The effect of radiation timing on patients with high-risk features of parameningeal rhabdomyosarcoma: an analysis of IRS-IV and D9803.


Abstract

PURPOSE: Radiation therapy remains an essential treatment for patients with parameningeal rhabdomyosarcoma (PMRMS), and early radiation therapy may improve local control for patients with intracranial extension (ICE).

METHODS AND MATERIALS: To address the role of radiation therapy timing in PMRMS in the current era, we reviewed the outcome from 2 recent clinical trials for intermediate-risk RMS: Intergroup Rhabdomyosarcoma Study (IRS)-IV and Children's Oncology Group (COG) D9803. The PMRMS patients on IRS-IV with any high-risk features (cranial nerve palsy [CNP], cranial base bony erosion [CBBE], or ICE) were treated immediately at day 0, and PMRMS patients without any of these 3 features received week 6-9 radiation therapy. The D9803 PMRMS patients with ICE received day 0 X-Ray Therapy (XRT) as well; however, those with either CNP or CBBE had XRT at week 12.

RESULTS: Compared with the 198 PMRMS patients from IRS-IV, the 192 PMRMS patients from D9803 had no difference (P<.05) in 5-year local failure (19% vs 19%), failure-free-survival (70% vs 67%), or overall survival (75% vs 73%) in aggregate. The 5-year local failure rates by subset did not differ when patients were classified as having no risk features (None, 15% vs 19%, P=.25), cranial nerve palsy/cranial base of skull erosion (CNP/CBBE, 15% vs 28%, P=.22), or intracranial extension (ICE, 21% vs 15%, P=.27). The D9083 patients were more likely to have received initial staging by magnetic resonance imaging (71% vs 53%).

CONCLUSIONS: These data support that a delay in radiation therapy for high-risk PMRMS features of CNP/CBBE does not compromise clinical outcomes.

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