

MTR-18 Predictive Biomarkers Of Bevacizumab Response In Recurrent Glioblastoma Patients - DTU Orbit (08/11/2017)

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Bevacizumab (BEV) plus chemotherapy has shown activity in recurrent glioblastoma (GBM). However, the prognosis varies and only one third of patients have a durable clinical response to BEV combination therapy. Recent findings from a randomized phase-3 study (AVAglio) indicate that patients with the proneural GBM subtype have a survival benefit when treated with BEV in combination with standard treatment. However, no validated biomarkers able to predict BEV response have been identified and the biology reflecting a clinical BEV response is poorly understood. The primary objective of this study was to evaluate the predictive and prognostic value of GBM subtypes in recurrent GBM patients treated with BEV therapy. The secondary objective was to identify biomarkers able to predict response to BEV therapy in recurrent GBM patients. **METHODS:** A total of 90 recurrent GBM patients treated with BEV combination treatment according to previously published protocols were included. Inclusion criteria: BEV plus irinotecan treatment in the period between May 2005-2011; available GBM tissue (according to WHO); response evaluable (RANO). RNA was extracted from laser microdissected tumor tissue and analyzed by the NanoString platform covering 800 genes. Raw data was assigned to molecular subtypes for each of the samples using the PAMR classifier model, previously trained on the AVAglio dataset. By performing a t-test, comparing gene profiles of patients responding versus progressing on BEV novel candidate biomarkers were identified. Candidate biomarkers were analyzed by logistic regression and Cox regression modelling response and survival endpoints, respectively. Biomarkers associated with response were added to a prognostic model consisting of three independent prognostic factors: Corticosteroid use, neurocognitive deficit and multifocal disease. **RESULTS:** Molecular subtypes were not associated with response or survival. However, two independent predictive biomarkers (gene1 down-regulated and gene2 up-regulated in responders, respectively) of BEV response and survival were identified. Results will be presented.

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