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## Combined 585 nm pulsed-dye and 1,064 nm Nd:YAG lasers for the treatment of basal cell carcinoma.

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### Author information

### Abstract

**BACKGROUND AND OBJECTIVE:** Basal cell carcinomas (BCCs) have supporting vasculature that serves as a target for vascular selective lasers. The objective of this study was to determine the effect of repeated **treatment** with a combined 585 nm pulsed dye laser (PDL) and 1,064 nm Neodymium Yttrium Aluminum Garnet (Nd:YAG) laser on BCCs of superficial and nodular subtypes of varying diameters.

**STUDY DESIGN/MATERIALS AND METHODS:** Ten subjects with 13 biopsy-proven BCCs received four combined PDL and Nd:YAG at treatments 2-4 week intervals. None of the BCCs met the criteria for Mohs micrographic surgery. The tumor and 4 mm of peripheral skin were treated using standardized parameters delivered with a 7 mm spot with 10% overlap. The treated area was excised and evaluated histologically for residual tumor. The primary study endpoint was histologic clearance of tumor. The secondary study endpoint was blinded investigator assessment of clinical endpoint and adverse effects.

**RESULTS:** Approximately half of all tumors showed a complete response to four combined PDL and Nd:YAG treatments (n = 7/12, 58%). When stratified by size, 75% of all tumors <1 cm in diameter (n = 6/8) showed complete response. Tumor histologic types among the complete responders included superficial and nodular BCCs. All subjects with incompletely responding BCCs were on various forms of anticoagulation, which we hypothesize, may inhibit laser-mediated thrombosis necessary for the clinical effect. Blinded investigator assessment suggests that biopsy related erythema improves with subsequent laser treatments.

**CONCLUSIONS:** Combined PDL and Nd:YAG laser is an effective means of reducing tumor burden in patients with BCC and may be a promising, emerging alternative **therapy**. Factors influencing **treatment** response includes the concomitant use of anticoagulation. Further studies are needed to investigate and optimize the utility of this **treatment** protocol.

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**KEYWORDS:** Nd:YAG; basal cell carcinoma; pulsed-dye laser

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