OS7.2 MEASURING CHANGE IN HEALTH-RELATED QUALITY OF LIFE: THE ADDED VALUE OF ANALYSIS ON THE INDIVIDUAL PATIENT LEVEL IN GLIOMA PATIENTS IN CLINICAL DECISION MAKING

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BACKGROUND: Health-related quality of life (HRQoL) is often used as an outcome in glioma research, reflecting the impact of disease and treatment on a patient's functioning and wellbeing. Data on changes in HRQoL scores may provide important information for clinical decision-making, but different analytical methods may lead to different interpretations of the impact of treatment on HRQoL. This study aimed to examine three different methods to evaluate change in HRQoL, and to study whether these methods result in different interpretations. **MATERIAL AND METHODS:** HRQoL and sociodemographical/clinical data from 15 randomized clinical trials were combined. Change in HRQoL scores was analyzed in three ways: (1) at the group level, comparing mean changes in scale/item scores between treatment arms over time, (2) at the patient level per scale/item by calculating the percentage of patients that deteriorated, improved or remained stable on a scale/item per scale/item, and (3) at the individual patient level combining all scales/items. **RESULTS:** Baseline and first follow-up HRQoL data were available for 3727 patients. At the group scale/item level (method 1), only the item 'hair loss' showed a significant and clinically relevant change (i.e. ≥10 points) over time, whereas change scores on the other scales/items showed a statistically significant change only (all p<.001, range in change score: 0.1–6.2). Analyses on the patient level per scale (method 2) indicated that, while a large proportion of patients had stable HRQoL over time (range 27–84%), many patients deteriorated (range: 6–43%) or improved (range: 8–32%) on a specific scale/item. At the individual patient level (method 3), the majority of patients (86%) showed both deterioration and improvement, while only 1% of the patients remained stable on all scales. Clustering on clinical characteristics (WHO performance status, sex, tumor type, type of resection, newly diagnosed versus recurrent tumor and age) did not identify subgroups of patients with a specific pattern of change in their HRQoL score. **CONCLUSION:** Different analytical methods of changes in HRQoL result in distinct interpretations of treatment effects, all of which may be relevant for clinical decision-making. Additional information about the joint impact of treatment on all outcomes, showing that most patients experience both deterioration and improvement, may help patients and physicians to make the best treatment decision.

OS7.3 HEALTH-RELATED QUALITY OF LIFE (HRQOL) EVALUATION IN THE REGOMA TRIAL: A RANDOMIZED, PHASE II CLINICAL TRIAL ANALYZING REGORAFENIB ACTIVITY IN RELAPSED GLIOBLASTOMA PATIENTS

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BACKGROUND: REGOMA trial showed that regorafenib (REG) significantly improved OS and PFS in patients (pts) with relapsed GBM with respect to lomustine (LOM). REG showed a different toxicity profile compared to LOM. Here, we report final results of the HRQoL assessment, a secondary end point. **MATERIAL AND METHODS:** HRQoL was measured using the European Organization for Research and Treatment of Cancer (EORTC) core questionnaire (QLQ-C30) and brain module (QLQ-BN20) administered before any MRI assessments, every 8 weeks (+/- 2 weeks) until disease progression. To evaluate treatment impact on HRQoL, questionnaires at progression were excluded. Mixed-effect linear models were fitted for each of the HRQOL domain to examine the change over progression-free time within and between arms. The models included the time of questionnaire assessment, the treatment group and their interaction, as fixed effects, and a compound symmetry covariance structure for the random effects. Differences of at least 10 points were classified as a clinically meaningful change. To correct for multiple comparisons and to avoid type I error, the level of significance was set at P=0.01 (2-sided). **RESULTS:** Of 119 randomized pts, 117 partecipated in the HRQoL evaluation, and 114 had a baseline assessment (n=56 REG; n=58 LOM). No statistically significant differences were observed in any generic or cancer specific domain during treatment in the REG and LOM arms, or between the two arms, except for the appetite loss scale which was significantly worse in PTS treated with REG (Global mean 14.7 (SD=28.6) vs 7.6 (SD=16.0); p=0.0081). The rate of pts with a clinically meaningful worsening for appetite loss was not statistically different between the two arms (9 out of 24 and 0 out of 13 in the REG and LOM arm, respectively;p=0.02). **CONCLUSION:** In the REGOMA trial, HRQoL did not change during regorafenib treatment. Pts treated with regorafenib and lomustine reported no significant difference in HRQoL.

OS7.4 CALCULATING THE NET CLINICAL BENEFIT IN BRAIN TUMOR CLINICAL TRIALS BY COMBINING SURVIVAL AND HEALTH-RELATED QUALITY OF LIFE DATA USING TWO METHODS: QUALITY ADJUSTED SURVIVAL EFFECT SIZES (QASES) AND JOINT MODELLING (JM)

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BACKGROUND: The impact of treatment on both the quality and the quantity of life, i.e. the 'net clinical benefit', should be considered to inform glioma patients and facilitate shared decision making. We applied two methods (i.e. Quality Adjusted Effect Sizes (QASES) and Joint Modelling (JM)) that combine survival and health-related quality of life (HRQoL) data into one outcome, to gain insight in the net clinical benefit of a treatment strategy. In addition, we assessed if both methods result in similar interpretations. **MATERIAL AND METHODS:** We calculated the net clinical benefit in one randomized controlled trial, EORTC 26951 comparing radiotherapy (RT) + PCV chemotherapy versus RT alone, as a proof of concept for other trials. With the QASES method, effect sizes for differences in survival and HRQoL between treatment arms were calculated. Next, the combined effect size can be determined by weighing the emphasis put on survival or HRQoL (e.g. survival more important). JM allows simultaneous modeling of a longitudinal outcome (HRQoL), and a time-to event outcome (survival). HRQoL scales/items that were selected for primary analysis in the main study were also selected for this analysis: fatigue, global health, social functioning, communication deficit, seizures, physical functioning, and nausea/vomiting. **RESULTS:** 288/386 patients completed baseline HRQoL forms and were included in the analysis. Overall survival (OS) was significantly longer with combined treatment (difference of