Title

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Journal

Neuro-oncology, 23(Suppl 6)

ISSN

1522-8517

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Publication Date

2021-11-01

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INTRODUCTION: Primary CNS Lymphoma (PCNSL) is a rare and ag-gressive cancer that originates from lymphocytes and develops in the central nervous system. Standard induction therapy involves high-dose methotrexate (HD-MTX)-based chemotherapy, which achieves complete or partial re-sponse in most PCNSL patients. However, there is no standard consolidation therapy. We report one case in which ibrutinib, a Bruton's tyrosine kinase inhibitor, replaced low-dose WBRT as consolidation therapy after induction by HD-MTX and rituximab. Ibrutinib treatment yielded good tolerance and further resolution of small residue lymphoma. CASE REPORT: The patient is a 77-year-old female who presented with slurred speech, right-sided weak-ness, and difficulty word-finding in early 2020. Brain MRI found multifocal lesions, and biopsy of the largest lesion near the left lateral ventricle revealed diffuse large B cell lymphoma. The patient began HD-MTX at 6 g/m^2 for the first cycle of induction therapy. She continued HD-MTX every two weeks, but dosage was reduced every cycle due to worsening renal function. Ultim-ately, MTX was discontinued after 6 cycles. Brain MRI showed significant response after HD-MTX except for small residue lymphoma at the biopsy area. 2nd line regimen rituximab and temozolomide was given to complete induction. Brain MRI was stable, but the small enhancing residue lymphoma at left peri-ventricle area was persistent after the induction therapy (uCR). Ibrutinib as consolidation therapy began after discussion with the patient. The patient tolerated 560 mg ibrutinib for 6 cycles initially, then switched to a reduced dose of 420 mg for cycles 7 and 8 due to neutropenia. Brain MRIs have been stable with resolution of the small lymphoma residue after 6 cycles of ibrutinib. The patient continues ibrutinib for the goal of one year of consolidation therapy. DISCUSSION: Our case highlights the po-tential of single-agent ibrutinib as consolidation therapy for PCNSL after HD-MTX and rituximab/temzolomide induction therapy.