
Adjuvant chemotherapy to improve survival in average-risk adult medulloblastoma patients: Long-term results.

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Background: Medulloblastoma is extremely rare in adults and, therefore, it is difficult to accrual patients in clinical trials. Radical surgery and radiotherapy (RT) provide a significant control of disease. Nevertheless, about 25% of average-risk patients have a relapse and die because of disease progression. The role of chemotherapy (CT) after standard RT for average-risk adult patients remains controversial. **Methods:** We analyzed 48 average-risk patients according to Chang classification diagnosed from 1988 to 2016. Median age was 29 years (range 16-61), M/F ratio was 26 (54.2%)/22 (45.8%). Fifteen patients had classic medulloblastoma (31.3%), 15 patients had desmoplastic medulloblastoma (31.3%), 5 patients had extensive nodularity (10.4%) and 2 patients had large cells/anaplastic histology (4.2%). The patients were homogeneously distributed in the two groups: 24 (50%) received adjuvant RT alone and 24 (50%)

received RT + CT that consisted in a platinum-etoposide based combination. **Results:** After a median follow-up of 12.5 years, CT increases progression-free survival rate at 15 years (PFS-15 $82.3 \pm 8.0\%$ in RT-CT group vs. $38.5\% \pm 13.0\%$ in RT group $p = 0.05$) and overall survival rate at 15 years (OS-15 $89.3\% \pm 7.2\%$ vs. $52.0\% \pm 13.1\%$, $p = 0.02$). Among patients receiving CT, the reported grade ≥ 3 adverse events were: 9 cases of neutropenia; 6 cases of G3 neutropenia (25%) and 3 cases of G4 neutropenia (13%), 1 case of G3 thrombocytopenia (4%) and 2 cases of G3 nausea (8%). **Conclusions:** Our study with a long follow up period suggests that adding adjuvant chemotherapy to RT might improve PFS and OS in average-risk adult medulloblastoma patients.

Title:

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