

on medication. Summary: According to the results we obtained, the response rate was the same as that in the phase I / II study, and the progression-free survival was slightly longer.

Key words: PCNSL | Tirabrutinib | DLBCL

#### ML-18

##### HIGH-DOSE CHEMOTHERAPY SUPPORTED BY AUTOLOGOUS STEM CELL TRANSPLANT IN RELAPSED AND REFRACTORY PRIMARY CNS LYMPHOMA

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While whole brain radiation therapy (WBRT) has been performed as consolidation therapy in primary central nervous system lymphoma (PCNSL), high-dose chemotherapy supported by autologous stem cell transplant (HDC/ASCT) is widely investigated today as an alternative treatment strategy, given the high risk for radiation-induced neurotoxicity in WBRT. Various conditioning regimens have been investigated in phase II trials, which report non-inferiority of HDC/ASCT in efficacy and preservation of neurocognitive function in comparison with WBRT. Besides its promising efficacy, treatment-related deaths are reported in 11% in patients treated by a conditioning regimen using thiotepa, busulfan and cyclophosphamide (TBC), which raises a concern for safety. Among several conditioning regimens, analysis using registry data of Japan Society for Hematopoietic Cell Transplantation has revealed that the use of conditioning regimens containing thiotepa was a positive factor for longer PFS. According to the result of a phase I trial in Japan which investigated HDC/ASCT using thiotepa and busulfan (BuTT), thiotepa was approved by the pharmaceuticals and medical devices agency (PMDA) on March 2020. In comparison with the TBC regimen, cyclophosphamide is omitted, and the dose of thiotepa is lower (250 mg/m<sup>2</sup>, 3 days in TBC; 5 mg/kg, 2 days in BuTT) in BuTT, therefore BuTT could be less toxic in comparison with TBC, and no treatment-related deaths were observed in the phase I study in Japan. Further investigation on the efficacy and safety of BuTT in actual clinical practice is warranted. We have constituted a multi-disciplinary team in our institution in order to perform HDC/ASCT using BuTT in relapsed/refractory PCNSL. Treatment indications are as follows; 65 years old or younger, previously treated by rituximab, methotrexate, procarbazine and vincristine (R-MPV), good organ function and neurological status. Future directions along with preliminary treatment results will be discussed at the meeting.

Key words: PCNSL | High-dose chemotherapy | BuTT

#### CNS METASTASIS (MET)

##### MET-3

##### A CASE OF INTRAPITUITARY ADENOMA METASTASIS FROM ADVANCED GASTRIC CANCER

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Metastasis from extracranial tumor into a pituitary adenoma is a rare case. We report a case of metastasis from gastric cancer to a giant pituitary tumor. A 65-year-old man had been drinking more water and had an increased frequency of urine in 10 years. From that time, the patient was gradually aware of the pain in his left eye. In 20XX the patient had a sudden severe headache and pain of his eyes and visited an ophthalmologist. The patient was referred to our institution with general malaise and nausea, vomiting. A cerebral MRI disclosed Extensive neoplastic lesions from the base of the skull to the nasal cavity. The left eye had esotropia and abduction disorder. Laboratory test demonstrated hyponatremia (Na 126mEq/L) and decreased in plasma osmolality (273mOsm/kg), D-dimer, fibrinogen and CA19-9 were high level. One week after admission, the patient's symptom was getting worse. The patient underwent FDG PET/CT, which showed FDG avid in the gastric wall and clivus tumor. The lesion was suspected gastric cancer and performed Esophagogastrroduodenoscopy. The biopsy-based pathology was showed cubic and round cells with high NC ratio and signet-ring cells containing mucin. And clivus tumor was biopsied at an otolaryngologist because part of the tumor was exposed from the nasal cavity. The

biopsy-based pathology was showed a small amount of adenocarcinoma cells which is surrounded by pituitary adenoma. The patient was diagnosed as intrapituitary adenoma metastasis from advanced gastric cancer and has been started radiation therapy. But the level of consciousness dropped sharply, so radiation therapy had become difficult to continue. The patient transferred to palliative care ward and died 3 months after his first visit. In this case, diagnosis and treatment were difficult due to the that the image was a finding a malignant tumor and the rapid progression of symptoms.

Key words: pituitary adenoma | gastric cancer | tumor-to-tumor metastasis

##### MET-4

##### CLINICAL INVESTIGATION OF THE CASES RECURRED AS DISSEMINATION AFTER POSTOPERATIVE LOCAL IRRADIATION FOR METASTATIC BRAIN TUMORS

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Last year, the authors examined the outcome of the patients with metastatic brain tumor (MBT) treated by whole-brain irradiation (WBRT) or local irradiation (LRT) after surgery. As a result, it was shown that the overall survival (OS) was same but the recurrence pattern was different. Furthermore, it was shown that there were some cases with disseminated recurrence in the LRT group. One year has passed, cases showing disseminated recurrence after LRT were examined. The subjects were 28 patients for whom LRT was selected as post-surgical irradiation since December 2017, with an average age of 66.2 years and a male-female ratio of 19:9. Non-small cell lung cancer was the most in 17 cases. During the observation period, recurrence was observed in 12 cases, new outbreaks at other sites in 8 cases, disseminated recurrence in 4 cases, and no local recurrence. There was no clear difference in kinds of carcinoma and removal fashion between disseminated recurrence cases and other cases. Disseminated recurrence occurred between 3–10 months after surgery, 2 presented with headache, 1 with convulsions, 1 confirmed during follow-up of images, and all underwent WBRT. The lesions shrank after irradiation, but they were easy to re-grow, and the prognosis was poor. On the other hand, 10 cases died in 24 cases other than disseminated recurrence, but all cases died of primary cancer. Although LRT after surgery is non-inferior to WBRT in terms of OS and has the advantage of maintaining cognitive function, this study shows that there is a considerable risk of disseminated recurrence regardless of the removal fashion or kinds of carcinoma. It was also shown that prognosis after disseminated recurrence was poor. It is desirable to select postoperative irradiation after explaining the recurrence pattern, and when LRT is adopted, it is necessary to consider setting a short observation interval immediately after irradiation.

Key words: metastatic brain tumor | recurrence | dissemination

##### MET-5

##### SALVAGE SURGICAL RESECTION AFTER LINAC-BASED STEREOTACTIC RADIOSURGERY AND RADIOTHERAPY FOR BRAIN METASTASIS

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Methods: Between November 2009 and December 2018, 335 consecutive patients with 1085 brain metastases were treated with SRS/fSRT for newly diagnosed brain metastasis at our hospital. Nineteen of 335 patients (5.6%) and 19 of 1044 brain metastases (1.8%) went on to receive SSR after SRS/fSRT during this study period. Two patients underwent multiple surgical resections. Nineteen consecutive patients underwent 21 SSRs. Results: The median time from initial SRS/fSRT to SSR was 14 months (range: 2–96 months). The median follow-up after SSR was 15 months (range: 2–76 months). The range of tumor volume at initial SRS/fSRT was 0.12–21.46 cm<sup>3</sup> (median: 2.19 cm<sup>3</sup>). Histopathological diagnosis after SSR was recurrence, radiation necrosis (RN) and cyst formation in 13 and 6 cases, respectively. The time from SRS/fSRT to SSR were shorter in the recurrence than in the RNs and cyst formation, but these differences did not reach statistical significance (p = 0.07). The median survival time from SSR and from initial SRS/fSRT was 17 months and 74 months, respectively. The cases with recurrence had a significantly shorter survival time from initial SRS/fSRT than those without recurrence (p=0.045). Conclusion: The patients treated with SRS/fSRT for brain metastasis need long-term follow-up. SSR is a safe and effective treatment for the recurrence, RN, and cyst formation after SRS/fSRT for brain metastasis.

Key words: brain metastasis | stereotactic radiosurgery | radiation necrosis