

PBM Laser Therapy- Ophthalmology, Macular Degeneration

Photomed laser surgery. 2008 Jun; 26 (3): 241-5.

Low-level laser therapy improves eyesight in patients with age-related macular degeneration.

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OBJECTIVE: The aim of this case series study was to investigate the effects of low-level laser therapy (LLLT) in patients with age-related macular degeneration (AMD).

BACKGROUND INFORMATION: AMD affects a large proportion of the elderly population; however, current therapeutic options for AMD are limited. **PATIENTS AND METHODS:** A total of 203 patients (90 men and 113 women; mean age 63.4 +/- 5.3 years) with beginning ("dry") or advanced ("wet") forms of AMD (n = 348 eyes) included in the study. One hundred and ninety-three patients (mean age 64.6 +/- 4.3 years; n = 328 eyes) with cataracts (n = 182 eyes) or without cataracts (n = 146 eyes) were treated with the LLLT four times (twice a week) . A semiconductor laser diode (780 nm, 7.5 mW, 292 Hz, continuous emission) was used for transconjunctival irradiation of the macula for 40 s (0.3 J / cm²), resulting in a total dose of 1.2 J / cm² . Ten patients (n = 20 eyes) with AMD received dummy treatment and served as controls. Visual acuity was measured at each visit. The data were analyzed retrospectively using a t-test.

RESULTS: The LLLT significantly improved visual acuity (p <0.00001 from baseline) in 162/182 (95%) eyes with cataracts and 142/146 (97%) eyes without cataracts. The prevalence of metamorphopsia, scotoma and dyschromatopsia was reduced. Edema and bleeding improved in patients with wet AMD. The improved eyesight persisted for 3-36 months after treatment. The visual acuity in the control group remained unchanged. No adverse effects were observed in the treated patients.

CONCLUSION: In patients with AMD, LLLT significantly improved visual acuity with no undesirable side effects and thus can help prevent vision loss.

PMID: 18588438 [PubMed - indexed on MEDLINE].

The low level laser therapy improves vision in patients with age-related macular degeneration

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Abstract

Objective: The aim of this case series study was to investigate the effects of low-level laser therapy (LLLT) in patients with age-related macular degeneration (AMD).

Background data: AMD affects a large proportion of the elderly population; however, current therapeutic options for AMD are limited.

Patients and Methods: A total of 203 patients (90 men and 113 women; mean age 63.4 ± 5.3 years) with onset ("dry") or advanced ("wet") forms of AMD (n 348 eyes) were included in the study. One hundred and ninety-three patients (mean age 64.6 ± 4.3 years; n 328 eyes) with cataracts (n 182 eyes) or without cataracts (n 146 eyes) were treated with LLLT four times (twice per week). A semiconductor laser diode (780 nm, 7.5 mW, 292 Hz, continuous emission) was used for transconjunctival irradiation of the macula for 40 s (0.3 J / cm²), resulting in a total dose of 1.2 J / cm² led. Ten patients (n 20 eyes) with AMD received dummy treatment and received as controls. Visual acuity was measured at each visit. The data were analyzed retrospectively using a t-test.

Results: LLLT improved visual acuity (p 0.00001 from baseline) in 162/182 (95%) eyes with cataracts and 142/146 (97%) eyes without cataracts. The prevalence of metamorphopsia, scotomas, and dyschromatopsia was reduced. Edema and bleeding improved in patients with wet AMD. The improved eyesight persisted for 3-36 months after treatment. The visual acuity in the control group remained unchanged.

Adverse effects have been observed in patients undergoing therapy.

Conclusion: In patients with AMD, LLLT significantly improved visual acuity without undesirable side effects and can thus help prevent vision loss.

Low-level laser therapy improves visual acuity in adolescent and adult patients with amblyopia

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Objectives: The aim of this study was to investigate the effects of low-level laser therapy (LLLT) on visual acuity in adolescent and adult patients with amblyopia.

Background data: Currently, amblyopia can only be successfully treated in children.

The methods: 178 patients (mean age 46.8 years) with amblyopia due to ametropia (110 eyes) or

strabismus (121 eyes) were included in this single-blind, placebo-controlled study.

In LLLT, the area of the macula was irradiated through the conjunctiva from a distance of 1 cm for 30 s with laser light (780 nm, 292 Hz, 1: 1 duty cycle; average power 7.5 mW; spot area 3 mm²) from a distance of 1 cm. The treatment was repeated an average of 3.5 times, resulting in a mean total dose of 0.77 J / cm². No occlusion was used and no additional medication was administered. The best corrected distance visual acuity was determined using the Snellen projection optotypes. The multifocal visual evoked potential (M-VEP) was recorded in 12 patients (12 eyes). A control group of 20 patients (20 eyes) received sham treatment.

Results: Visual acuity improved in * 90% of eyes treated with LLLT ($p < 0.001$), with an increase of three in 56.2% and 53.6% of eyes with amblyopia caused by ametropia and strabismus, respectively or more lines were recorded. The treatment effect was maintained for at least 6 months. The mean M-VEP amplitude increased by 1207 nV ($p < 0.001$) and the mean latency was reduced by 7 ms ($p = 0.14$). No changes were found in the control group.

Conclusion: LLLT significantly improved visual acuity in adolescent and adult patients with amblyopia caused by ametropia or strabismus.

Photomedicine and Laser Surgery Volume 26, Number 3, 2008
