

the maximal channel number, 896; the smallest x-ray focus size, 0.8 x 0.9 mm). RESULTS: Until July 2019, 168 patients with brain tumor underwent UHRCT angiography. As high resolution image could visualize cortical arteries and cortical veins clearly, it helped to decide approach route to the tumor and achieve accurate biopsy of even small lesion. Identification of tumor feeders and passing arteries allowed for efficient feeder coagulation and preservation of passing artery, avoiding the ischemic change of surrounding brain. Improved image reconstruction could visualize perforating arteries, which helped to preserve perforator by predicting the location during tumor removal. CONCLUSION: UHRCT angiography can visualize even tiny arteries and veins around the tumor, and contributes to avoid the risk of ischemic complication.

## NEURO-COGNITIVE FUNCTION/QOL/PATIENT CARE/PALLIATIVE CARE (NQPC)

### NQPC-01

#### CURRENT STATUS AND PROBLEMS OF ADVANCE CARE PLANNING AND PALLIATIVE CARE FOR MALIGNANT BRAIN TUMOR

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Purpose Genomic medicine is in progress, but the median survival of glioblastoma is 14–16 months. It seems to have the same life prognosis as stage 4 like unresectable pancreatic cancer, lung cancer and colon cancer. Palliative care including Advance care planning (ACP) at first diagnosis of glioblastoma is important. We conducted a questionnaire survey to understand the current status of Japanese oncologists. Method In July 2018, a questionnaire of 37 items was sent by e-mail to 767 members of Japanese Society of Neuro Oncology, and in August replies were received from 154 persons (20%). The same 22-item questionnaire in 2012–2013 was compared internationally with a report (Walbert T., et al., 2015) by Society of NeuroOncology and the European Association of NeuroOncology. In addition, we compared domestically with a 30-item questionnaire (Narita et al. 2009) in 2007. The Nonparametric Mann-Whitney's U test was mainly used. Result 1 Characteristics of Japan in comparison with Western countries (p<0.01): 1. The number of doctors in charge is overwhelmingly male. 2. The specialty is predominantly neurosurgeons. 3. Aging of NeuroOncologists. 4, medical treatment place: the proportion of university is low. 5, frequent regular examination of the patient. Result 2 Changes compared with domestic (Japan) data 11 years ago (p<0.01): 1 Explaining the condition in more detail. 2. Explaining to not only the family but also the patient. 3. Continuing chemotherapy more aggressively. 4. The place of death: decreasing at hospitals and increasing at home. 5, Frequency with a respirator decreased. 6, About 70% at the end of the period, nasal injection and gastrostomy are applied. Conclusion In the treatment of malignant brain tumors in Japan, a male neurosurgeon who has over 15 years of experience actively continues chemotherapy and appears to see it with nasal injection.

### NQPC-03

#### PROGNOSTIC SIGNIFICANCE OF QUALITY-OF-LIFE EVALUATION OVER TIME IN CLINICAL PRACTICE FOR PATIENTS WITH GLIOBLASTOMA

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BACKGROUNDS: Evaluation of quality of life (QOL) has been considered as an indispensable modality for assessment of treatment impact for patients with malignant brain tumor, especially glioblastoma. However, changes in patients' QOL under clinical practice with current standard of care (SOC) have not been clearly and routinely explored, so that solid baseline QOL data under SOC are not available for reliable comparison with those with novel treatments. Here we retrospectively examined changes in QOL during SOC in glioblastoma patients. PATIENTS AND METHODS: Patients with histologically confirmed glioblastoma treated in our institute from April 2016 to April 2019, who underwent QOL evaluations using EORTC QLQ-C-30/BN-20 were eligible. Outcomes were assessed with clinical factors including therapeutic regimens. RESULTS: Forty-two patients, median age 64 yo (25–87), male/female 26/16, were identified having longitudinal QOL data along with medical records. Median initial KPS and mini-mental state examination (MMSE) score were 70 (20–90) and 27, respectively, suggesting this cohort containing those in good performance status. In four patients whose QOL queries were answered by a family, median MMSE was 16, indicating the impaired NCF affect self-report ability. Long term survivors without progression remained at an adequate functional scale level, while

those who recurred declined in functional scale after progression, often accompanied with an increase in symptom scales associated with tumor location. The domains of declined functional scales varied among patients, and there was no clear tendency associated with patients' backgrounds such as age and gender. The functional scale level improved in most cases when the recurrent disease was successfully treated, but it gradually declined in a step-wise fashion by repeated recurrences. CONCLUSIONS: Changes in QOL in patients with glioblastoma were found to associate with disease status. The small number of patients who could be evaluated for QOL over time prevented extracting significant factors affecting QOL outcomes.

### NQPC-05

#### BEVACIZUMAB AFTER PROGRESSION OF GLIOBLASTOMA PROLONGS PATIENT'S LIVING TIME AT HOME IN THE LAST 90 DAYS

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Bevacizumab (Bev) is currently available for recurrent glioblastoma to improve a patient's quality of life (QoL). To maintain a patient's daily life activity, Bev is sometimes continued beyond radiographical progression until neurological deteriorations. However, the benefit of continuous use of Bev in its terminal stage is not clarified. To clarify the benefit, we retrospectively analyzed clinical data of glioblastoma patients in the terminal stage. Ninety-five patients, who died by supra-tentorial newly-diagnosed glioblastoma progression from 2008 to 2018, were included. Bevacizumab use in the last 90 days, living time at home or final place of death were retrospectively analyzed. Of 95, twenty-six received Bevacizumab beyond progression in the last 90 days (Bev-group), and 49 did not (non-Bev group). The median overall survival time is not different between both, and the number of patients, who died at home, is seven (26.9%) and six (12.2%), respectively. Mean final administration day from death is 49.2 days and the mean living time at home in the last 90 days is 49.2 days in the Bev group, which is statistically longer than 24.0 days of the non-Bev group (p=0.0016). To continue Bev beyond progression prolongs the living time at home in the last 90 days in glioblastoma patients, and Bev should be considered in its palliative care.

### NQPC-06

#### FUNCTIONAL OUTCOMES OF INITIAL TREATMENTS FOR PATIENTS WITH PRIMARY CENTRAL NERVOUS SYSTEM LYMPHOMA ASSESSED BY ADL AND NEUROCOGNITIVE FUNCTION.

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BACKGROUNDS: Primary central nervous system lymphoma (PCNSL) frequently causes severe damage of activities of daily living (ADL) and neurocognitive function (NCF) due to extensive brain infiltration, necessitating their appropriate assessment and measures even in clinical practice. Since few studies have focused on the changes in the level of ADL and NCF in the course of PCNSL treatment, we retrospectively analyzed the effect of initial treatment of PCNSL in view of ADL and NCF. METHODS: Among 55 patients (13 male/9 female) with newly-diagnosed PCNSL treated in our institution from January 2014 to June 2019, 22 were evaluated with both ADL and NCF. Remission induction therapies consisted of high-dose methotrexate alone (two patients), R-MPV (rituximab, methotrexate, procarbazine, and vincristine) (17 patients), and R-MPV+radiotherapy (three patients), according to the patients' conditions. Rehabilitation staffs intervened from the beginning, providing specific exercises and periodically evaluating scores of Karnofsky Performance Status (KPS) and Mini Mental State Examination (MMSE). RESULTS: Mean age was 68.4 yo (range 34 to 85). After induction therapies, there were 11 complete responses (CRs), eight partial responses (PRs), and three progressive diseases (PDs). Both KPS and MMSE scores improved after induction therapy, from median 70 (40–90) to 80 (50–90), and from 24 (0–30) to 27(0–30), respectively. Among three patients who underwent RT, MMSE declined in two (one CR/one PR). CONCLUSIONS: Case-adjusted induction therapies resulted in significant radiographical responses, and the longitudinal evaluation of ADL and NCF by rehabilitation staffs could validate their maintenance or improvement over time through effective treatments and early rehabilitation intervention. However, there was difficulty in assessing patients with higher brain dysfunction such as aphasia and social adjustment disorder. Further study is needed to include more patients and to explore more appropriate evaluation batteries and timings during and after completion of induction therapy for PCNSL.