ABSTRACT

Pediatr Blood Cancer. 2022 Jun 10:e29838. doi: 10.1002/pbc.29838. Online ahead of print.

How do we approach the management of medulloblastoma in young children?

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Therapeutic strategies avoiding craniospinal irradiation were developed for young children with medulloblastoma to improve survival while protecting the neurocognitive outcomes of these vulnerable patients. These strategies most commonly rely on high-dose chemotherapy with stem cell rescue or conventional chemotherapy combined with intraventricular chemotherapy or conventional chemotherapy with adjuvant focal irradiation. Over the past decade, our growing understanding of the molecular landscape of medulloblastoma has transformed how we risk stratify and allocate treatment in this young age group. We present the results of the most recent approaches and clinical trials for medulloblastoma of early childhood, according to the different molecular subgroups. Overall, young children with sonic hedgehog medulloblastoma treated with intensive adjuvant chemotherapy achieve excellent survival and can safely be spared from radiotherapy. For patients with group 3 and 4 medulloblastomas, the interplay between molecular alterations and treatment intensity still needs to be further delineated. While recent clinical trials point toward more encouraging survival figure for a sizeable number of them, patients identified with very high-risk feature desperately needs innovative therapies.

DOI: 10.1002/pbc.29838
PMID: 35686728