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CASE REPORT

Oxaliplatin-induced laryngospasm - A case report

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ABSTRACT

Oxaliplatin is third-generation platinum compound used in the treatment of colorectal cancer, gastrointestinal cancers, and few other malignancies. It is mostly used in combination regimens with 5-fluorouracil /leucovorin or capecitabine. Neurotoxicity is the major dose-limiting adverse event. Peripheral neuropathy, predominantly of sensory type occurs in 85-95% of patients. Severe immediate hypersensitivity reactions are very rare and generally occurs after the sixth cycle. Here, we report a 54-year-old female with Stage IV colon cancer who developed jaw muscle spasm, suffocation, and dysphonia during the infusion of 3rd cycle of CAPOX regimen. The reaction lasted up to 1 h even after the infusion was stopped and was managed with steroids and antihistamines. Laryngospam is a very rare side effect, so nursing staff and clinicians should be prepared for the management of such hypersensitivity reactions.

KEY WORDS: Colorectal Cancer; Malignancies; Adverse Event; Neurotoxicity; Laryngospasm; Hypersensitivity Reactions

INTRODUCTION

Chemotherapy is the primary treatment option for various cancers since decades.[1] Oxaliplatin is a third-generation platinum derivative used as a first-line agent in the treatment of colorectal cancer and also as adjuvant in many other cancers. It is mostly used in combination regimens with 5-fluorouracil / leucovorin (FOLFOX) or capecitabine (CAPOX).[2,3] The most common side effects of oxaliplatin includes neurotoxicity, nausea, diarrhea, and vomiting. Acute and chronic form of peripheral neurotoxicity are the most frequently occuring non hematological toxicity. Neurotoxicity due to oxaliplatin is found to be dose-limiting.[4] Hypersensivity reactions (HSR) occurs in about 15-20% of the cases. There are studies which suggest that HSRs occur during the seventh, eighth, or ninth infusion but there but occurrence of reaction during the first 3 courses is very rare (0.4%). The incidence of severe reactions (0.5%) and occurrence of reaction during the first 3 courses of treatment is very rare (0.4%). Features of hypersensitivity reactions include rash, urticaria, flushing, itching, abdominal cramps, diarrhea, and backpain.[5-7] In some cases, more severe symptoms manifest, such as tachycardia, bronchospasm, stridor, dysphonia, hypotension or hypertension, and seizures. Laryngospasm is considered to be part of a HSR according to a study by Brandi et al., 2003.[8] It is thought to be a Type I HSR. Park et al., 2016, has graded immediate hypersensitivity reactions as Grades 1-5 based on common terminology criteria for adverse events. Accordingly, the case report presented here is a Grade 2 reaction which required symptomatic treatment. Here we are reporting one such case that occured in the 3rd cycle of the treatment.

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CASE REPORT

A 54-year-old female presented to a local hospital with complaints of bleeding per rectum of 2 months duration.

Colonoscopy showed an ulceroproliferative lesion in the ascending colon. She underwent right hemicolectomy and was referred to us for further management. Staging workup with computed totmography scan abdomen showed 3 peripherally enhancing lesions in segment 3 and 4 of liver suggestive of metastasis. Histopathology showed moderately differentiated adenocarcinoma penetrating the serosa and 4 nodes were positive. Her hemogram, renal, and liver function were normal. She was started on combination chemotherapy with oxaliplatin and CAPOX. Following the first course of chemotherapy with CAPOX, she developed abdominal pain and vomiting which settled with symptomatic measures. She received her 2nd course as per the schedule. After one week, she came with complaints of loose stools and multiple episodes of emesis necessitating admission. Diarrhea persisted for about one week and improved with antibiotics and other supportive therapy. As a result of this there was a delay in 3rd course of chemotherapy. During the infusion of oxaliplatin in the 3rd cycle, she complained of jaw spasm (a feeling of locked jaw) eventually leading to slurring of speech, suffocation, and voice became very feeble. This lasted for about 1 h even after stopping the infusion. She was treated with hydrocortisone, chlorpheneramine, and clonazepam; it took her almost 15 min for the relief of the reaction. She did not give any history of intake of cold beverages during the infusion of oxaliplatin. As it was a serious event, oxaliplatin was discontinued and CAPOX was only continued for the rest of the planned course of chemotherapy.

DISCUSSION

Neurotoxicity is the major dose-limiting adverse event associated with oxaliplatin. Neurotoxicity is predominantly of sensory peripheral neuropathy and it occurs in about 85-95% of patients. It frequently recurs with subsequent cycles. It may be precipitated by or exacerbated by exposure to cold. In a previous study, 89.5% of patients treated with either FOLFOX or CAPOX showed acute type of peripheral neuropathy and severe acute was shown by 21.9% of patients.[7] Hypersensitivity reactions to cisplatin and carboplatin are a well-known phenomena with an incidence of 10-27%.[9] Four cases of oxaliplatin-induced laryngospasm was reported in August, 2010 at the Netherlands pharmacovigilence center and 85 cases were reported by the World Health Organization collaborating center. The database of EudraVigilance also contained 155 reports of laryngospasm due to use of oxaliplatin. HSRs to oxaliplatin tend to occur during the seventh to ninth infusion.[6,7,9-12]

There are no known risk factors for oxaliplatin-associated HSR. HSR is thought to be a Type I hypersensitivity Ig-E-mediated reaction as the patients develops HSR after multiple infusions of oxaliplatin.[10] Readministering oxaliplatin to patients with HSRs has been attempted using several methods, such as using prophylactic agents (i.e., hydrocortisone and antihistamines), extending administration time, and using desensitization procedures.

Lorazepam is also found to be effective in reducing symptoms. Avoid contact with cold items to avoid pseudolaryngospasm. According to Yanai et al., 2012, discontinuation of oxaliplatin regimen has become necessary due to hypersensitivity reactions and some counter action has to be taken to stop this and they have also stated that rechallenge protocol could be one of the option for these kind of patients.[13] There are many other protocols being discussed in various studies such as the desensitization protocol, which consists of 12-steps and was found to be very successful but had limitations such as unaffordability, insufficient number of trained professionals. Park et al., discussed about another 11-step protocol which describes about increasing the infusion rate regularly.[14]

CONCLUSION

Dysphonia and dysarthria due to laryngospam is a type of hypersentivity reaction which commonly occurs at the later cycles of the oxaliplatin therapy but in this case report it occurred in the 3rd cycle. It can be avoided by closely monitoring the patient and taking immediate measures for the management by the physicians.

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