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Toxicity profile of high-dose methotrexate in young children with central nervous system tumors

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Abstract

High-dose methotrexate (HD-MTX) is used in the treatment of children with central nervous system (CNS) tumors; however, toxicity information is limited. We characterized toxicities following 102 administrations of HD-MTX (4.6-13.5 g/m²) infused over 4 or 24 h in 38 children with a CNS tumor before 6 years of age (2010-2020). Delayed clearance of methotrexate occurred following 24% of infusions. Common Terminology Criteria for Adverse Events v5 grade 2-3 mucositis was observed in 47% of individuals, Grade 4 neutropenia in 76%, and grade 3-4 thrombocytopenia in 58%. No neurotoxicity was observed. HD-MTX can be safely used with supportive care and monitoring.

Keywords: CNS tumors; children; methotrexate; toxicity.

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