AT-50. ALA-BASED PHOTODYNAMIC THERAPY IN RECURRENT MALIGNANT GLIOMA - A PILOT STUDY

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OBJECTIVE: Recurrent malignant glioma (RMG) is an orphan disease without standard therapeutic recommendation. ALA-based photodynamic therapy (PDT) for malignant gliomas has been investigated in-vivo and in-vitro, suggesting potential efficacy. We report our experience with ALA-PDT in malignant recurrent glioma patients. METHODS: Data of seven patients with diagnosis of RMG, treated by PDT in a compassionate setting between 02/2011-05/2014 were analyzed. All seven patients received 20 mg/kg bodyweight ALA orally 4-6 hours prior to surgery. A stereotactic biopsy was taken followed by PDT administration with a constant tissue power of 200 mW/cm being applied by diode laser into the target area for one hour. RESULTS: Prior to PDT, patients underwent two brain surgeries (median). Six patients received radiotherapy with a minimum of 60 Gy, temozolomide (TMZ) was taken by four patients and two patients were TMZ naive prior to PDT. Histologically, five glioblastomas (GBM), one anaplastic oligodendroglioma (AO) and one anaplastic astrocytoma (AA) were detected. MGMT negative promotor methylation status (PMS) was observed in five cases and positive MGMT-PMS in one tumor. After PDT, three patients received TMZ, one Avastin, one Lomustine, one was given no further chemotherapy, and in one patient data was missing. A median PFS of two and OAS of 13 months after PDT treatment, as well as a median OAS from first diagnosis of 24 months was reached. Brain edema responding to steroids was detected in three patients during first 24 hours after PDT. One patient treated with Bevacizumab showed wound healing complication. No other severe effects occurred. CONCLUSION: PDT was well tolerated and a median OAS of 13 months and complete OAS of 24 months suggest a survival advantage by PDT as an additive surgical treatment option in RMG.