SURG-20. A MULTICENTER SURVIVAL ANALYSIS OF UPFRONT LASER-ABLATION FOR TREATMENT OF PATIENTS WITH NEWLY DIAGNOSED Glioblastoma
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INTRODUCTION: Laser-ablation is a new treatment modality for difficult-to-access brain tumors. Limited data is available regarding the outcome of laser-ablation for patients with newly diagnosed glioblastoma (nGBM). We evaluated the outcomes of nGBM patients utilizing laser-ablation via the NeuroBlate system (NBS). METHODS: 32 nGBM patients had upfront treatment with NBS in Cleveland Clinic, Washington University in St. Louis, and Yale University (6/2011-12/2014). 8 patients with multifocal nGBMs or no radiation/chemotherapy after surgery were excluded. Study endpoints: progression-free survival (PFS - time to progression or death from any cause), time to progression (TTP; like PFS but with censored 4 patients who died with causes other than progression), overall survival (OS - time to death from any cause), disease-specific PFS (DS-PFS), and disease-specific OS (DS-OS). Deaths from reasons other than progression were considered a competing risk for DSPFS and DSOS. Extent of ablation was defined by NBS software as blue (43°C for 10 minutes) and yellow (43°C for 2 minutes) thermal-damage-threshold (TDT)-lines. Using recursive partitioning algorithm three prognostic groups were identified in respect to coverage of tumor by TDT-lines as favorable (n = 8 patients); intermediate (n = 9 patients) and unfavorable (n = 7 patients). RESULTS: 58% were male and median age was 54 years. The median tumor volume was 9.33 cm3. 18 (75%) patients progressed and 15 (62%) patients have died during extended follow up. Median OS is estimated to be 14.4 months, median TTP 5.3 months, and median PFS 4.3 months. In multivariate analysis, NBS coverage groups were significant prognostic factor for PFS (p = 0.008), TTP (p = 0.0005), DS-PFS (p = 0.0002), and DS-OS (0.0001). Only age > 70 years (p = 0.04) and tumor volume > 11 cm3 (p = 0.03) were significant poor prognostic factors for OS. CONCLUSIONS: The NBS coverage groups are independent predictor of all outcomes other than OS that can be translated as surgical extent of resection in nGBM outcome.