

EVIDENCE BASED STATEMENT

DOMAIN **11**, Statement **07**

TOPIC: “C1 laser treatment complications management”

SEARCH TERMS & SOURCES

(laser) AND (transdermal) AND (complication)

INCLUSION CRITERIA

- Lower limb only
- Systematic Reviews, Meta-Analysis, Reviews
- Publication < 10 years, only ENG

SEARCH RESULT BEFORE - AFTER SELECTION

21/1

PERTINENT LITERATURE NOT IDENTIFIED BY THE LITERATURE SEARCH

1. Alster TS, Li MK. Dermatologic Laser Side Effects and Complications: Prevention and Management. Am J Clin Dermatol. 2020 Oct;21(5):711-723
2. Isedeh P, Kohli I, Al-Jamal M, et al. An in vivo model for postinflammatory hyperpigmentation: an analysis of histological, spectroscopic, colorimetric and clinical traits. Br J Dermatol. 2016 Apr;174(4):862-8
3. Alster TS, Khoury RR. Treatment of laser complications. Facial Plast Surg. 2009 Dec;25(5):316-2
4. Adamič M,, Palmetun-Ekbäck M, Boixeda P. Guidelines of care for vascular lasers and intense pulse light sources from the European Society for Laser Dermatology. J Eur Acad Dermatol Venereol. 2015 Sep;29(9):1661-78.
5. Mysore V, Anitha B, Hothota A. Successful treatment of laser induced hypopigmentation with narrowband ultraviolet B targeted phototherapy. J Cutan Aesthet Surg. 2013 Apr;6(2):117-9.
6. Alam M, Warycha M. Complications of lasers and light treatments. Dermatol Ther. 2011 Nov-Dec;24(6):571-80
7. Metelitsa AI, Alster TS. Fractionated laser skin resurfacing treatment complications: a review. Dermatol Surg. 2010 Mar;36(3):299-306.

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IDENTIFIED REFERENCES

Meesters AA, Pitassi LH, Campos V, et al. Transcutaneous laser treatment of leg veins. *Lasers Med Sci.* 2014 Mar;29(2):481-92.

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TEXT FOR INCLUSION IN THE DOCUMENT

DOMAIN 11, Statement 07, TOPIC: “**C1 laser treatment complications management**”

Transdermal lasers for lower limb teleangectasias and reticular veins treatment require proper deep knowledge of the device, setting, clinical and hemodynamic scenario. Appropriate device type and patient selection is fundamental to avoid complications. Most common complications are burns, scarring, dyspigmentation, ocular injury, and infection. Burns can be the consequence of wrong setting leading to an excessive energy delivery. Another cause can be found in the improper use of cooling devices. A procedural sudden graying of the treated area suggests an over-heating for which energy delivery should be stopped immediately. Crusts and ulcerations can appear days after the procedure and can represent a preliminary sign of further scarring and dyspigmentation. Careful balance in distancing the spots of energy delivery is important to avoid over heating as well as discontinuous treatment areas. Emollients and topical steroids can help the healing process.

[Meesters AA, Pitassi LH, Campos V, et al. Transcutaneous laser treatment of leg veins. Lasers Med Sci. 2014 Mar;29(2):481-92].

The eventual damage of the skin protective layer can favor infections: a related drug therapy is to be initiated promptly.

[Alster TS, Khoury RR. Treatment of laser complications. Facial Plast Surg. 2009 Dec;25(5):316-2]

Dyspigmentation in laser treatment can be characterized hypopigmentation and hyperpigmentation. The risk is higher in dark skinned and/or intensely tanned patients. Hypopigmentation can be covered by makeup or treated by melanin release stimulation by means of fractionated CO2 laser or narrow-band ultraviolet light treatments.

[Mysore V, Anitha B, Hosthota A. Successful treatment of laser induced hypopigmentation with narrowband ultraviolet B targeted phototherapy. J Cutan Aesthet Surg. 2013 Apr;6(2):117-9].

Ultraviolet exposition for at least 2 weeks after the treatment is suggested. Superficial chemical peels and hydroquinone can favor the hyperpigmentation resolution.

Accidental exposure of health professionals and patients to the laser emission must be taken into consideration as well. Use of a certified room and protective glasses is mandatory.

[Alster TS, Li MK. Dermatologic Laser Side Effects and Complications: Prevention and Management. Am J Clin Dermatol. 2020 Oct;21(5):711-723]

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STATEMENT FOR PUBLIC EVIDENCE-BASED AWARENESS

DOMAIN 11, Statement 07

“Laser treatment of leg anti-aesthetic veins must be performed by highly expert physicians limiting possible complications such as skin burns and pigmentations”

SELECTED REFERENCES

1. Meesters AA, Pitassi LH, Campos V, et al. Transcutaneous laser treatment of leg veins. *Lasers Med Sci.* 2014 Mar;29(2):481-92
2. Alster TS, Khoury RR. Treatment of laser complications. *Facial Plast Surg.* 2009 Dec;25(5):316-2
3. Mysore V, Anitha B, Hosthota A. Successful treatment of laser induced hypopigmentation with narrowband ultraviolet B targeted phototherapy. *J Cutan Aesthet Surg.* 2013 Apr;6(2):117-9
4. *Alster TS, Li MK. Dermatologic Laser Side Effects and Complications: Prevention and Management. *Am J Clin Dermatol.* 2020 Oct;21(5):711-723

identified LITERATURE BIAS

Unspecified operator expertise. Heterogeneous device settings

SUGGESTED NEXT LINES OF RESEARCH

RCT on laser complications treatment options