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A lower-dose, lower-toxicity cisplatin-etoposide regimen for childhood progressive low-grade glioma.

Massimino M, Spreafico F, Riva D, Biassoni V, Poggi G, Solero C, Gandola L, Genitori L, Modena P, Simonetti F, Potepan P, Casanova M, Meazza C, Clerici CA, Catania S, Sardi I, Giangaspero F.

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After successfully using cisplatin (30 mg/m²/day) and etoposide (150 mg/m²/day) in ten three-day courses for progressive low-grade gliomas, a subsequent protocol reduced the daily doses of cisplatin (to 25 mg) and etoposide (to 100 mg), with the objective of achieving the same response and three-year PFS rates with lower neurotoxicity and myelotoxicity. We treated 37 patients (median age 6 years); 23 had optochiasmatic tumours and nine were metastatic cases. Diagnoses were clinical in 13 cases and histological in 24, and comprised: pilocytic astrocytoma (17), ganglioglioma (3), pilomyxoid astrocytoma (2), and fibrillary astrocytoma (2). Treatment was prompted by radiological evidence of progression and/or clinical deterioration a median 18 months after the first diagnosis. After initial MRI staging, neurological and clinical examinations were performed before each chemotherapy cycle, with MRI after the first three courses and every three months thereafter. After a median 48 months, a volume reduction was appreciable in 24 cases (65%) and response was maximum 12 months after starting treatment. The three-year EFS and OS rates were 65 and 97%, respectively. Clinical, neurological, or functional improvements were seen in 26/37 cases. No children had a WBC nadir below 2,000/mm³. Audiological toxicity caused damage in 4/34 cases. The previous protocol had achieved volume reductions in 70% of cases, causing audiological damage (data updated) in 11/31 (P = 0.023), with three-year PFS and OS rates of 70 and 100%, respectively. Lower doses of cisplatin/etoposide are still effective in progressive low-grade glioma, with less acute and persistent morbidity.

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