients with systemic sclerosis. *J Dermatol*. 2019;46(4):334-337.
5. Magro CM, Crowson AN. The clinical and histomorphological features of pityriasis rubra pilaris. A comparative analysis with psoriasis. *J Cutan Pathol*. 1997;24(7):416-424.

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Assessing the safety of the Q-switched 755-nm alexandrite laser in darker skin: A retrospective study

To the Editor: Q-switched alexandrite laser (QSAL) devices are well-established as a cosmetic treatment modality for a diverse array of pigment abnormalities[1]; however, studies evaluating adverse effects and modifiable factors, particularly among patients with skin of color, are limited. The increased likelihood of unwanted side effects makes treatment more difficult and nuanced among patients with skin of color.[2]

A 6-year single-center retrospective analysis of adults who received at least 1 treatment during the study period was performed to determine the frequency of adverse events associated with QSAL in patients with Fitzpatrick skin types (FST) I-VI. These treatments were performed by board-certified dermatologists with extensive laser experience such that in general, the lowest pulse count and fluence possible to achieve the intended outcome was used.

A total of three hundred twenty-four 755-nm QSAL treatments were performed on 144 patients with FST I-VI over the study period. Of 239 QSAL laser treatments included for analyses, 46 (19.25%) had short-term (≤2 weeks, 16.31%) or long-term (>2 weeks, 2.51%) complications (Table I). The most frequent complications were crusting (45.65%), swelling (10.87%), and hyperpigmentation (10.87%). Reported adverse events were in excess of the expected normal wound healing process. The long-term adverse events included hyperpigmentation (10.87%) and hypopigmentation (2.2%). Complications were disproportionately observed with skin type IV (34.4%; FST IV vs other FST: odds ratio 2.59; 95% confidence interval 1.08-6.21). Of note, in FST IV, 9 people in 11 different treatments uniquely had either short-term or long-term adverse events (Table II). The mean of pulse counts was higher in those with adverse events (Welch unequal variances *t* test, $P = .011$).

Age or sex of the patient was not associated with the risk of adverse events. No statistical difference was seen in patients who received a test spot with regard to skin type and adverse event frequency (likelihood ratio chi-square; $P = .102$). No statistical difference was seen in the means of spot size and fluency among skin types and frequency of adverse events. The global means (standard deviation) for spot size and fluency were 3.91 mm (0.29 mm) and 3.82 J/cm^2 (1.09 J/cm^2), respectively.

During the data analysis, we did not find any interventions to be statistically significant in the reduction of adverse events. Our interventions were primarily standard of care or posttreatment comfort care. These included various non-standardized interventions including test spots, ice packs, triamcinolone acetonide 0.025%-0.1% ointment, and avoidance of excessive sun exposure pre- and post-laser treatment.

The strengths of this study include the diversity of patients seen in an urban academic center with treatments performed by experienced dermatologists. However, we also acknowledge that the single-center retrospective design may limit generalizability.

Racial disparities in health care are well documented further highlighting the importance of this study.[3] Patients with skin type IV and those treated with higher pulse counts were found to have an increased risk of side effects after QSAL, demonstrating the importance of skilled operators, and we hope that these data empower the clinicians during the shared decision-making processes.

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Table I. Demographics and descriptive characteristics of the study population and incidence of side effects

Population characteristics	Total cohort (n = 239)	No side effects (n = 193)	Side effects (n = 46)	*P* value*
Age, n (%)				.25
<30	35 (14.64)	26 (13.47)	9 (19.57)	
30-59	148 (61.92)	118 (61.14)	30 (65.22)	
≥60	56 (23.43)	49 (25.39)	7 (15.22)	
Sex, n (%)				.75
Female	186 (77.82)	151 (78.24)	35 (76.09)	
Male	53 (22.18)	42 (21.76)	11 (23.91)	
Skin type, n (%)				.043
I	11 (4.60)	11 (5.70)	0 (0)	
II	119 (49.79)	99 (51.30)	20 (43.48)	
III	72 (30.13)	57 (29.53)	15 (32.61)	
IV	32 (13.39)	21 (10.88)	11 (23.91)	
V	4 (1.67)	4 (2.07)	0 (0)	
VI	1 (0.42)	1 (0.52)	0 (0)	
Treatment indication, n (%)				.003
Solar lentigines	120 (50.21)	108 (55.96)	12 (26.09)	
Nevi (nevus of Ota, Becker nevus, and Hori nevi)	5 (2.09)	2 (20.73)	3 (6.52)	
Ephelides	9 (3.77)	8 (4.15)	1 (2.17)	
Hyperpigmentation	13 (5.44)	11 (5.70)	2 (4.35)	
Lichen/Macular amyloid	1 (0.42)	1 (0.52)	0 (0)	
Seborrheic keratosis	10 (4.18)	8 (4.15)	2 (4.35)	
Café au lait spots	4 (1.67)	4 (2.07)	0 (0)	
Tattoo	66 (27.62)	44 (22.80)	22 (47.83)	
Ochronosis	11 (4.60)	7 (3.63)	4 (8.70)	
*Side effect location, n (%)				
Face	150 (62.76)	126 (65.28)	24 (52.17)	
Chest/Abdomen	14 (5.86)	9 (4.66)	5 (10.87)	
Back	14 (5.86)	13 (6.74)	1 (2.17)	
Upper extremities	44 (18.41)	32 (16.58)	12 (26.09)	
Lower extremities	9 (3.77)	6 (3.12)	3 (6.52)	
Two or more locations	7 (2.93)	6 (3.12)	1 (2.17)	
Not specified	1 (0.42)	0 (0.00)	1 (2.17)	

*Side effect location $P = .24$. *P* values from likelihood ratio chi-square test of all subgroups. All side effects reported include limited to moderate reported levels. Short-term side effects include patient reported adverse events with an occurrence <2 weeks. Long-term side effects include patient reported adverse events with an occurrence >2 weeks. Hyperpigmentation + 2 side effects include crusting and inflammation. Hypopigmentation + 3 side effects include scarring, itching, and inflammation. Swelling + 1 side effect includes bleeding. Crusting includes patients who reported crusting and mild crusting as a side effect. Swelling includes patients who reported swelling, limited swelling, and raised and bruised around edges. Erythema includes a patient who reported erythema and redness.

Table II. Adverse events by Fitzpatrick skin phototype

	Fitzpatrick skin phototype						
Adverse event type	I	II	III	IV	V	VI	Total, n (%)
No adverse events	11	99	57	21	4	1	193 (80.75)
Short term (<2 weeks)	0	18	15	6	0	0	39 (16.31)
Long term (>2 weeks)	0	1	0	5	0	0	6 (2.51)
Not specified	0	1	0	0	0	0	1 (0.42)
Total, n (%)	11 (4.60)	119 (49.79)	72 (30.13)	32 (13.39)	4 (1.67)	1 (0.42)	239 (100.00)

IRB approval status: Reviewed and approved by Boston University and Boston Medical Center IRB (H-37001).

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Conflicts of interest

None disclosed.

REFERENCES

1. Hu S, Yang CS, Chang SL, Huang YL, Lin YF, Lee MC. Efficacy and safety of the picosecond 755-nm alexandrite laser for treatment of dermal pigmentation in Asians-a retrospective study. *Lasers Med Sci*. 2020;35(6):1377-1383.
2. Wang Y, Qian H, Lu Z. Treatment of café au lait macules in Chinese patients with a Q-switched 755-nm alexandrite laser. *J Dermatolog Treat*. 2012;23(6):431-436.
3. Kawachi I, Daniels N, Robinson DE. Health disparities by race and class: why both matter. *Health Aff*. 2005;24(2):343-352.

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Oral dapsone for the treatment of generalized granuloma annulare: A retrospective case series

To the Editor: Granuloma annulare is a non-infectious granulomatous dermatosis. Although its etiology is unknown, some conditions have been reported in increased frequencies in patients with granuloma annulare compared with the general population, including thyroid disease, diabetes mellitus, dyslipidemia, and viral infections.[1] While localized disease tends to spontaneously resolve, generalized granuloma annulare (GGA) cases may persist for decades, and the treatment data are sparse.[1] Phototherapy and antimalarials are the first-line treatment for GGA, although retinoids, biologics, and small molecule immunosuppressants can also be used.[1] Dapsone may be viable; however, evidence is limited to studies comprising ≤10 patients.[2-4] Here, we evaluate the safety and efficacy of dapsone with a retrospective case series of 26 patients.

Institutional review board approval was obtained to review the medical records of patients from a single institution who received oral dapsone for GGA between 2010 and 2020. Patients without pretreatment biopsy and patients lost to follow-up were excluded. Outcomes were categorized as: complete clearance, partial response (fewer, flattened, or faded lesions), or no improvement.

Twenty-six patients—primarily Caucasian (100%) women (96%) with a mean age of 64 years—met the inclusion criteria (Table I). Lesions were most commonly plaque-type (24/26; 92%), and involved the lower extremities (23/26; 88%), upper extremities (21/26; 81%), trunk (17/26; 65%), and neck (2/26; 8%); 12 (46%) patients reported pruritus, 4 (15%) patients reported burning pain, and 13 (50%) patients were asymptomatic. The patients had mean disease duration of 5.6 years before initiating dapsone at a median daily dose of 100 mg (25-200 mg) for a mean duration of 9.8 months. Fourteen of 26 (54%) patients improved, and initial responses were observed within a mean of 2.3 months. However, the results were not consistently sustained, and 8 (57%) responders experienced flares following discontinuation. The patients who improved remained on dapsone for longer durations compared with those who did not improve (mean 16.0 vs 2.6 months), and perceived lack of efficacy was the most common discontinuation reason in non-responders (8/12; 67%).

Seventeen of 26 (65%) patients underwent dapsone monotherapy, including 6 of 13 (46%) responders. The most common concomitant medications in those who improved with dapsone were topical corticosteroids: betamethasone (2/14; 14%), clobetasol (2/14; 14%), and triamcinolone (2/14; 14%). Several agents were attempted before dapsone treatment but failed to yield results or caused unbearable side effects (Table I). Although dapsone was subjectively well-tolerated (2 patients complained of nausea), nearly 1 in 3 patients (8/26; 31%) experienced subclinical myelosuppression (median 12 months after initiating dapsone), which warranted treatment cessation. Dapsone is associated with a variety of local and systemic adverse effects that may preclude its viability.[5]

The management of GGA can be challenging. Granulomatous inflammation can be slow to both form and resolve, and the effects of therapy may not be observed for 3-6 months.[1] The evidence to support dapsone for GGA remains debatable as clinical responses may not be durable nor consistently achieved, and the patients may experience treatment-limiting side effects. However, these results contribute to the limited pool of data for a condition which has no definitive treatment option.

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