Aim: Role of bone marrow evaluation (BME) as part of staging work up in primary central nervous system lymphoma (PCNSL) is poorly defined. Despite being a safe procedure, BME is often poorly tolerated. Our study aimed to determine the necessity of BME in PCNSL.

Methods: Total of 2905 patients diagnosed with lymphoma between 1995 and 2013 were recruited to the Singapore Lymphoma Study. Among them 86 patients had a diagnosis of PCNSL according to WHO classification. Patients who underwent BME were identified. Bone marrow (BM) detected in either the aspirate, trephine biopsy or flow cytometry was described.

Results: Median age of PCNSL is 58 (20-79) years old. Of the 86 patients, 60.5% are male. Majority were Chinese (72.1%), followed by Malay (14%) and others (14%). Fifty-eight (67.4%) patients with PCNSL underwent BME. More patients who underwent BME received chemotherapy (83.9% vs. 44.4%; p < 0.001) or combination of chemo radiotherapy (CRT) (46.6% vs. 17.9%; p = 0.002) than patients without BME. Median survival of patients with PCNSL who received combination CRT was 45.1 month, compared to 11.8 months for those who received radiotherapy alone. Two out of 58 (3.4%) patients has evidence of BM involvement. Both patients has discordant lymphomatous involvement by low grade B cell lymphoma and received CRT according to the RTOG 93-10 (De-Angelis et al JCO 2002). There were no difference in treatment and median OS among PCNSL with and without CNS involvement. Importantly, none of the patients had concordant bone marrow involvement with aggressive lymphoma.

Conclusions: Excluding the two cases of discordant lymphomatous involvement by low grade lymphoma which are likely incidental findings, there were no patients with concordant aggressive bone marrow involvement, suggesting that BME can be safely omitted in patients adequately evaluated with systemic imaging scans. This has immediate impact in guiding staging investigation among PCNSL, potentially saving cost and sparing patients from unnecessary procedure.

Disclosure: All authors have declared no conflicts of interest.