toxicities was high (92%), but mostly manageable without major complications. Fourteen patients received 3 g/m², 4 patients received 2 g/m², 7 patients received 1 g/m² of cytarabine, and the rate of grade 4 leukopenia/thrombocytopenia was 64/57%, 25%/50%, and 28%/29%, respectively.

**DISCUSSION:** HD-cytarabine consolidation therapy with dose modification according to age groups for PCNSL was feasible and well-tolerated in patients 80 years of age or younger. The efficacy of HD-cytarabine was undetermined and further investigation is warranted.

**ML-14**

**RE-CHALLENGE AND MAINTENANCE THERAPY OF METHOTREXATE FOR ELDERLY PCNSL PATIENTS WITH LOW SCORED KPS**

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**PURPOSE:** The delayed neuronal toxicity after high dose methotrexate (HD-MTX) followed by radiotherapy (RT) is a serious problem for elderly CNS lymphoma patients. We started maintenance therapy (MT) with MTX after achieving complete remission (CR) to defer RT for elderly and poor Karnofsky Performance Scale (KPS) patients.

**METHODS:** We performed HD-MTX (3.5g/m²) therapy until achieving CR for the patients over 70 years whose KPS were equal to or less than 60%. After having CR, 3 courses of MT (3g/patient) for 3 weeks were introduced every 4–4 months for 2 years. At the time of recurrence, HD-MTX was repeated. But when CR was not achieved by HD-MTX alone, RT was introduced. Moreover, additional use of rituximab was considered if patients’ condition became worse.

**RESULTS:** Number of patients was 9. Median age, KPS, and median follow-up periods were 73y.o. (71–78), 40% (30–60), and 14.0 months (1–35), respectively. CR rate was 78% and two patients were not achieved CR due to the adverse events (AEs) which were acute tubular necrosis and pneumocystis pneumonia. But meanwhile, there was no AE by MT. Median OS, median PFS, median time of radiation free period and delayed neuro-toxicity were 19.5 months (95% CI 3-NA), 5.0 months (95% CI 2–22), 2.5 months, and 8.2 months, respectively.

**DISCUSSION:** The results of this study might be inferior to other reports of elderly patients due to poor median KPS. And low introduction rate of MT was undesirable. However, once MT was introduced, MT itself was safe and able to manage and the long-term prognosis was excellent.

**CONCLUSION:** Rechallenge of HD-MTX and maintenance therapy of MTX might be promising but the problems of some serious AEs and low CR rate with HD-MTX alone should be resolved.

**ML-15**

**THE FUTURE DIRECTION OF TREATMENT DEVELOPMENT FOR PRIMARY CENTRAL NERVOUS SYSTEM LYMPHOMA (PCNSL)**

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**PURPOSE:** We found that the combination of high-dose Methotrexate (HD-MTX)-based therapy and histone deacetylase inhibitor (HDACi) had a therapeutic effect on PCNSL. In addition, this year, tirabrutinib, a Bruton’s tyrosine kinase inhibitor, was approved for marketing as a single agent for relapsed/refractory PCNSL, and new therapeutic development is expected. We will examine the treatment results of PCNSL in our department retrospectively and discuss the future direction of treatment development. METHODS: From 2001 to 2014, 82 newly diagnosed PCNSL patients treated with HD-MTX/Pocabarbine (MP) as initial remission induction chemotherapy were retrospectively analyzed. RESULTS: Complete response (CR) was obtained in 38 patients (46.3%) after initial chemotherapy, and the median overall survival (OS) in the CR and non-CR groups was 2363 days and 728 days, respectively, and significantly shorter in the non-CR group (p<0.01). In the CR group, 27 cases (71.1%) recurrent and 12 cases received HD-MTX re-challenge (M-re), 14 cases received treatment other than M-re (1 case did not receive treatment), the median OS after relapse was 590 days. The median post-relapse progression-free survival (PFS) of the 10 patients undergoing M-re at the first relapse was 116 days, the median OS after relapse was 590 days. The median post-relapse PFS of 16 patients receiving other treatments was 58 days, the median OS after relapse was 532 days. There was no difference in PFS and OS after recurrence in treatment at the first recurrence (p=0.15, p=0.55). CONCLUSION: The OS of non-CR patients in the initial chemotherapy and the OS after recurrence after CR were short. The possible directions of PCNSL treatment development include 1) increasing the CR rate with initial chemotherapy and maintaining CR for a long time for newly diagnosed PCNSL, and 2) finding an effective treatment for recurrence. New drugs such as tirabrutinib and HDACis may be breakthroughs.