Pulsed Dye Laser Clears BCCs, Small Study Finds

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CHICAGO — Pulsed dye lasers may add a third option to the realm of treatments for superficial and nodular basal cell carcinomas less than 1.5 cm in diameter, according to Dr. Zeina Tannous, who performed a study of the treatment in 14 patients.

Unlike surgical excision or Mohs micrographic surgery, pulsed dye lasers selectively target vessels, said Dr. Tannous of Harvard Medical School, Boston, and chief of Mohs micrographic surgery at the Veterans Administration Hospital in Boston.

"Pulsed dye laser may allow for selective photothermolysis of pathological blood vessels and thus could be a nonsurgical treatment method for basal cell carcinomas, and this is important in patients with multiple tumors for whom surgery may be risky."

In her study, presented at the annual meeting of the American Society for Dermatologic Surgery, Dr. Tannous and her colleagues treated 14 patients with 23 biopsy-proven primary basal cell carcinomas (BCCs) located on their extremities and trunk. None of the patients had recurrent or infiltrative lesions. The BCCs ranged in diameter from 0.5 cm to 7 cm, and most were on the trunk.

All but two patients received four laser treatments at intervals of at least 2 weeks. The wavelength used was 595 nm at 15 J/cm^2, with pulse durations of 3 milliseconds and a 7-mm minimally overlapping spot size with a single pass and no dynamic cooling.

Two weeks after the final laser treatment, the BCCs were removed by disk incision, and the tissue was stained using hematoxylin and eosin to observe the histologic response to treatment.

Interestingly, the two patients who did not receive the full four laser treatments—one received a single treatment and the other underwent three treatments—had no residual BCC in their excised lesions, Dr. Tannous said. A complete response was no residual basal cell carcinoma findings in excised tissue; incomplete response was evidence of any residual basal cells.

Of the 21 treated tumors, 13 (62%) completely responded. In a comparison, complete responses were seen in 2 of 21 control tumors that underwent diagnostic biopsy before being excised and were matched to the study lesions for size, histologic type, and location. "This [observation] proved that the response we're seeing is due to the selective laser treatment, and not due to the nonspecific inflammation related to the diagnostic biopsy," she explained.

Size appeared to be associated with the probability of a complete response to laser treatment. The average BCC was 1.1 cm in the complete responders and 2.8 cm in the incomplete responders.

Based on diameter, all small BCCs (under 0.7 cm) cleared completely; medium BCCs (0.7-1.4 cm) cleared completely in 92%; and large lesions (more than 1.4 cm) cleared in 22%.

At greater than 90%, the complete clearance rate for small and medium lesions treated by laser was significantly higher than the 61% rate seen in the matched controls.

"While these data show promise for the use of PDL [pulsed dye laser] in the treatment of both superficial and nodular basal cell carcinomas smaller than 1.5 cm, we cannot make clinical recommendations until we've completed a larger study with more patients," Dr. Tannous concluded.

Continued research should also demonstrate whether more treatment sessions would produce better results for larger BCCs.

Dr. Tannous reported having no conflicts of interest. ■

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'Renal failure patients are a toxic soup of metals—calcium, iron, zinc, copper, aluminum—all sorts of metals.'

Dr. Whitney A. High, who believes that nephrogenic systemic fibrosis is caused by a 'collusion of coconspirators' that includes gadolinium, p. 37