
Letters

Table. Comparison of the Change in MASI Scores for Each Treatment Group^a

Treatment ^b	Baseline (n = 17)	Treatment Conclusion (n = 17)	Follow-up (n = 16)	Change	
				Conclusion – Baseline (n = 17)	Follow-up – Baseline (n = 16)
Kligman formula combination cream	7.29 (4.11)	6.58 (3.30)	7.50 (4.39)	–0.71 (2.05)	–0.02 (1.06)
Kligman formula combination cream followed by laser treatment	7.66 (5.11)	7.81 (4.58)	7.69 (5.16)	0.15 (1.73)	–0.23 (0.76)
P value	NA	NA	NA	.006	.33

Abbreviations: MASI, Melasma Area and Severity Index; NA, not applicable.

^a Data are given as mean (SD) scores. Treatment conclusion indicates values recorded at the end of treatment; follow-up, 6 months after treatment completion.

^b Details of treatment regimens are in the Methods section.

significant difference was observed between the 2 groups (T_{10}). No difference could be found when results were analyzed according to the localization and duration of the melasma ($P > .99$ and $P = .87$, respectively). An increased vascularization was noted on the melasma lesions at baseline compared with perilesional skin using VISIA-CR RBX Red subsurface analysis and laser confocal microscopy. However, no decrease in vascularization was observed on the laser-treated side between the baseline and posttreatment visits. At the final visit, no changes in vascularization were noted between the 2 sides. No scarring or postinflammatory hyperpigmentation was noted.

Discussion | Our results show that Kligman formula combination cream is more effective than the copper bromide laser for treating melasma. At the 6-month follow-up, no difference was observed between the 2 approaches and, in both cases, the MASI scores were similar to those observed before treatment. Neither procedure prevented relapse despite the use of sunscreen in all the patients. The lack of changes in vascularization observed via both RBX Red subsurface analysis and laser confocal microscopy between the topical cream- and laser-treated groups suggests that the copper bromide laser did not effectively target the vascular component of melasma. These results show that Kligman formula combination cream remains the most effective treatment for melasma and show the crucial need for prospective randomized studies with long-term follow-up, compared with Kligman formula combination cream, to confirm the effectiveness of any new approach in treating melasma.

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1. Passeron T. Melasma pathogenesis and influencing factors: an overview of the latest research. *J Eur Acad Dermatol Venereol*. 2013;27(suppl 1):5-6.
2. Na JI, Choi SY, Yang SH, Choi HR, Kang HY, Park KC. Effect of tranexamic acid on melasma: a clinical trial with histological evaluation. *J Eur Acad Dermatol Venereol*. 2013;27(8):1035-1039.
3. Passeron T, Fontas E, Kang HY, Bahadoran P, Lacour JP, Ortonne JP. Melasma treatment with pulsed-dye laser and triple combination cream: a prospective, randomized, single-blind, split-face study. *Arch Dermatol*. 2011;147(9):1106-1108.
4. Passeron T. Long-lasting effect of vascular targeted therapy of melasma. *J Am Acad Dermatol*. 2013;69(3):e141-e142.
5. Lee HI, Lim YY, Kim BJ, et al. Clinicopathologic efficacy of copper bromide plus/yellow laser (578 nm with 511 nm) for treatment of melasma in Asian patients. *Dermatol Surg*. 2010;36(6):885-893.
6. Eimpunth S, Wanitphakdeedecha R, Triwongwanat D, Varothai S, Manuskiatti W. Therapeutic outcome of melasma treatment by dual-wavelength (511 and 578 nm) laser in patients with skin phototypes III-V. *Clin Exp Dermatol*. 2014;39(3):292-297.