sociation with malignant brain tumor was analyzed. The frequency of stroke in 287 patients with primary glioblastoma and 217 patients with metastatic brain tumor was also analyzed.

RESULTS: Twenty one (4.1%) patients with ischemic stroke and 26 (5.1%) patients with hemorrhagic stroke patients had malignant brain tumor, and most tumors were either malignant glioma or metastatic brain tumor. A medical history of cranial irradiation was seen in 66.7% of patients with ischemic stroke, and 80% of hemorrhagic stroke occurred within the tumor before starting the treatments. Either ischemic or hemorrhagic stroke occurred in 9.1% of patients with glioblastoma and 4.1% of patients with metastatic brain tumor, and the number of ischemic and hemorrhagic were almost the same. In patients with glioblastoma, nearly half of the stroke cases were associated with bevacizumab. Half of the cases of bevacizumab-related stroke were asymptomatic, while asymptomatic cases were seen in 21.4% for non-bevacizumab cases.

DISCUSSION: Stroke is not an uncommon complication in patients with malignant brain tumor but only a restricted number of cases were preventable. Including the cases of bevacizumab-related stroke, which is often asymptomatic, accurate diagnosis and the second prevention would be important.

COT-08

ANALYSIS OF PROGNOSIS OF BIOPSY/PARTIAL RESECTION CASES OF MALIGNANT GLIOMA

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INTRODUCTION: Malignant glioma is the most common and aggressive primary brain tumor and requires multimodality treatment. Regarding surgical treatment, it is desirable to achieve maximum resection while considering function preservation. There is consensus that the survival prognosis is prolonged in gross or subtotal resection. However, there are cases in which biopsy or partial resection is performed due to the spread of lesions at the time of onset, underlying diseases, and social background. The purpose of this study was to retrospectively analyze the cases of malignant glioma at our university and to find out the factors related to the prognosis of cases in which removal was insufficient.

TARGET: 55 cases of malignant glioma treated at our university since 2013 who underwent biopsy or partial resection.

METHOD: Overall/progression-free survival period is the end point, and parameters are age, bevacizumab use, pathological diagnosis, photodynamic diagnosis use at operation, immunotherapy, ventricular invasion, contralateral invasion, sex, preoperative Performance Status (PS), postoperative PS, left or right, navigation use, steroid use, anticonvulsant drug type, radiation, IDH mutation, 1p19q co-deletion, MGMT methylation, TERT mutation, p53 mutation, biopsy or partial resection. After narrowing down the evaluation items by univariate analysis(Logrank test), multivariate analysis(Cox proportional hazard model)was performed.

RESULT: The univariate analysis was significant in 5 items including bevacizumab use, radiation therapy, levetiracetam use, postoperative PS70 or higher, and partial resection instead of biopsy. Multivariate analysis detected two statistically significant differences, bevacizumab use and post-operative PS70 and above. There was no difference in the timing of bevacizumab use.

CONSIDERATION: In poorly resection cases, the weight of postoperative treatment is high, so continuity of treatment and selection of postoperative treatment are important, and maintenance of ADL and use of bevacizumab are significant among them.

COT-11

ADMINISTRATION OF BEVACIZUMAB FOR PATIENTS WHO FAILED TO COMPLETE STUPP REGIMEN AFTER GLIOBLASTOMA SURGERY

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Stupp regimen is widely used as the standard treatment after glioblastoma surgery, but in some cases treatment must be discontinued for various reasons. We experienced Bevacizumab in two patients who were unable to continue treatment in the Stupp regimen, and report our experience with literature review. First patient is a man in his 60s. Resection of glioblastoma of the left cerebral hemisphere was performed, and postoperatively right hemiparesis and aphasia remained. Irradiation and administration of Temozolomide were performed, but Temozolomide was unable to continue because of side effects. After systemic management, Bevacizumab was administered, and reduction of residual tumor and peripheral edema were observed, and the patient began to speak. After 12 cycles of administration, the tumor regrew, and he died. Second patient is a woman in her 80s. Craniotomy was performed for hemorrhagic infarction of the left cerebral hemisphere, postoperatively, aphasia, right hemiparesis remained, bedridden, and was unable to eat. Four months after initial surgery, a tumor was found in left parietal lobe and was resected. The pathological diagnosis was glioblastoma. For the treatment of recurrence, the patient was unable to be transferred for radiochemotherapy, so the patient was treated with Temozolomide and Bevacizumab. The patient's condition became better, eat by herself, and could play in rehabilitation facility on the wheelchair. After 12 cycles of bevacizumab, the tumor subsequently enlarged, and died. Although the effect is limited, there are some cases in which Bevacizumab administration could maintain patient's condition by controlling tumor growth for a certain period of time. From the experience of these patients, it seems that even in patients with postoperative poor Karnofsky Performance Status (KPS)and elderly people, Bevacizumab administration would be an option before transitioning to end-of-life care.

COT-12

THE ROLE OF CLINICAL RESEARCH PROFESSIONAL IN THE REGISTRATION STUDY OF PEDIATRIC SOLID TUMOR IN JAPAN CHILDREN'S CANCER GROUP

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A larger scale prospective registration study for pediatric solid tumor has been conducted nationwide in Japan since 2011 in Japan Children's Cancer Group (JCCG). In the study, the clinical data and surgical specimen are collected into the National Center for Child Health. Kyoto University Hospital has participated in the study since IRB approval in 2011. We reviewed our patients registered to the study and assessed the role of clinical research professional in the registration study. Fifty-one patients with pediatric brain tumors participated in this study from 2011 to 2020. There were 17 intracranial germ cell tumors, 9 medulloblastomas, 14 gliomas and ependymomas in 5 diffuse midline gliomas, 9 pilocytic astrocytoma, and 2 other types of tumor. Forty surgical specimens were collected for central review. The status of clinical data entry was complete in 33 patients. The registrations and sending of clinical data and specimens have remarkably increased without exceptions since a clinical research professional supported the study in 2018. The study collecting and analyzing pathological diagnosis, molecular diagnosis, treatment, and clinical information in patients with pediatric brain tumor are important to realize the current status. The clinical research professional plays an important role to register patients and to send the specimens and clinical data into the study.

COT-13

CURRENT SITUATION AND PROBLEMS OF CANCER GENOMIC PROFILING TEST IN KYOTO UNIVERSITY HOSPITAL

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OBJECTIVE: Kyoto University Hospital has introduced the cancer genomic profiling tests, Oncoprime in 2015, Guardant360 in 2018, which are not under insurance coverage, FoundationOne CDx(F1CDx) and OncoGuide NCC Oncopanel system(NCC OP) in 2019, which received approval for insurance coverage for the first time in Japan. We investigated the results of cancer genomic profiling test under insurance coverage in our hospital. METHODS: A special facility for the cancer genomic profiling tests was produced. To perform the cancer genomic profiling test, an outpatient must visit the facility three times (learning, ordering of the test, and getting the results). The expert panels decide the final test results and treatment options with the all information of the patients. RESULTS: From November 2019 to March 2020, 51 and 9 patients were tested with F1CDx and NCC OP, respectively. 16 patients (31%) of F1CDX and 2 patients (22%) of NCC OP got treatment recommendations from the expert panels. However, only 5 patients (9.8%) of F1CDX and 1 patient (11%) of NCC OP received the treatments. The secondary finding suspecting germline mutations was found in 8 patients of F1CDX. CONCLUSION: After the approval the cancer genomic profiling tests with insurance coverage in Japan, it becomes easy for the patients to perform the test and get the genetic information of the tumor. However, it remains not easy to receive the recommended drugs because of several limitations of their usages.

COT-17

CANCER GENOMIC MEDICINE AT KOBE UNIVERSITY HOSPITAL

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Approximately one year has passed since the Japanese government approved a new plan to fight cancer by promoting the use of genomic medi-

cine in June 2019. Our hospital plays an important role among 6 hospitals to serve cancer genomic medicine for cancer patients in Hyogo Prefecture. Here, we evaluated the system and the current status of cancer genomic medicine in our hospital, and examined future issues and problems. Consecutive 145 patients, who received outpatient treatment for cancer genomic medicine from July 2019 to June 2020 in Kobe University Hospital, were analyzed to examine patients' background, implementation status, gene profile, and the number of subjects for treatment and clinical trials. The final result of gene profile was obtained in 93 cases, of which 49 cases (52.7%) showed the actionable gene changes to be treated. Six cases of brain tumor were 2 cases of glioblastoma, 2 cases of oligodendroglioma (recurrence), and 2 cases of AT/RT and CNS embryonal tumor. In one case the test was cancelled because Performance Status (PS) of the patient decreased. In another case the actionable gene mutation (PTEN, CDKN2A) was obtained, but the patient lived too far to visit clinical trial site. Almost half of genetic panel tests revealed genomic changes related to treatment, but the number of patients actually targeted for treatment or clinical trials was extremely small. It is necessary to consider the rapid progression of illness and access to facilities conducting clinical trials.

COT-18

PROGNOSIS AND PROBLEMS ABOUT SECONDARY INTRACRANIAL NEOPLASM IN CHILDHOOD CANCER SURVIVORS: A SINGLE-INSTITUTION RETROSPECTIVE COHORT STUDY

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OBJECTIVE: As childhood cancer survivors gradually increased, late complications of treatment have been at issue and risk of secondary neoplasm is increasing cumulatively. We retrospectively analyzed clinical outcome and problems of treatment for secondary intracranial neoplasm. Patients and METHODS: 497 patients (children, adolescents and young adults) with malignant central nervous system neoplasm were treated in our institution from 1971 to 2015. 188 cases (37.8%) were enrolled in this follow-up study. Diagnosis of primary neoplasm included low grade glioma (29%), embryonal tumor (23.5%), germ cell tumor (24.5%), ependymoma (8%), other (15%). RESULTS: Fourteen cases of them were diagnosed as secondary intracranial neoplasm. Twelve cases were operated and histopathological diagnosis included 6 glioblastomas, 1 anaplastic astrocytoma, 1 anaplastic ependymoma, 4 meningiomas. In all cases, histopathological finding and molecular profile of secondary intracranial neoplasm differed from that of primary malignant brain tumors. Duration from the first operation of primary tumors to diagnosis of secondary intracranial neoplasm ranged from 5 to 36 years (average: 29.3). In malignant glioma cases except meningioma cases, origin of them was contained in high irradiation field (>40Gy). In malignant glioma cases, Chemotherapies using temozolomide and bevacizumab were selected after tumor removal. In 3 cases of them, reirradiation was performed. Response for treatment was poor or transient in most cases, median survival time was 12 months. Of late complications, such as endocrinological problem needed replacement (55%), cerebrovascular event (15.9%), secondary neoplasm (7.4%), secondary neoplasm was importantly related with prognosis. CONCLUSION: It is difficult to plan therapeutic strategies against second malignant neoplasm because of lack of information in case of long-term survivors and restriction for first radiation. Clinical outcome of them is poor and new treatment targets should be developed. It is important to plan clinical trials to reduce treatment intensity and usable long-term follow-up system.

COT-20

CLINICAL EXPERIENCE WITH TUMOR-TREATING FIELDS THERAPY FOR NEWLY DIAGNOSED GLIOBLASTOMA

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INTRODUCTION: Tumor-treating fields (TTF) is an established modality for glioblastoma (GBM) treatment administered through the portable Optune system. The efficacy of Optune for newly diagnosed GBM was demonstrated in the EF-14 phase 3 trial. Although TTF is now included as part of initial treatment in the Japan GBM guideline, it is not yet a standard therapy because the procedures are cumbersome and may impose unnecessary psychological burdens on patients with dire prognoses. In our institution, TTF therapy has been offered as a treatment option for GBM patients since January 2018. This report summarizes our initial experience with this novel treatment.

METHODS: The medical records of the first eight patients with newly diagnosed glioblastoma who underwent TTF were retrospectively reviewed.

RESULTS: The eight patients with newly diagnosed glioblastoma treated with TTF comprised five men and three women (median age, 68 years; range 34–83 years). Nine patients were offered TTF therapy, but one declined because of the need for a shaved head. The patients continued TTF for 1–7 months, without major complications. Skin reaction was the most prevalent adverse event (n = 5). One patient could not continue TTF treatment after femoral neck fracture due to the weight of the mobile battery. One patient who did not have a helper at home received TTF treatment from a nurse visiting his home.

CONCLUSIONS: Patients should be provided with information on TTF, such as the timing of informed consent during and after chemoradiotherapy, to help them better understand this new modality and secure their consent.