Chemotherapy Dose-intensity and Survival for Childhood Medulloblastoma.

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Abstract
Aim: To determine the relationship between prescribed dose-intensity of chemotherapy and survival in childhood medulloblastoma.

Materials and Methods: A total of 55 trials from 1970-2009 were identified, 30 were eligible for analysis, with individual treatment regimes with 5-year (or more) outcome figures. Relationships of outcome to dose-intensity were analysed using weighted regression.

Results: Overall, 2,434 patients were identified, 1,010 were classified as 'standard'- and 671 as 'high'-risk patients, with 5-year overall survivals (OS) of 67.2% (95% Confidence Interval=60.5%-73.6%) and 47.6% (95% Confidence Interval=39.5%-55.7%), respectively. A protective effect for chemotherapy versus craniospinal radiotherapy alone (5-year OS of 58.2% versus 51.6%) was found. Individually, vincristine, cisplatin, lomustine (CCNU) and cyclophosphamide appear to confer the most beneficial effect, particularly for high-risk patients. Positive relationships between OS and dose-intensity were found, except for lomustine, with cyclophosphamide offering the greatest protection.

Conclusion: Consideration of chemotherapy dose-intensity may further optimise treatment, particularly in the context of risk stratification.

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