VINCRISTINE INDUCED JAW PAIN: A CASE REPORT

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ABSTRACT

Vincristine, a vinca alkaloid, is an essential component of chemotherapy regimens used to treat various malignancies. Neurotoxicity is the predominant adverse effect of vincristine, rarely involving cranial nerves. Here a 23 year old female developed jaw pain, a manifestation of cranial neurotoxicity, following administration of vincristine.

Key Words: Vincristine, jaw pain, neuropathy.

Key message: It is necessary to use vincristine carefully in patients with history of neurological disorders, liver dysfunction and/or receiving other concomitant neurotoxic medications.

INTRODUCTION

Vincristine, a vinca alkaloid, is an essential component of chemotherapy regimens used to treat acute lymphocytic leukemia, lymphoid blast crisis of chronic myeloid leukemia, Hodgkin and non-Hodgkin lymphomas. It also plays a role in some multimodality therapies of Wilms tumor, Ewing sarcoma, neuroblastoma and rhabdomyosarcoma. Peripheral neurotoxicity is the predominant toxicity of vincristine. But rarely cranial nerves are affected resulting in hoarseness, diplopia, jaw pain, facial palsies and laryngeal paralysis.1

CASE HISTORY

A 23 year old female patient presented to general surgery department with chest pain and swelling over right side of the chest for three months. CT scan of chest suggested an expansile, mixed lytic/sclerotic lesion of anterior end of right sixth rib near the costochondral junction with cortical destruction, large lobulated heterogeneously enhancing soft tissue component and periosteal reaction. Resection of the vascular tumor involving right rib was
done. Biopsy was suggestive of neuro-ectodermal tumor, most likely to be Ewings sarcoma. Palliative chemotherapy was planned with vincristine, cyclophosphamide and adriamycin. One month after the resection, first cycle of chemotherapy was given with injection vincristine 2 mg intravenously in 100 ml normal saline over 15 minutes, injection adriamycin 110 mg (75 mg/m$^2$) intravenously in 250 ml normal saline over 30 minutes, injection cyclophosphamide 1800 mg (1200 mg/m$^2$) intravenously in 500 ml normal saline plus 600 mg mesna intravenously over 1 hour. Prophylaxis against emesis with palanosetrone, aprepitant and dexamethasone was given. Injection pegylatedfilgrastim was administered on the day of chemotherapy. Post-chemotherapy period was uneventful.

Four days following the first chemotherapy cycle, patient complained of bilateral jaw pain and headache for two days. There was no history of fever, nausea and vomiting. Vitals were normal and no abnormalities were detected on central nervous system examination. She was diagnosed to be suffering from vincristine induced jaw claudication. She was treated with injection tramadol 50 mg intravenously once daily for two days and buprenorphine transdermal patch. Pain subsided after two days of treatment.

**DISCUSSION**

Vincristine induced neurotoxicity is primarily characterized by a peripheral, symmetric, mixed sensory-motor and autonomic polyneuropathy.\(^1\) Rarely it may also involve cranial nerves and jaw pain may be a manifestation of the above. Previous studies have shown that onset of jaw pain is within an average duration of three days following vincristine administration.\(^2\) Our patient also developed jaw pain after four days of vincristine administration. Neurotoxic effects may be severe with cumulative dose of 15-20 mg.\(^1,3\)

The only known effective intervention for vinca alkaloid neurotoxicity is discontinuing treatment or reduction of dose or frequency of drug administration. Although a number of agents, including thiamine, vitamin B$_{12}$, folinic acid, pyridoxine and neuroactive agents like sedatives, anticonvulsants have been used, these treatments have not shown clear and consistent effectiveness.\(^1\) However, our patient was treated with opioid analgesics following which there was remission of pain.

Neurotoxic manifestations are generally cumulative and resolve slowly after treatment, often requiring many years. Therefore, it is necessary to be cautious while using vincristine as a treatment option in patients with antecedent neurological disorders like Guillain-Barre
syndrome, poliomyelitis etc.\textsuperscript{1} Vincristine should also be given cautiously in patient with liver dysfunction and those receiving neurotoxic concomitant medications like isoniazid, phenytoin, allopurinol etc.\textsuperscript{4}

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**REFERENCES**