Primary central nervous system lymphoma case series

Zektser et al. conducted a retrospective review of the medical records of patients diagnosed with PCNSL who were treated at Soroka Medical Center between 2007 and 2019.

The study included 36 patients with, a median age of 64.9 years; 33 patients received High-dose methotrexate (HDMTX) backbone induction therapy, and 21 (58.3%) received consolidation treatment in addition. In the entire cohort, 25 patients (75.7%) achieved complete remission (CR, CRu-unconfirmed), with mean progression-free survival (PFS) of 32 ± 6.9 months and median overall survival (OS) of 59.6 ± 12.4 months. More aggressive regimens such as a combination of rituximab, HDMTX, cytarabine, and thiotepa had better responses 5 (100%) CR, but also a higher incidence of side effects such as neutropenic fever 5 (100%). In the subgroup analysis by age (younger vs. older than 60 years), the PFS was 24.2 vs. 9.3 months, and OS was 64.1 vs. 19.4 months, respectively.

A difference in clinical response and PFS favored a more aggressive protocol, but the toxicity of the multiagent combinations was significantly higher. The prognosis in younger was better than in older patients, with higher rates of clinical response, PFS, and OS, although not statistically significant. Overall treatment outcomes are encouraging; however, there is a real need for an adaptive approach for older patients and balancing between the effectiveness and side effects [1].

Ball et al. reviewed the clinical, radiological, and pathological features of ventricle-predominant PCNSLs (VP-PCNSLs) in 40 previously reported cases and report 5 additional cases. Including all cases of VP-PCNSLs (n = 45), 38% were diffuse large B-cell lymphomas (DLBCL), 11% were Burkitt lymphomas, 7% were MALT lymphomas, 4% were T-cell lymphomas, and 40% were lymphomas, not otherwise classified. VP-PCNSLs show rapid clinical progression. Patients present at a median age of 60.5 years. Unique clinical and radiological features distinguish them from other intraventricular tumors, including advanced age, edema, multifocality, hyperdensity, early and avid post-contrast enhancement, restricted diffusion, and positron emission tomography (PET) hypermetabolism. Including our cases, which were all DLBCL, and all previously reported DLBCL cases (n = 10), 8 of 10 show germinal center B-cell-like (GCB) phenotype, contrasting the high prevalence of non-germinal center B-cell-like (non-GCB) phenotype of parenchymal DLBCL PCNSLs. MYD88 L265P mutation was detected in three of our five cases. Ventricle-predominant PCNSLs are clinically and radiologically distinct, and the DLBCLs may be pathologically distinct. Further recognition of this entity may help to evaluate the role of therapies, possibly including surgical resection [2].

In a retrospective study of patients with Primary central nervous system lymphoma (PCNSL) treated between January 2001 and December 2011 at the Naval General Hospital (Beijing, China). All included patients were pathologically diagnosed with PCNSL. Specimens were obtained by stereotactic biopsy and diagnosed by pathological examination. Serological panel had to be negative for HIV.

Out of the 118 patients, 73 (61.9%) were male and 45 (38.1%) were female. Median age was 54 (range 11-83) years. All patients had B cell lymphoma. The lesions showed slightly hyperintense shadows on computed tomography (CT) images, and mostly hyperintense T1 and iso- or hyperintense T2 signals on magnetic resonance imaging (MRI). Most lesions showed patchy enhancement after

enhanced scanning, and some had the characteristic “butterfly sign” on enhanced MRI. The magnetic resonance spectroscopy of PCNSL manifested as increased Cho peak, moderately decreased NAA peak, and slightly decreased Cr peak. Positron emission computed tomography indicated high metabolism of 18F-FDG in PCNSL lesions.

MRI is important in the diagnosis of PCNSL. Understanding the imaging features of PCNSL will help improve its diagnosis in clinics [3)].

2017

Hattori et al. conducted a retrospective analysis of patients younger than 60 years (N = 10, median age 54.5) with newly diagnosed primary central nervous system lymphoma (PCNSL) at the University of Tsukuba Hospital from January 2008 to November 2016. All the patients were scheduled to receive a single regimen without registration to any clinical trials. This was based on a phase 2 study by Memorial Sloan-Kettering Cancer Center (MSKCC); induction chemotherapy with Rituximab, methotrexate, procarbazine, and vincristine (R-MPV) (five to seven cycles), followed by whole-brain radiotherapy (rd-WBRT) (23.4 Gy) and two high-dose cytarabine (HD-AC) cycles as a consolidation. The median age was 54.5 years, and median follow up duration was 33.1 months. The 3-year overall survival (OS) and progression-free survival (PFS) were 69% (95% CI 31-89%) and 56% (95% CI 20-81%). The median OS and PFS were not reached, respectively. Acute and delayed toxicities were manageable. In particular, OS and PFS of seven patients who achieved CR by the R-MPV induction chemotherapy were significantly superb (3-year OS, 100%; 3-year PFS, 80%), implying that a large proportion of patients in CR after the completion of this treatment may achieve durable disease control. On the other hand, all of the three patients who had progressive disease during this treatment died of disease progression within 1 year after diagnosis without achieving CR. Identifying the patients having a risk of failure in the R-MPV induction chemotherapy is important, and may allow us to consider a potentially more effective regimen [4)].

2016

Patients were consecutive PCNSL cases treated in Leon Berard Cancer Centre, Lyon, France, from 1985 to 2011. Histology was diffuse large B cell lymphoma in 94%. Patients were treated by methotrexate (92%) and cytarabine (63%) based-chemotherapy followed by radiotherapy for 108 patients (51%). Clinical records were reviewed for details at relapse and relationship to planned imaging. The imaging follow-up strategy was performed according to each treating physicians.

Among 209 PCNSL patients, 127 complete response patients entered in post-treatment observation and 63 (50%) subsequently relapsed. Among the 125 evaluable patients, the majority of relapses (N = 49, 80%) was asymptomatic and identified before the planned brain imaging. Surveillance imaging detected relapses before symptoms in 12 patients who entered in post-therapy observation (10%). The median number of brain imaging during the follow-up was 7 (0-13). A total of 819 MRI/CT-scan were performed leading to the detection of 12 asymptomatic relapses. The one year OS rates were 41% and 58% for symptomatic and non-symptomatic relapses, respectively (P = 0.21).

The majority of PCNSL relapses occurred outside planned follow-up with no difference in patient outcome between symptomatic and asymptomatic relapses. The role of brain imaging for the detection of relapses in the follow-up of PCNSL patients remains to be clarified [5)].

2015

Kim et al reviewed eight immunocompetent patients (five males/three females, mean age: 56 years) who received salvage PCV chemotherapy (procarbazine 60 mg/m(2), days 8 through 21: CCNU 110 mg/m(2), day 1: vincristine 2 mg, days 8 and 28) for recurrent primary central nervous system lymphomas (PCNSL) and two patients switched to PCV chemotherapy due to severe adverse effects of HD-MTX chemotherapy. Radiologic responses, survival, and adverse effects were analyzed.

Of the eight recurrent PCNSLs, three patients (37.5%) showed radiologic complete response, one patient (12.5%) showed partial response, and four patients (50%) showed progressive disease after PCV chemotherapy. Median progression free survival (PFS) from the first administration of PCV to relapse or last follow-up was 7 months (range 5-32 months) and median overall survival was 8 months (range 2-41 months). The two patients who switched to PCV chemotherapy showed PFS of 9 and 5 months from the beginning of PCV to relapse. The common side effects were thrombocytopenia, neutropenia, and peripheral neuropathy. There were 4 grade III or IV myelo-suppression, but no fatal complications, including severe hemorrhage or infection, were observed.

Salvage PCV chemotherapy has a moderate anti-lymphoma activity for recurrent PCNSLs after the HD-MTX-based chemotherapy with tolerable toxicity [6].

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