Clinical Investigation

Upfront Chemotherapy and Involved-Field Radiotherapy Results in More Relapses Than Extended Radiotherapy for Intracranial Germinomas: Modification in Radiotherapy Volume Might Be Needed

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Purpose

To retrospectively compare the outcome of upfront chemotherapy plus
radiotherapy (CRT) and the outcome of the use of extended radiotherapy (RT) only for intracranial germinoma.

Methods and Materials

Of 81 patients with tissue-confirmed intracranial germinoma, 42 underwent CRT and 39 underwent RT only. For CRT, one to five cycles of upfront chemotherapy was followed by involved-field or extended-field RT, for which the dose was dependent on the M stage. For RT only, all 39 patients underwent craniospinal RT alone. The median follow-up was 68 months.

Results

The 5- and 10-year overall survival rate was 100% and 92.5% for RT alone and 92.9% and 92.9% for CRT, respectively. The 5-year recurrence-free survival rate was 100.0% for RT and 88.1% for CRT ($p = 0.0279$). No recurrences developed in patients given RT, but four relapses developed in patients who had received CRT—three in the brain and one in the spine. Only one patient achieved complete remission from salvage treatment. The proportion of patients requiring hormonal replacement was greater for patients who received RT than for those who had received CRT ($p = 0.0106$).

Conclusions

The results of our study have shown that the better quality of life provided by CRT was compensated for by the greater rate of relapse. The possible benefit of including the ventricles in involved-field RT after upfront chemotherapy, specifically for patients with initial negative seeding, should be addressed in a prospective study.

Author Keywords: Intracranial germinoma; Chemoradiotherapy; Radiation volume

Article Outline

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