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mentation (p=0.012). The use of combined organ-preserving treatment, including PDT followed by brachytherapy, helps accelerate the rate of tumor regression at periods of 3, 6 and 12 months (p <0.05), achieve complete tumor regression in 86% of patients, as well as a significant reduction in signs of intratumor vascularization (p<0.05). The possibility of using transscleral and hybrid PDT in the treatment of UM is determined by preliminary results demonstrating the expansion of possibilities for organ-preserving treatment of large tumors due to direct cytotoxic, antiangiogenic effects on the tumor substrate, as well as potentiation of the effect of radiation therapy.
Conclusions. The use of PDT with chlorine e6 in the treatment of patients with UM expands the possibilities and opens up prospects in the organ-preserving treatment of this pathology, including large tumors. It seems promising to further improve laser methods using modern production technologies, process automation, precise dosimetry with the study of the threshold of safe laser radiation, as well as an individual selection of parameters and the development of modern instruments.

Conflict of Interest Disclosures: The authors declare that there are no potential conflicts of interest to disclose in this article.

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Is Blood Flow and Blood Volume informative for Photosensitizer uptake? In silico Simulation and in vivo MRI and SFDI Imaging study

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Significance: Knowledge of the spatial photosensitizer accumulation is paramount for personalized PDT treatment planning.
Approach: The spatial resolution at which Photosensitizer accumulation can result in significant alterations of an optimum interstitial light source placement and reduction of possible morbidity.
Results: Simulation studies showed that the spatial resolution of Blood flow and Blood volume must be equal to or larger than the effective attenuation coefficient of PDT treatment wavelength. While normal brain showed a correlation between blood flow, volume, and chlorin e6 accumulation, in tumors, only blood flow showed a correlation with photosensitizer uptake.
Conclusions: Blood flow imaging can provide a non-invasive method to predict chlorin e6 accumulation prior to completing interstitial PDT treatment planning

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The effects of iodine radicals generated via Photodynamic Inactivation with potassium iodide

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Photodynamic Inactivation (PDI) has been intensively investigated as an approach against microorganisms. To enhance PDI's effectiveness, the use of potassium iodide (KI) with photosensitizers has been explored. This study evaluated the mechanisms involved in KI's enhancement of PDI. First, the photodegradation study with methylene blue (MB) with and without KI showed that KI accelerates the degradation of the photosensitizer and promotes iodine radicals generation during PDI. Antimicrobial evaluations demonstrated that PDI+KI eradicated *Pseudomonas aeruginosa* and *Staphylococcus aureus* biofilms. Iodine radicals were confirmed to be responsible for the inactivation, as both bacterial were susceptible to iodine generated through electrolysis. When the photobleaching of MB+KI was performed in low oxygen condition, the MB degradation was similar to the MB without KI. Then, singlet oxygen is crucial to produce iodine radicals. In conclusion, the iodine radicals generated via PDI with KI was responsible for the bacterial killing and offers a potent antimicrobial strategy.

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