A case report of oxaliplatin extravasation

A 64-year-old Caucasian man presented with synchronous metastatic adenocarcinoma of the sigmoid colon and extensive liver metastases. He was treated with 5-fluorouracil and folinic acid weekly from the time of diagnosis in December 2001. He presented in March 2002 with an acute large bowel obstruction and underwent emergency surgery. He was then referred to the Peter MacCallum Cancer Institute for further chemotherapy. In view of extensive liver metastases, and logistical reasons, we decided to treat him with oxaliplatin and capecitabine [1]. Oxaliplatin was administered via a peripheral venous catheter.

On the first day of treatment, he had extravasation of oxaliplatin over his left forearm after 1 h of infusion. There was initial erythema and swelling of the forearm and on the advice of the pharmaceutical company, a cold compress was applied. He was also prescribed 0.3% heparinoid cream. The erythema and oedema improved after 4 days to form a peau d’orange appearance (Figure 1). This progressed to form a red brown, tender induration around the left forearm. He was treated with antibiotics and anti-inflammatory medication. The skin induration persisted for the next 4 weeks and he subsequently developed progressive sclerosis of the skin with increasing paraesthesia over the affected area and over the dorsum of the left hand. He had difficulty with certain movements of his left hand and forearm, especially pronation and supination. The erythema over the area finally cleared about 8 weeks after extravasation, leaving an area of sclerotic skin over the left forearm with paraesthesia over that area and the adjacent skin (Figure 2).

A magnetic resonance imaging (MRI) scan performed 3 months after the initial extravasation showed diffuse skin thickening over the anterior and radial aspect of the left forearm. The underlying musculo-fascial planes were preserved, with no signal abnormalities in the muscles or surrounding nerves. The patient was able to regain most of the function over his left forearm and hand 1 month later, although he had persistent skin fibrosis and numbness around the area of extravasation.

He achieved a partial response after three cycles of oxaliplatin and capecitabine, but developed significant peripheral neuropathy and had his chemotherapy changed to include irinotecan instead of oxaliplatin.

Discussion

There has been another case report of extravasation of oxaliplatin in the literature and the clinical picture was extremely similar to our patient [2]. In that patient, there was necrosis of the underlying muscle after extravasation of oxaliplatin. The patient described responded after 2 months of treatment to non-steroidal analgesics and antibiotics as well as lymphatic drainage and physiotherapy.

In a retrospective analysis, where 271 patients were treated with oxaliplatin [3], 26 patients had their infusion via a peripheral vein (total of 299 applications) and 245 via infusa-ports (1536 applications). There were six small volume extravasations occurring in the group with peripheral infusion of oxaliplatin, and two extravasation reactions in the group treated via an infusa-port (~100 mg in each case).

The six peripheral vein small volume extravasations did not result in any significant untoward effects in the patients involved. However, the two patients who had port-site extravasation developed
palpable swelling with pain on pressure followed by signs of inflammation and impairment of function of the right arm, 3 days after extravasation. The pain and inflammation responded well to non-steroidal analgesics in the first patient. In the second patient, the symptoms persisted for 3 weeks despite the use of topical cool-packs and diclofenac ointment in addition to oral non-steroidal analgesics and morphine. An MRI scan revealed subacute inflammation of the subcutaneous fat, without necrosis, in the second patient.

There are no guidelines as yet regarding the management of extravasation of oxaliplatin. The manufacturer does not recommend the use of cold packs as it might trigger the cold neuropathy associated with oxaliplatin. A warm compress applied during and after the infusion is recommended, which should limit pain and inflammation at the injection site. Fenchel and Karthus recommend the use of a local infiltration of 5 ml of sodium thiosulfate (10%) and distilled water, as for treatment of cisplatin extravasation [4]. However, this is not a universally accepted practice.

Conclusion

We feel that oxaliplatin should be considered a ‘vesicant’ and due care must be exercised during its administration. If possible, oxaliplatin should be administered through a central line. Acceptable evidence-based recommendations are needed for the treatment of extravasation caused by this agent.

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