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CASE REPORT

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Neurological Toxicity Following Treatment with Chemotherapeutic Medicines: A Short Case

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ABSTRACT

Central nervous system toxicity associated with chemotherapeutic agents has been reported in the past. Many potentially promising chemotherapeutic agents are unusable because of central nervous system toxicity. We report a case of neurological complications observed in a subject with a retroperitoneal fibromyxosarcoma treated with Adriamycin and Vincristine. The neurological symptoms started an hour after drug administration and rapidly declined with appropriate therapy.

KEYWORDS: Cancer Therapy, CNS Toxicity, Neurological Toxicity

INTRODUCTION

Neurotoxicity from cancer treatment has been widely recognized. Chemotherapy or radiotherapy may have significant effects on the central or peripheral nervous systems that can limit the course of treatment. With the development of biological and immunotherapeutic agents to treat cancer, there are new patterns of neurotoxicity that are less well-described. Sudden cerebral hemorrhages three to four weeks after the last course of chemotherapy in patients with disseminated malignant melanoma, and no evidence of brain metastases, who had undergone treatment with dimethyl triazeno imidazole carboxamide and actinomycin D has been described before.[1] Gams and Carpenter, using a combination of Adriamycin and dimethyl triazeno imidazole carboxamide, observed convulsions in two patients with malignant melanoma and one with soft part sarcoma. These phenomena appeared shortly after treatment.[2]

CASE REPORT

A 53-year-old female patient, in very poor general condition, loss of 10 kg in weight in one month, with severe painful symptoms, underwent an exploratory laparotomy an year back for a rapidly growing abdominal neoformation located deep in the mesogastrium: the laparotomy showed an inoperable retroperitoneal neoplasm located between the kidneys. The histological examination performed on a biopsy sample demonstrated it to be a myxofibrosarcoma.

Antiblastic chemotherapy was started according to the protocol proposed in literature[3], with a reduction in dosages in relation to the poor condition of the organs, i.e., Adriamycin 40 mg/m2 on day 1, vincristine 1 mg on days 1 and 5.

The patient had a gradual, clear improvement in her general condition with a gradual disappearance of the painful symptoms, but the cycle of therapy could not be repeated because of the hematological conditions. At this time, about an hour after the drugs were administered, the patient began to feel a bilateral sensation of muscular tension in her neck, and a feeling of chest tightness followed in rapid succession by shuddering tremors in her upper limbs in flexed position, frequent rhythmic rotations of her head to the right, and shuddering contractions of the chest wall. She also felt muscular rigidity of the entire right lower limb without any involuntary motor activity; she did not lose consciousness and did not foam at the mouth. However, the patient noted visual disturbances (disorders of accommodation with a lack of clear vision), difficulty articulating words, and a sense of mental confusion. Intravenous benzodiazepines and phenobarbitone were rapidly administered, which led to a total regression of her symptoms within approximately 50 minutes. A neurological examination was carried out the morning after. This was totally negative, and the electroencephalogram was within normal limits. Brain scintigraphy performed two days later did not highlight any pathological alteration. After this cycle of chemotherapy, the patient repeated

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the three-drug combination three times without experiencing any particular neurological manifestations. The electroencephalogram also remained within normal limits. The patient is currently in complete remission.

CONCLUSION

The speed of onset and resolution of the neurological picture, without any apparent objective support, seems to be suggestive of a type of pharmacodynamic toxicity. Neurological issues are the most feared complications of cancer and therapy. Recognition of these patterns of toxicity is important as drug discontinuation or dose adjustment may prevent further neurologic injury. Also, knowledge of these toxicities helps to differentiate treatment-related symptoms from progression of cancer or its involvement of the nervous system.

REFERENCES

1. Gerner RE, Moore GE, Didolker MS. Chemotherapy of disseminated malignant melanoma with dimethyl triazeno imidazole carboxamide and dactinomycin. Cancer 1973;32:756-60.
2. Gams RA, Carpenter JT. Central nervous system complications after combination treatment with adriamycin (NSC-123127) and 5-(3,3-dimethyl-1-triazeno)imidazole-4-carboxamide (NSC-45388). Cancer Chemother Rep. 1974 (58):753–4.
3. Gottlieb JA. Proceedings: Combination chemotherapy for metastatic sarcoma. Cancer Chemother Rep. 1974;58(2):265-70.

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