

Peripheral neurotoxicity following high-dose cisplatin with glutathione: clinical and neurophysiological assessment.

Author

Pirovano C, Balzarini A, Bohm S, Oriana S, Spatti GB, Zunino F.

Address

Istituto Nazionale per lo Studio e la Cura dei Tumori, Milano, Italy.

Source

Tumori. 1992 Aug 31;78(4):253-7.

Abstract

The use of high-dose cisplatin is limited by development of severe peripheral neurotoxicity and gradual worsening of renal function. In an ongoing study of high-dose cisplatin glutathione has been employed with the aim of preventing major cisplatin-induced toxicities. Neurotoxicity was examined in detail in 32 patients with ovarian cancer treated with cisplatin (160 mg/m²) and cyclophosphamide (600 mg/m²) every 3-4 weeks for five courses. In addition to serial complete neurological examination, sensory action potentials (SAPs) and motor conduction velocities (MCVs) were also assessed. We confirmed the development of a predominant sensory involvement, characterized by mild distal paresthesias and decrease in vibratory sensibility and in deep tendon reflexes, with a slight reduction of SAPs, observed after three courses of treatment. After five courses, distal paresthesias and disesthesias, decreased proprioception and loss of vibratory sensibility with ataxic signs, absence of deep tendon reflexes, unobtainable SAPs and only moderately reduced MCVs were seen. We did not observe any case of disabling neuropathy. There was a tendency to a more severe involvement of peripheral nerves in patients aged more than fifty. The 3 patients presenting the most serious neuropathy were the oldest in the whole group. Low degree of neurotoxicity observed in this study supports a glutathione protection against cisplatin-induced neurotoxicity. As the urinary excretion of platinum indicated no changes in the renal clearance of cisplatin following repeated courses, the lack of drug accumulation and high plasma peak due to preserved renal function might explain the reduced neurotoxicity observed.

