Abstract: PB3091

Title: TO EXPLORE THE EFFECT AND MECHANISM OF ZANUBRUTINIB, LENALIDOMIDE, TEMOZOLOMIDE IN THE TREATMENT OF PRIMARY CENTRAL NERVOUS SYSTEM LYMPHOMA

Abstract Type: Publication Only

Topic: Lymphoma biology & translational research

Background:

Primary central nervous system lymphoma (PCNSL) is a highly malignant tumor that occurs in the central nervous system (CNS). Patients with PCNSL have a poor prognosis and there is no standard chemotherapy regimen; therefore, new treatment strategies need to be developed. In this study, we developed an innovative therapeutic regimen combining zanubrutinib, lenalidomide, and temozolomide—three drugs that can pass through the blood-brain barrier (BBB).

Aims:

Exploring the efficacy and mechanism of action of zanubrutinib and lenalidomide temozolomide combined with temozolomide in the treatment of PCNSL.

Methods:

The PCNSL cell lines U2932 and SHU-DHL2 were assayed for indicators of apoptosis, proliferation, and cycling after 48 hours of drugs incubation using flow cytometry. The drugs-treated PCNSL cell lines were subjected to RNA sequencing to screen the differential pathways between groups and validate them; PCNSL mouse models were constructed, randomly grouped and then drug-treated, and tumor proliferation and general conditions of mice were observed.

Results:

When the three drugs were administered simultaneously they strongly inhibited the proliferation of PCNSL cells, blocked the cell cycle and induced an increase in apoptosis. The combined use of these three drugs acted mainly by inhibiting the activation of the NF-KB pathway. This treatment regimen significantly inhibited tumor proliferation and prolonged survival in mice.

Summary/Conclusion:

These results suggest that the combination of zanubrutinib, lenalidomide, and temozolomide is expected to be an effective strategy for the treatment of PCNSL.

Figure



Keywords: Lymphoma therapy, Animal model, Hematological malignancy, CNS lymphoma