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Improved survival with combined chemo-radiotherapy in primary central nervous system lymphoma.

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Abstract

BACKGROUND: Primary CNS lymphoma (PCNSL) is an aggressive primary brain tumor. Cranial irradiation alone rarely results in long-term disease control or prolonged survival. We retrospectively analyzed data on the effect of adding high-dose methotrexate (HDMTX) prior to whole brain irradiation (WBI).

METHODS: All patients with PCNSL diagnosed and managed during 1991-2004 were identified and demographic characteristics, prognostic factors, treatment and outcome were reviewed. Of 62 patients, 10 were excluded (4 had WBI <40 Gy and 6 had no treatment). Radiation alone was considered curative with a dose >40 Gy. Combined modality therapy included 3-4 cycles of HDMTX (3 g/m²) followed by WBI.

RESULT: Of 52 patients analyzed for outcome, 36 had WBI (dose >40 Gy), 16 received 3-4 cycles of HDMTX followed by WBI (combined modality therapy [CMT]). Median age was 48.2 years; 42 years in the CMT group, 51 years in WBI. Patient characteristics were comparable between two groups except for higher multifocal tumor in the CMT group (92% vs. 42%, p=.029). Median follow up was 12.83±6.4 months. The hazard ratio for an event was 0.64 (95% CI, 0.52-0.98) and for death 0.58 (95% CI, 0.48-0.92), both in favor of CMT. Univariate regression analysis using one-way analyses of variance (ANOVA) and multivariate Cox regression analysis for prognostic factors including age (<60 vs. >60 years), ECOG PS (0-2 vs. 3-4), extent of surgery (biopsy vs. debulking), solitary vs multifocal tumor and dose of radiation therapy (<50Gy vs. >50Gy) failed to identify any prognostic factor.

CONCLUSION: This retrospective comparison supports phase ii trial results that indicate that high-dose methotrexate followed by WBI in PCNSL improves outcome.

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