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Prognostic factors in adult patients with medulloblastoma

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Abstract

Background: Medulloblastoma (MB) is a rare tumor in adults, with treatment strategies derived largely from pediatric data. Prognostic factors have not been uniformly defined in adults to date.

Methods: We retrospectively reviewed the medical records of 89 adult MB patients treated between 1995 and 2019 in our institution. Patient's characteristics, disease features, and treatment modalities were analyzed for prognostic factors using univariate and multivariate analysis.

Results: Of the 89 patients, 66% were male. Most MBs were in the cerebellum (48%), with desmoplastic/nodular histology (43%), Sonic Hedgehog molecular type (79%), and M0 Chang´s stage (72%). Intermediate- and high-risk MBs were identified in ~46% and ~47% of cases, respectively. Complete/near complete tumor resection was achieved in 62% of cases. Surgery followed by chemoradiotherapy (CT/RT) was the most frequent treatment (76%) with carboplatin-based regimens used in 70% of cases. After the first-line treatment, complete response (CR) was achieved in 80% of patients. Median overall survival (mOS) was 124.4 months (95%CI 68.5-180.1) and the median progression free survival (mPFS) was 30.5 months (95%CI 13.5-47.5), the 5-year OS was 67% and the 5-year PFS was 51%. In multivariate analysis, Chang´s stage ≥ M2 metastatic classification (P = .001), RT without CT in first line setting (P = .005), and craniospinal RT < 30 Gy (P = .015) were associated with worse survival outcomes.

Conclusions: Chang's stage ≥ M2, first-line treatment lacking CT, and first-line treatment with craniospinal RT < 30 Gy were significant predictors of poor survival. Chemoradiotherapy with craniospinal RT ≥ 30 Gy improved survival outcomes.

Keywords: Adult medulloblastoma; molecular subtypes; prognostic.