Tumor histopathology following new sensitizers: dithiaporphyrin- and sulfoxaporphyrin-mediated photodynamic therapy.

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Rok wydania

1999

Czasopismo

ANTICANCER RESEARCH

Numer woluminu

19

Strony

5385-5392

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Our main aim was to evaluate tumor histopathology following new sensitizer-mediated photodynamic therapy (PDT). In order to complete our studies we decided to use photosensitizers, i.e. dithiaporphyrin (DTP) and sulfoxaporphyrin (OXA) in combination with halogen lamp irradiation of presensitized tumors. The doses of sensitizers were: 2.5, 5.0, 7.5 and 10.0 mg/kg of body weight and total light doses were: 50, 100 and 150 J/sq.cm at the selected wavelength. Following such a treatment we have evaluated tumor necrosis of BFS1 fibrosarcoma growing on BALB/c mice. Together with tumor necrosis evaluation we have examined skin response to photodynamic treatment. We have found that both new sensitizers caused significant tumor damage at no skin alterations. The induction of tumor necrosis seemed to be dose dependent, i.e. higher photodynamic doses (sensitizer dose x light dose) resulted in more severe damage to the tumors than the lower doses. Our study showed that BFS1 fibrosarcoma is highly sensitive to PDT after application of new sensitizers. Both compounds can be considered as potent tumor photosensitizers in future clinical trials.