Adjuvant chemotherapy and overall survival in adult medulloblastoma.

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Abstract

BACKGROUND: Although chemotherapy is used routinely in pediatric medulloblastoma (MB) patients, its benefit for adult MB is unclear. We evaluated the survival impact of adjuvant chemotherapy in adult MB.

METHODS: Using the National Cancer Data Base, we identified patients aged 18 years and older who were diagnosed with MB in 2004-2012 and underwent surgical resection and adjuvant craniospinal irradiation (CSI). Patients were divided into those who received adjuvant CSI and chemotherapy (CRT) or CSI alone (RT). Predictors of CRT compared with RT were evaluated with univariable and multivariable logistic regression. Survival analysis was limited to patients receiving CSI doses between 23 and 36 Gy. Overall survival (OS) was evaluated using the Kaplan-Meier estimator, log-rank test, multivariable Cox proportional hazards modeling, and propensity score matching.

RESULTS: Of the 751 patients included, 520 (69.2%) received CRT, and 231 (30.8%) received RT. With median follow-up of 5.0 years, estimated 5-year OS was superior in patients receiving CRT versus RT (86.1% vs 71.6%, P < .0001). On multivariable analysis, after controlling for risk factors, CRT was associated with superior OS compared with RT (HR: 0.53; 95%CI: 0.32-0.88, P = .01). On planned subgroup analyses, the 5 year OS of patients receiving CRT versus RT was improved for M0 patients (P < .0001), for patients receiving 36 Gy CSI (P = .0007), and for M0 patients receiving 36 Gy CSI (P = .0008).

CONCLUSIONS: This national database analysis demonstrates that combined postoperative chemotherapy and radiotherapy are associated with superior survival for adult MB compared with radiotherapy alone, even for M0 patients who receive high-dose CSI.

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