Photodynamic therapy of locoregional breast cancer recurrences using a chlorintype photosensitizer

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Chest wall recurrences are a frequent problem in patients treated by mastectomy for breast cancer. Surgery and ionizing radiation are established treatment modalities in these cases. Photodynamic therapy (PDT) provides an alternative treatment modality using a photosensitizer and laser light to induce selective tumor necrosis. PDT was performed as compassionate use in 7 patients aged 57.6 years (±12.6 SD). A total of 89 metastatic skin nodes were treated in 11 PDT sessions. As photosensitizer meta-tetra(hydroxyphenyl) chlorin (m-THPC) was applied intravenously. Patients (n = 3) photosensitized with a drug dose of 0.10 mg/kg bodyweight were irradiated 48 hr after drug application at a light dose of 5 J/cm². Patients (n = 4) were illuminated by an optical dose of 10 J/cm² 96 hr after photosensitization with 0.15 mg/kg. Laser light at a wavelength of 652 nm was generated by a diode laser and applied by a front lens light diffuser using a fluence rate of 20–25 mW/cm². PDT using m-THPC resulted in complete response in all patients. Response to treatment did not differ when using the 2 different drugdose protocols. Healing time depended mainly on the size of the illumination field but not on the lightdose. Pain score usually raised 1 day after PDT and lasted at higher levels for about 10 days. Healing time usually ranged between 8–10 weeks. Photodynamic technique offers a minimal-invasive, outpatient treatment modality for recurrent breast cancer on the chest wall with few side effects, high patient's satisfaction and with possible repetitive application.

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