

Combined Erythema and Telangiectasia Respond Quickly to Combination Treatment With the Intense Pulsed Light Laser Followed Immediately by the Long-Pulsed Nd:YAG Laser

Kevin C. Smith, MD, FRCPC

Both the intense pulsed light (IPL) laser and the long-pulsed Nd:YAG laser have long been used to treat erythema and telangiectasia. The IPL laser is generally regarded as more effective for erythema and the brown dyschromia associated with sun exposure. The IPL laser also effectively activates aminolevulinic acid (ALA) in treating actinic damage. The long-pulsed Nd:YAG laser is effective in treating visible telangiectasia, often without causing purpura. Many patients present with combined erythema and telangiectasia that is often secondary to sun exposure, rosacea, or both. This article describes the safe, effective use of IPL laser treatment of the entire face (with or without prior ALA application) followed immediately by long-pulsed Nd:YAG laser treatment of visible telangiectasia to quickly and efficiently produce a broad range of aesthetic and medical improvements in facial skin.

Erythema and telangiectasia are common conditions that in most patients are combined in varying degrees (Figure 1). Common causes of erythema and telangiectasia are sun exposure and rosacea; smoking may exacerbate telangiectasia.¹ The incidence of erythema and telangiectasia increases with age. The progression rate of these conditions may be slowed by sun protection, treatment of underlying conditions such as rosacea, or both; however, erythema may be only partially reversed, and telangiectasia generally does not improve with sun protection or treatment with topical or systemic medications. To restore the patient's skin by correcting erythema and telangiectasia, it is generally necessary to give the patient 1 or more treatments with the intense pulsed light (IPL) laser, a vascular laser (532 nm; tunable dye, 585–595 nm; or long-pulsed Nd:YAG, 1064 nm), or both IPL and vascular laser (Figure 2). The long-pulsed Nd:YAG laser has the dual

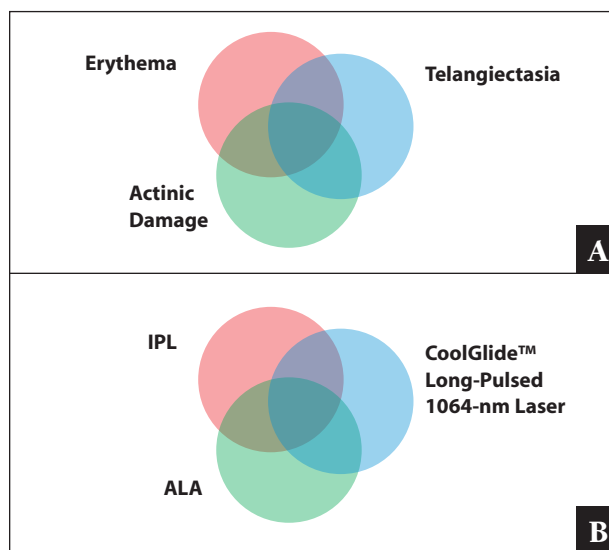


Figure 1. Patients usually present with varying combinations of erythema, telangiectasia, and actinic damage (A). These conditions benefit from combined treatment with the intense pulsed light (IPL) laser, the vascular laser, and aminolevulinic acid (ALA) application (B).

Dr. Smith is in Private Practice, Niagara Falls, Ontario, Canada.

Dr. Smith is a consultant and speaker for Cutera, Inc.

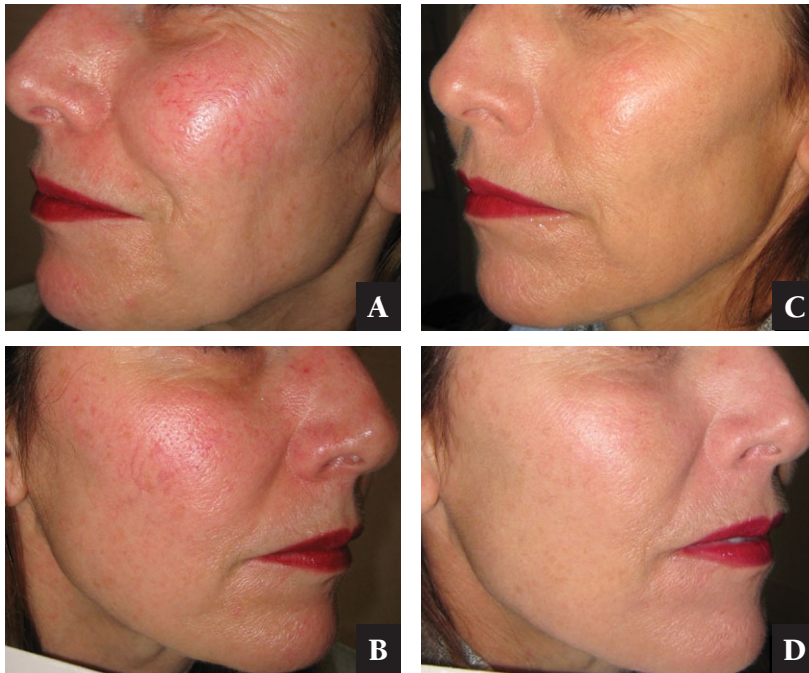


Figure 2. Fifty-year-old woman with a 10-year history of rosacea and superimposed sun damage before (A, B) and after (C, D) a single treatment session with 115 pulses of the intense pulsed light laser (LimeLight™, program A, 17 J/cm²) followed immediately by 400 pulses of the long-pulsed Nd:YAG laser (1064 nm, 3-mm spot, 20-ms pulse, 175 J/cm²). Metronidazole 1% topical cream with sun protection factor 15 was prescribed for once-daily use every morning long-term to reduce the relapse rate.

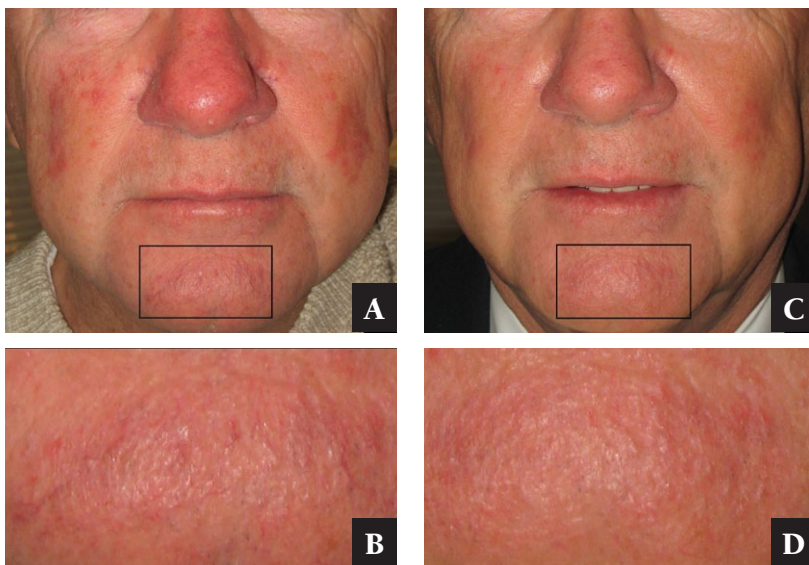


Figure 3. Patient before (A, B) and after (C, D) treatment with combined intense pulsed light laser, aminolevulinic acid, and 1064-nm, long-pulsed Nd:YAG laser treatment. This 62-year-old golfer and boater had a history of actinic keratoses that had responded inadequately to 5% fluorouracil cream over 6 months. He applied the cream to his face twice daily for 1 week and then applied aminolevulinic acid for 1 hour, after which he was treated with 350 pulses of the intense pulsed light laser (LimeLight™, program A, 12 J/cm², 2 passes at 90° of each other) followed by 149 pulses of the long-pulsed Nd:YAG laser (1064 nm). Metronidazole 1% topical cream with sun protection factor 15 was prescribed for once-daily use every morning long-term to reduce the rate of relapse.

advantages of avoiding purpura and penetrating more deeply into the skin than 532- or 585-nm lasers. Patients presenting with erythema and telangiectasia, particularly those older than 50 years, often have varying degrees of actinic damage and may have a history of treatment for actinic keratoses, skin cancer, or both. To reduce the medical and aesthetic burdens of precancerous skin lesions and the rate at which such lesions progress to skin cancer, patients presenting with erythema and telangiectasia may benefit from the addition of aminolevulinic acid (ALA) to their treatment (Figure 3).

COMBINATION OF IPL AND VASCULAR LASER IS MORE EFFICIENT

Patients who desire treatment with the IPL laser (with or without prior ALA application), a vascular laser, or both tend to be busy people. They prefer to have as much done in a single session as possible. Combining several treatment modalities in 1 session is efficient and may be less expensive than individual modalities administered in separate sessions. Total downtime is lower and the severity of posttreatment erythema is not much greater if treatment modalities are combined. This is the case when treatment with the long-pulsed Nd:YAG laser is combined with the IPL laser and ALA application; any erythema from laser treatment is masked by the erythema from the combined IPL-ALA modality. Another benefit of fewer treatment sessions is the greater likelihood of completing the treatment program.

Applying ALA for 1 hour generally produces moderate erythema and vasodilatation. This increases the amount of chromophore (hemoglobin) available to absorb laser energy, thereby increasing the efficiency of the combined IPL laser and long-pulsed Nd:YAG laser treatment. This may make the treatment safer by increasing the contrast between target (vascular) and nontarget tissue. The erythema

and vasodilatation from IPL laser treatment (with or without prior ALA application) also increase the amount of chromophore to absorb laser energy; vasodilatation aids in identifying vascular targets.

It is wise to photograph all patients before treatment to aid in assessing their response to therapy when they return for follow-up and to help them appreciate the degree of improvement.

For patients who present only with erythema, I administer a single pass of the IPL laser that is optimized for vascular targets (LimeLight™, program A, 17–20 J/cm²) followed immediately by the CoolGlide® long-pulsed Nd:YAG laser (1064 nm, 3-mm spot, 15- to 20-ms pulse, 175 J/cm²). In cases of combined erythema and brown dyschromia, I generally administer a single pass of the IPL laser that is optimized for combined erythema and brown dyschromia (LimeLight, program B, 17–20 J/cm²) followed immediately by the CoolGlide long-pulsed Nd:YAG laser (1064 nm, 3-mm spot, 15- to 20-ms pulse, 175 J/cm²).

When there is actinic damage and ALA treatment is desired, I treat as described in the preceding paragraph but administer 2 passes of the IPL laser, at 90° of each

other, using 75% of the fluence that would have been used for a single pass. The cumulative energy dose from the IPL component of treatment is thus 150% of that which would be administered in a single pass: 25.5 to 30 J/cm². This dose of energy is sufficient to properly activate ALA.

CONCLUSION

Combination treatment with the IPL laser followed immediately by long-pulsed Nd:YAG laser has proven to be safe and produces greater aesthetic improvement across a broader range of erythema and gross telangiectasia than could be achieved by using either modality alone. This has been of great benefit to patients, and the improved efficacy and efficiency have enlarged the pool of patients who wish to treat their combined erythema and telangiectasia.

REFERENCES

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