

Laser Hair Removal: Long-Term Results with a 755 nm Alexandrite Laser

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Abstract

BACKGROUND: Hypertrichosis is a common problem for which laser hair removal is becoming the treatment of choice. Optimal wavelength, pulse duration, spot size, fluence, and skin cooling parameters for various skin types have not yet been firmly established.

OBJECTIVE: To evaluate the long-term efficacy and safety of a 3-msec 755 nm alexandrite laser equipped with a cryogen cooling device for patients with Fitzpatrick skin types I–V.

METHODS: Eighty-nine untanned patients with skin types I–V underwent a total of 492 treatments of laser hair removal over a 15-month period. Each patient in the study underwent a minimum of three treatment sessions spaced 4–6 weeks apart (mean treatments 5.6). Retrospective chart review and patient interviews were used to establish hair reduction results. Treatment sites included the axillae, bikini, extremities, face, and trunk. A 3-msec pulse width, 755 nm alexandrite laser equipped with a cryogen spray cooling device was used in this study. Spot sizes of 10–15 mm were used. A spot size of 10 mm was used for fluences greater than 40 J/cm², a spot size of 12 mm was used for fluences of 35–40 J/cm², and spot sizes of 12 and 15 mm were used for fluences less than 30 J/cm². Fluences ranging from 20 to 50 J/cm² (mean fluence 36 J/cm²) were used.

RESULTS: The patients had a mean 74% hair reduction. Skin type I patients had an average of 78.5% hair reduction using a mean fluence of 40 J/cm² (35–50 J/cm²) and a 10–12 mm spot size (12 mm in more than 95% of treatments). Skin type II patients had a mean 74.3% hair reduction using a mean fluence of 38 J/cm² (30–40 J/cm²) and a 12–15 mm spot size. Skin type III patients had a mean 73.4% hair reduction using a mean fluence of 37 J/cm² (25–40 J/cm²) and a 12–15 mm spot size. Skin type IV patients had a mean 71.0% hair reduction using a mean fluence of 31 J/cm² (25–35 J/cm²) and a 12–15 mm spot size. A patient with skin type V had a 60% hair reduction using a mean fluence of 23 J/cm² (20–25 J/cm²) and a 12–15 mm spot size. The efficiency of hair removal directly correlates significantly with the fluence used. Rare side effects included transient postinflammatory hyperpigmentation (*n* = 9; 10%), burn with blisters (*n* = 1; 1%), and postinflammatory hypopigmentation (*n* = 2; 2%). All complications resolved without permanent scarring.

CONCLUSION: The 3-msec cryogen cooling-equipped alexandrite laser can safely and effectively achieve long-term hair removal in patients with skin types I–V. The best results are achieved in untanned patients with skin types I–IV.

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