

Comparative Cutaneous Histology from the Treatment Using a Picosecond Alexandrite and Nd:YAG Laser with a Fractional Optic

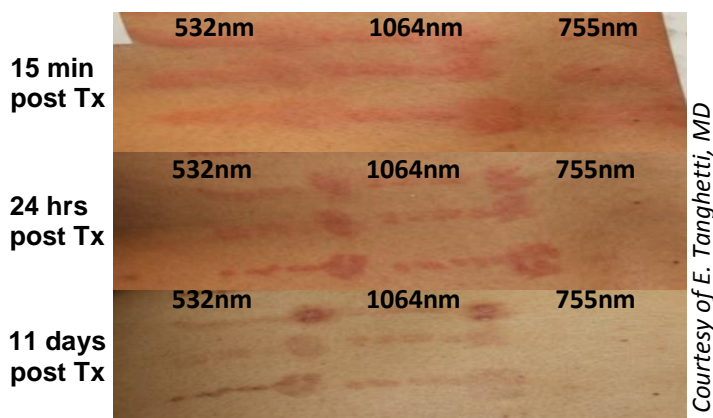
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Study Design:

- An Nd:YAG 532nm and 1064nm picosecond laser, and a 755nm picosecond alexandrite laser were used with diffractive lens array and flat optic.
- Clinical and photographic evaluations of single pass treatment at 15 minutes, 24 hours, and 1-7 weeks post Tx.
- Biopsies taken 24 hours post Tx.

Results:

- Subjects with MI greater than 12 treated with the 755nm wavelength with Focus optic demonstrated isolated, well-defined intra-epidermal vacuoles without dermal involvement.
- Subjects treated with the 532nm and 1064nm wavelength and Focus optic showed epidermal necrosis, occasional epidermal vacuoles and dermal vascular damage with hemorrhage across all MI's and skin types.



Skin type IV, MI 20 fractional optic

532nm		1064nm		755nm	
8.8mm	0.16 J/cm ²	10mm	0.25 J/cm ²	10mm	0.25 J/cm ²
8.0mm	0.20 J/cm ²	9.0mm	0.31 J/cm ²	8mm	0.40 J/cm ²
5.6mm	0.41 J/cm ²	6.5mm	0.60 J/cm ²	6mm	0.71 J/cm ²

Conclusion:

- The 755nm Focus optic treatments demonstrated reproducible and highly specific areas of epidermal damage while the 532nm and 1064nm wavelengths with Focus optics resulted in relatively nonspecific focal areas of epidermal necrosis as well as vascular damage with hemorrhage.
- Among flat optic usage, 532nm results in superficial crusting in all skin types, and both 1064nm and 755nm were well tolerated in all skin types.

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