CO-T12 CLINICAL FEATURE OF END-STAGE GLIOBLASTOMAS
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Glioblastoma is the most common and most aggressive primary brain tumor. Even with optimal treatment, tumors repeatedly recur and grow, eventually invading the entire brain. Few studies have evaluated the pathogenesis and pathophysiology of terminal glioblastoma. In this study, we describe the pathological characteristics of 26 glioblastoma cases (including 18 autopsy cases) that were analyzed from initial treatment to confirmation of death at our hospital. The mean age of the 26 patients was 60.7 years, and mean overall survival was 16.7 months. The interval of clinical symptoms from coma to death was 36.2 days, and the interval from onset of respiratory depression to death was 12 days. Steroids and antiplatelet drugs were often continued after completion of active treatment. Psychiatric symptoms and central fever were observed in patients with intrathecal dissemination, and disease progression was rapid in these patients. These patients presented with a variety of symptoms, including psychiatric symptoms, headache, neck pain, and central fever. In addition, a case of diffuse infiltration from the brain parenchyma to the pterygopatellar area in a patient treated with bevacizumab suggested a possible change in the form of recurrence. In the terminal stage of glioblastoma, hypoxia due to disturbance of the respiratory centers results in progression from impaired consciousness to death. Because convulsive seizures are rare when patients are close to death, continuation of antiplatelet drugs may not be necessary. Although many patients develop local recurrences, new treatments may change the mode of occurrence and the tumor cell characteristics. The number of patients receiving home care and end-of-life care has recently been increasing because of medical improvements, such as home care. Further study of the pathophysiology of glioblastoma may yield better end-of-life care.

Key words: glioblastoma | end-stage | autopsy

CO-T13 LUMINANCE ANALYSIS OF 5-AMINOLEVULINIC ACID USING IMAGE J FOR MALIGNANT BRAIN TUMOR
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Purpose: For malignant brain tumor surgery, photodynamic diagnosis (PDD) with 5-aminolevulinic acid (5-ALA) is useful for maximal removal of tumors. Intraoperative 5-ALA positive findings were analyzed by software Image J for brain tumor surgery using 5-ALA, and the classification is limited, based on visual inspection such as Stummer's (PDD) with 5-aminolevulinic acid (5-ALA) is useful for maximal removal of tumors. Intraoperative 5-ALA positive findings were analyzed by software Image J for brain tumor surgery using 5-ALA, and the classification is limited, based on visual inspection such as Stummer’s criterion. In this study, we report the clinical features of glioblastoma patients using Image J for malignant brain tumors.

Methods: In 2008–2021, 195 patients with meningioma who underwent contrast-enhanced MRI imaging at Osaka University Hospital were included. The images were manually extracted by three neurosurgeons and used as supervised data. DeepLabV3 was used as the learning network. All the supervised data were randomly divided into training (80%) and testing (20%) data, and the application was constructed by deep learning and validation with 5-fold cross-validation. The matching rate of the region of interest automatically extracted by the device against the test data and the mean square error rate of the calculated tumor volume were used as indices of the product measurement performance. RESULTS: The matching rate using the automatic extraction application for the correct data (Dice index) was 91.5% on average.

The mean squared error rate of the tumor volume calculated from these extracted regions was 8.84%. CONCLUSION: We consider that this application using artificial intelligence has a certain degree of validity in terms of the accuracy of extracted lesions. In the future, it is necessary not only to improve the performance of the equipment but also to clarify the clinical significance of the new imaging biomarkers based on tumor volume that can be obtained from these lesion extraction techniques.

Key words: Meningioma | Automated volumetry | Artificial intelligence

CO-T18 TRENDS IN PRIMARY BRAIN TUMORS IN KUMAMOTO PREFECTURE WITH DECLINING BIRTHRATE AND AGING POPULATION - KUMAMOTO PREFECTURE BRAIN TUMOR EPIDEMIOLOGICAL SURVEY
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Backgrounds: The demographic characteristics of Kumamoto Prefecture suggest that there is little population movement and the total population remains constant at about 1.8 million, but in recent years the birthrate is declining and the population is aging. We have been conducting the Kumamoto Prefecture Brain Tumor Epidemiological Survey since 1989 in cooperation with neurosurgical institutions in the prefecture. In this study, we examined whether recent demographic changes have affected the incidence of primary brain tumors (BT). Methods: Patients with primary BT were collected annually from 44 institutions in Kumamoto Prefecture (as of 2020), and the number of incidences per 100,000 population was calculated for each BT for each year, excluding patients living outside the prefecture and duplicate cases. Results: The total number of primary BT was 11441 (top 3: meningioma 40%, pituitary adenoma 17%, glioma 17%). Of 4261 men with primary BT, the top 3 were meningioma (27%), glioma (23.7%), and pituitary adenoma (18.4%). Among these, men with meningioma (39.9%), pituitary adenoma, glioma, schwannoma, malignant lymphoma) also increased year by year, especially asymptomatic meningioma. The median age of asymptomatic meningiomas was significantly higher than that of symptomatic meningiomas (65 vs. 65 years). Other meningiomas increased significantly in the later stages compared with the early stages in children (0–14 years) and the elderly (65 years and older). Conclusion: Our results suggest that an increase in the number of BT such as glioblastoma, which are more common in the elderly, as well as an increase in the number of opportunities for intracranial examinations in the aging of the population may be responsible for the increased incidence of primary BT.

Key words: Kumamoto Prefecture Brain Tumor Epidemiological Survey | low birthrate and longevity | primary brain tumor incidence

CO-T28 QUESTIONNAIRE SURVEY REGARDING WORKING CONDITION OF THE MEMBERS BELONGS TO THE JAPAN SOCIETY FOR NEURO-ONCOLOGY (JSNO) BY THE GENDER EQUALITY AND DIVERSITY COMMITTEE OF THE JSNO, 2021
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Gender Equality and Diversity Committee (women and diversity in Neuro-oncology - WING*) of the Japan Society for Neuro-oncology (JSNO) was established in November 2020 with the aim of supporting and providing better opportunities for diverse members including women in JSNO. In order to achieve this goal, the JSNO and WING planned to conduct a questionnaire survey of all members in the fall of 2021 to investigate the actual situation of members. The targets of this study were clinicians, basic researchers, nurses and allied health professionals including
medical social workers. The survey is conducted after obtaining the approval of the Ethics Committee and Academic Committee of the JSNO. Method: As of September 26, this questionnaire is currently underway online and anonymously. The questionnaire includes questions on work environment, home environment (including childcare and nursing care) for understanding work-life balance, existence of problems related to career development, support measures considered necessary, and expectations for WING. Results: As the results of the questionnaire were not available at the time of writing this abstract. However at the presentation we will present the statistical analysis of the survey. Various comparisons of the questionnaire items common to those of the Japan Neurosurgical Society and the Japan Pediatric Society, which were conducted several years before this survey. Conclusion: Respect for diversity is increasingly important in the field of neuro-oncology. Surveys are important for the future success of our diverse community, and we believe that this survey will be an important milestone.

Key words: women in neuro-oncology | diversity | gender equality | questionnaire survey | carrier development

COT-29
THE JAPAN BRAIN TUMOR ALLIANCE: ACHIEVEMENTS IN 2020-2021: HIGHLIGHTS FOR NEURO-ONCOLOGISTS AND HEALTHCARE PROFESSIONALS
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Brain tumors are a major shock at diagnosis for patients and their families, and the journey is hectic, impacted in various and complex ways, including acute and chronic episodes. The Japan Brain Tumor Alliance is a non-profit organisation, established in 2006 to support patients and their families. As our key activity, JBTA offers nation-wide patient support through patient-gathering meetings with and without health care professionals to openly share needs, issues and concerns, partly summarized and shared in the scientific field (Gatellier, 2021, OT Journal, vol 55 no.3, 257–259; Gatellier, 2021, MASCC Annual Meeting). JBTA actively collaborates with the International Brain Tumor Alliance, with recent outcome of an international survey including the brain-tumor patient and caregiver experience during COVID-19 pandemic (Voisin et al., 2020, Neuro-oncology advances, 2(1), vdaa104). As part of collaboration with healthcare professionals in 2020–21, JBTA achievements include the review of clinical guidelines (as part of Patient and Public Involvement activity), information-sharing events with the Japan Clinical Oncology Group and the seminar with a group including occupational therapists. In addition, to highlight patients’ needs and priorities to the neuro-oncology community, since March 2020, JBTA shares the Japanese translation of the monthly JBTA e-newsletter broadcasting the latest and most relevant scientific, community information and brain tumor-related events around the world to healthcare professionals and brain tumor patients and families in Japan. These enlightening events place JBTA in an ideal position to lead research in the direction most meaningful to brain tumor patients.

Key words: Quality of Life | patients’ priorities | Patient Public Involvement

COT-30
EFFECT OF TUMOR RESECTION IN 11C METHIONINE ACCUMULATION AREA ON SURVIVAL IN PATIENTS WITH GLIOBLASTOMA
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Aim: The amount of tumor excised in an area enhanced by contrast medium on magnetic resonance imaging strongly affects the survival time of patients with glioblastoma. We investigated the effect of the amount of tumor removal in the 11C methionine (MET) accumulation site on overall survival(OS). Methods: Twenty-six patients (15 male; mean age, 68.9 years) with a diagnosis of glioblastoma who underwent tumor resection at Kizawa Memorial Hospital between June 1, 2015 and August 30, 2021 underwent MET positron emission tomography (MET-PET) before and after the operation. In a comparison of MET-PET before and after tumor resection, the tumor-to-normal (T/N) ratio reduction (ΔT/N), MET accumulation area reduction (MET-extent of resection [EOR]), and the residual MET accumulation volume (MET-residual tumor volume [RTV]) were calculated. The relationship between these MET-related parameters associated with tumor resection and OS was investigated via univariable analysis. Results: Univariate analysis revealed that ΔT/N was significantly associated with OS (hazard ratio [HR]: 0.98; 95% confidence interval [CI]: 0.97–0.99; p=0.02). MET-RVT was also significantly associated with OS (HR: 1.01; 95% CI: 0.98–1.02; p=0.73). Conversely, MET-EOR (HR: 0.99; 95% CI: 0.97–1.01; p=0.06) was not significantly associated with OS. Conclusions: Aggressive surgical resection of the MET accumulation site significantly prolongs survival in patients with glioblastoma.

Key words: glioblastoma | 11C methionine | survival