malignant glioma. One case of malignant ependymoma and one case of medulloblastoma showed rapid aggravation of symptom after convulsion. DISCUSSION: Nine cases showed convulsion among our 41 cases. Convulsion happened as initial symptom in 4 cases but it happened during treatment in 3 cases. Three cases among these 5 cases showed rapid aggravation of symptom after convulsion. So pre- and post-operative anti-epileptic treatment seems to be necessary.

COT-02
TREATMENT EXPERIENCE OF PAZOPANIB FOR A CASE OF VON-HIPPEL LINDAU DISEASE
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INTRODUCTION: von Hippel-Lindau (VHL) disease is an autosomal dominant genetic disorder associated with neoplastic lesions in multiple organs. Here, we report our experience with a patient with VHL disease presenting with complications of renal tumors, wherein pancreatic cystic lesions and renal neoplastic lesions were reduced in size with the administration of pazopanib at our department. PATIENT: The patient was a 26-year-old man who presented with hiccups and was diagnosed with medullary hemangioblastoma with a cyst that was resected. The other central nervous system lesions were located in the right optic nerve sheath, cervicomedullary, the thoracic spinal cord, with multiple cystic type tumors in the pancreas, renal tumors, and epidermolymphal tumors. Although the family history was unclear, the clinical diagnostic criteria for VHL disease were met, and mutations were found in the VHL gene analysis. Six months after the initiation of pazopanib therapy at a dose of 800 mg/day, there was no remarkable change in the hemangioblastoma on imaging; however, the pancreatic and renal lesions had shrunk. In addition, new lesions did not appear. Adverse events included diarrhea, graying of hair. DISCUSSION: Pazopanib is a multi-tyrosine kinase inhibitor that inhibits angiogenesis and inhibits tumor growth. In VHL disease, pancreatic and renal tumors influence the survival prognosis, and for hemangioblastoma, the lesions increase in number and size and the corresponding surgery affects the functional prognosis. Although there was a poor tumor-reduction effect on the hemangioblastoma, there was a supposed inhibitory effect on the appearance of new lesions and the enlargement of the existing lesions. CONCLUSION: Pazopanib administration resulted in the shrinkage or regression of pancreatic and renal tumors. In addition, it inhibited the increase in number and size of hemangioblastomas. Further, prolonging the surgical treatment interval may help maintain the patient’s quality of life.

COT-03
EVALUATING FUNCTIONING AND DISABILITY OF A PATIENT WITH BRAIN TUMOR BY WHODAS
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BACKGROUND: The WHO Disability Assessment Schedule (WHODAS) is a practical assessment instrument which measures level of functioning in the following six domains of life. Here we report a case of brain tumor who was evaluated with the 36-item full version of WHODAS 2.0 (self-administered mode), and discuss usefulness of the WHODAS. CASE PRESENTATION: A 69-year-old man was referred to our hospital with cognitive problems because of which he needed assistance for his ADLs at home. He was diagnosed as having primary central nervous system lymphoma (PCNSL) following open brain biopsy, and was transferred to our hospital for chemotherapy at 23 days after the biopsy. He showed no sign of motor or sensory abnormalities, but initial evaluation revealed that he had troubles in judgment in his ADLs mainly because of marked memory deficits. Motor, cognitive and total FIM score was 65/91, 22/35, and 87/126, respectively and MMSE score was 24/30. After 48 days of chemotherapy (3 courses of initial DeVIC and following R-MPV regimen), he was temporarily discharged home before readmission for another chemotherapy. Another diagnosis to him and his family, he was then basically independent in ADLs at home. We implemented WHODAS 2.0 to demonstrate minute ADL problems of this patient at home so that we might focus on rehabilitation for specific problem at home. Scores at the WHODAS were 15/30 for Communication, 10/25 for Mobility, 4/20 for Self-care, 14/25 for Getting along, 12/20 for Life activities, and 27/40 for participation. In fact, he felt difficulty in the areas of “activity and participation”. DISCUSSION: The WHODAS is useful to identify various problems in their daily living even though patients were independent in ADLs. Patients with brain tumors often repeat hospitalization for medical treatment. We have to be alert to not only objective but subjective changes in ADLs at home.

COT-04
FAMILY SUPPORT FOR PATIENTS WITH PRIMARY MALIGNANT BRAIN TUMORS BY PATIENT SUPPORT GROUP IN NATIONAL CANCER CENTER
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BACKGROUND: A family support group for patients with primary malignant brain tumors in our hospital is called “Brain Tumor Family Table.” We conduct regular meetings, such as 30 minutes of medical lectures and 60 minutes of healthcare discussions, between participants and medical staff which is supervised by a nurse. To provide more effective family support, we reappraised our activities. METHODOLOGY: A total of 96 family members participated in 11 meetings from July 2015 to March 2019 and answered anonymous questionnaires about their participation. This survey evaluated their motivation for participation and the level of satisfaction toward the lectures and discussions by three-level scores and free description. RESULT: Regarding the reason of their participation, 28.1% of the participants answered, “I want to talk to someone who is in the same condition.” We found that 83.3% of them were satisfied with the lectures, and 89.6% of them were satisfied with the discussions and conversations. The reasons for their satisfaction were: “I was happy to hear the story of other patients” (19.0%), “I feel positive toward patient care” (19.0%), and “I realized I was not alone” (17.2%). Moreover, 92.7% answered “I would like to participate in the next meeting” and 94.3% answered “I want to talk again,” 14.2% answered “I feel stable,” and 14.2% answered “I can get information.” There were other opinions, like “Sharing feelings is important” and “I would like to help others next time,” as well. DISCUSSION: Malignant brain tumors are orphan diseases, and patients and their families lack the information about the disease and the chance to share their experiences. Hence, participants were quite satisfied with this meeting. We will improve our facilitating skills as an organizing body so that participants can share their experiences and feelings to reduce their loneliness and finally feel positive toward patient care.

COT-05
A CASE OF NEPALESE IN JAPAN SUSPECTED OF NEUROCYSTICERCOSIS
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INTRODUCTION: Cystosis is the most common parasitic disease of the central nervous system. Especially in developing countries, it is one of the differential diagnoses of diseases that cause seizures. We report a case of a foreigner suspected of having neurocysticercosis. CASE: A 36-year-old Nepalese visiting Japan for 2 years. Two days ago, she lost consciousness for a few seconds and was transferred to our hospital complaint of convulsion for about 1 minute. Head Computed Tomography (CT) revealed a mass lesion with a ring enhancement effect of about 10 mm in the right frontal lobe, with edema around it. Magnetic Resonance Imaging (MRI) shows T1WI low signal, T2WI high signal, and diffusion-weighted image with high high signal. The ring-shaped enhancement effect was exhibited. Whole body CT showed no obvious lesions and blood tumor markers were negative. Various infections were negative, and cerebrospinal fluid cytology and culture were negative. POSTOPERATIVE COURSE: From the surgical findings, brain abscesses such as cerebral tuberculoma were suspected, but various tests were negative. As a pathological result, the tumor had a capsule, and the inside showed necrotic tissue and fibrous granulation tissue reaction. There were no insects, and no obvious cells were identified by various tests. We report our activities. METHOD: A total of 96 family members participated in 11 meetings from July 2015 to March 2019 and answered anonymous questionnaires about their participation. This survey evaluated their motivation for participation and the level of satisfaction toward the lectures and discussions by three-level scores and free description. RESULT: Regarding the reason of their participation, 28.1% of the participants answered, “I want to talk to someone who is in the same condition.” We found that 83.3% of them were satisfied with the lectures, and 89.6% of them were satisfied with the discussions and conversations. The reasons for their satisfaction were: “I was happy to hear the story of other patients” (19.0%), “I feel positive toward patient care” (19.0%), and “I realized I was not alone” (17.2%). Moreover, 92.7% answered “I would like to participate in the next meeting” and 94.3% answered “I want to talk again,” 14.2% answered “I feel stable,” and 14.2% answered “I can get information.” There were other opinions, like “Sharing feelings is important” and “I would like to help others next time,” as well. DISCUSSION: Malignant brain tumors are orphan diseases, and patients and their families lack the information about the disease and the chance to share their experiences. Hence, participants were quite satisfied with this meeting. We will improve our facilitating skills as an organizing body so that participants can share their experiences and feelings to reduce their loneliness and finally feel positive toward patient care.

COT-06
HBV REACTIVATION DURING AND AFTER THE TREATMENT OF MALIGNANT GLIOMA WITH TEMOZOLOMIDE
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BACKGROUND: It has been reported that temozolomide treatment for malignant glioma can lead to the reactivation of Hepatitis B virus (HBV)
and fulminant hepatitis. However, the frequency of HBV reactivation and the preventative effect of entecavir remains unclear. In this study, we retrospectively reviewed clinical features of the cases treated by temozolomide for malignant glioma, focusing on the reactivation of HBV and the effect of entecavir.

METHODS: We screened 129 cases with newly diagnosed and recurrent malignant glioma for HBs antigen, HBs antibody and HBC antibody before the administration of temozolomide. HBV-DNA were quantified by real-time qPCR at day 0 before the administration of temozolomide. HBV-DNA were monitored every 1–3 months by real-time PCR during temozolomide treatment and 12 months after completion of temozolomide. Entecavir were started before temozolomide treatment to the HB carrier, and if HBV-DNA was detectable at follow-up in the cases with occult HBV infection. Results 2 (1.5%) and 20 (15%) of 129 cases were HB carrier and had occult HBV infection, respectively. HBV-DNA in both of HB carrier turned negative after administration of entecavir, but transiently turned positive again during temozolomide treatment. In the cases with occult HBV infection, 4 (20%) patients had HBV reactivation. HBV-DNA turned negative after starting entecavir without liver dysfunction. CONCLUSION: HBV carrier and the cases with occult HBV infection were not rare in Japan, and HBV reactivation developed frequently during temozolomide treatment. Because pharmacological prevention of HBV reactivation with entecavir was effective, the screening and monitoring is indispensable in the treatment of malignant glioma with temozolomide.

COT-07 HEREDITARY BRAIN TUMOR DISEASE MEDICINE IN THE CANCER GENOME MEDICAL AGE: IMPORTANCE OF MULTIDISCIplINARY COLLABORATION AND GENETIC CONSULTING
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INTRODUCTION: Recently, the cancer genome medical system has been rapidly promoted in Japan, such as cancer related gene panel test as NCC oncopanel and Fondation One being covered by insurance. At the same time, there is a great deal of attention now on hereditary tumor diseases caused by abnormalities in cancer-related genes and their medical treatment. Von Hippel-Lindau (VHL) disease and tuberous sclerosis (TSC) are one such hereditary tumor diseases, and develop tumors in multiple organs such as kidney tumors and lung tumors as well as brain tumors. The University of Tokyo Hospital has been developing an in-hospital medical care system for VHL disease and TSC. [VHL disease] If VHL disease is diagnosed at an early stage and strives for early detection and treatment of tumor, it is said that the prognosis is not largely different from normal people. Therefore, our hospital opened a specialized outpatient for VHL disease from 2012, and has carried out genetic diagnosis of VHL disease and medical treatment based on it. [TSC] Recently, the use of Afinitor for SEGA was covered by insurance in Japan, and a system in which multiple departments involved in our hospital cooperated was established, and regular meetings were held to determine treatment policies. DISCUSSION: It was the development of genetic counseling system and multidisciplinary cooperation system that was important in actual use. Genetic counseling helps patients with illness and their families to genetically understand and adapt to illness. In the case of hereditary diseases, the practice of genetic counseling was very useful. In addition, since it is a disease involving multiple organs, close cooperation with other in-hospital clinics has been extremely useful for early detection and treatment of patient’s lesions.

COT-11 EFFECT OF PHYSICIAN SUPPORTS ON QUALITY CONTROL AND QUALITY ASSURANCE IN CLINICAL BRAIN TUMOR RESEARCH
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BACKGROUND: Clinical physicians have difficulties in conducting investigator-initiated-trials because of increasing clinical duties in Japan. Therefore, physician support can be one of the important factors for quality control and quality assurance. In Kyoto University Hospital, clinical research professional’s support for physician had started at November 2012. In this study, we evaluate effect of physician supports on quality control and quality assurance in clinical brain tumor research. METHODS: Our department, Neurosurgery, has been a member of a Group (in Japan Clinical Oncology Group (JCOG)) since 2007. The number of registered patients, the status of periodic monitoring, the occurrence of inquiries per case, and details of physicians’ support (items, frequency, methods, etc.) in JCOG were reviewed. The patients’ status and details of periodic monitoring were examined. The physicians affecting the audit results were conducted by JCOG Audit Committee on January 2013 and February 2019 are examined. RESULTS: There are seven trials have been ongoing on or started since November 2012. There are fifteen patients registered in the clinical studies until July 2019. Periodic monitoring has been carried out in 214 patients. The cumulative total number since 2012. Physicians’ support mainly involved the preparation of ethical review documents, CRF documentation, responses to data queries, preparation of SAE reports, study schedule check and monitoring of observation items. The audit results of site visit were accepted in all of the audits. The total evaluation score 68.80 on January 2013 and excellent, total evaluation score 99.9 on February 2019. CONCLUSION: Clinical Trials Act has been implemented, and further improvement in the quality of clinical trials has been demanded. As the results of this study, we clarified the necessity for physician support and the contribution to quality improvement.

COT-12 CLINICAL MANAGEMENT AND TIMING OF SURGICAL TREATMENT FOR ASYMPTOMATIC GLIOMA
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BACKGROUND: In Japan, there are many cases where intracranial diseases are found accidentally due to the widespread use of MRI and brain check-up. Unruptured cerebral aneurysms and asymptomatic cerebral infarction are often diagnosed, but asymptomatic gliomas. We analyzed the asymptomatic gliomas retrospectively among grade 2 or higher gliomas that had undergone diagnostic imaging or surgical treatment in our institution. MATERIAL AND METHODS: Of 166 adults with grade 2 or higher grade glioma treated in our institution between 2007 and 2018, 15 cases were asymptomatic. Twelve cases were males and 3 were females, with an average age of 55.1 years (34–79 years). There were 7 cases found in brain check-up; 6 cases in the follow-up of other intracranial diseases, and 2 cases in migraine. Twelve patients, except 3 patients, have undergone surgical treatment, and the average time from an initial imaging to surgical treatment was 51.1 weeks (2 to 329 weeks). Eight patients were treated after radiological follow-up and 4 cases are treated within 2 months after the tumor was discovered. The pathological diagnosis was grade 2: 3 cases, grade 3: 2 cases, and grade 4: 3 cases. Three patients without surgical treatment were diagnosed as grade 2 on MRI. Six patients died during follow-up. The median survival time from the first surgical treatment for grade 3 and 4 glioma was 17 months. CONCLUSION: Incidence of asymptomatic glioma is very rare. Even for asymptomatic glioma, the prognosis is not so good due to malignant transformation and disease progression. It is important to explain the natural course of disease and treatment strategy accurately.

COT-13 THE USEFULNESS OF THE CEREBRAL ANGIOGRAPHY FOR RESECTION OF THE MALIGNANT GLIOMA
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OBJECTIVE: Maximal safe resection is a standard of care (SOC) for treatment of malignant glioma in light of quality of life (QOL) maintenance and better outcomes. This strategy is especially important when vital perforating arteries such as lateral striate arteries (LSA) and anterior choroidal arteries, are involved in tumor and its periphery, as their damage causes serious deterioration in the activities of daily life. Here we report a utility of preoperative cerebral angiography in glioma surgery. METHODS: Six cases of perforator-involving malignant gliomas, consisting of five glioblastomas and one anaplastic ganglioglioma, operated from December 2018 to July 2019 were evaluated with preoperative imaging using sophisticated cerebrovascular angiographic techniques and fusion imaging with MRI. RESULTS: In all six cases, perforating arteries passed through or around the tumors. The cerebral angiography revealed the origin of LSA in all patients; one at M1, two at M1-M1 junction, and three at the superior trunk of M2. Anterior choroidal arteries and Heubner’s recurrent arteries were also identified preoperatively. By knowing the precise locations of these perforators, intraoperative resection of vascular-rich malignant gliomas could be performed with precaution of avoiding their unnecessary injury. No symptomatic complications occurred after angiography. Postoperative MRI disclosed a potential embolic infarction in the perforator territory in one patient, which resolved in a few days. CONCLUSIONS: Visualization of perforators by angiography was helpful in detailed evaluation of surgical strategy and facilitated safe resection also leading to shortening of operating time. Compared to another modalities, angiography provided the best special resolution for visualization of vital perforating arteries involved in malignant gliomas.