Acta Scientific Cancer Biology

Volume 3 Issue 5 May 2019

Case Report

Docetaxel Induced Hand-Foot Syndrome: A Case Study

Ruchir Tandon*

Consultant, Department of Medical Oncology, Jaypee Hospital, Noida, Uttar Pradesh, India

***Corresponding Author:** Ruchir Tandon, Consultant, Department of Medical Oncology, Jaypee Hospital, Noida, Uttar Pradesh, India.

Received: February 25, 2019; **Published:** April 08, 2019

Abstract

Palmar–plantar erythrodysesthesia, also known as hand–foot syndrome (HFS), is a well-known dermatologic adverse event that can occur with a variety of cytotoxic chemotherapies including fluoropyrimidines, cytarabine, liposomal doxorubicin, and taxanes. HFS often presents as painful erythema's and desquamation of the skin involving the palms of the hands and the soles of the feet. Here in we report a case of a male with adenocarcinoma prostate stage IV with pleural effusion (left) that developed severe hand-foot syndrome with docetaxel. The exact mechanism of this side effect in not known. All patients received supportive care to manage the symptoms of their dermatologic toxicity. Based on the temporal relationship of the event and previous reports, we found that docetaxel was the probable offending agent. All the physicians using this drug must be aware of this side effect.

Keywords: HFS; Docetaxel; Toxicity

Introduction

Dermatologic toxicity is a well-known adverse effect of different cytotoxic and targeted antineoplastic drugs [1]. Cutaneous surfaces such as hair, skin, mucous membranes, and nails can experience an array of reactions including, but not limited, to immune-mediated hypersensitivity, hyper pigmentation, nail changes, erythema, and various forms of dermatitis [1,2]. Palmar–plantar erythrodysesthesia, also known as hand–foot syndrome (HFS), is a dermatologic condition which often presents as painful erythemas involving the palms and soles of the feet [3]. With cutaneous reactions often being inconsistently documented, there exists a wide variety of proposed incidence rates. Conventional chemotherapeutic agents most frequently associated with HFS include Capecitabine, Cytarabine, Fluorouracil, liposomal Doxorubicin, and Taxanes. The incidence and severity of HFS varies between chemotherapeutic agents with some drugs, such as Capecitabine, exhibiting rates as high as 64% [4]. Incidence of taxane-induced HFS is thought to be in the range of 5–10%, with Docetaxel being a more common offender than Paclitaxel [5].

While there are many proposed mechanisms and predispositions to chemotherapy-induced HFS, the true pathogenesis is not currently known. A common theory linked to histological findings is a direct cytotoxic effect exerted on the basal keratinocytes by the chemotherapeutic agent. [3] This aligns with the clinical presentation of cutaneous involvement of the palms and sole of the feet, which possess highly keratinized epithelial tissue [6]. Taxane-induced HFS, can be distinct from other classes with occasional erythematous plaques and further severity on the dorsal side of the hand [7]. We observed a series of patients experiencing dermatologic reactions secondary to administration of Docetaxel in combination with Carboplatin, Trastuzumab, and Pertuzumab (TCHP) for the treatment of breast cancer.

Case Report

A 62-year-old male was diagnosed with adenocarcinoma prostate stage IV. He had underwent TURP and Histopathology showed Adenocarcinoma prostate gleasons 4+3=7 on TURP in January 2018.His PSA at time of diagnosis was 40ng/ml. He was started on ADT with Tab. Bicalutamide + Inj. Leuprolide and later underwent bilateral orchiectomy. PET CT on 9th Sep 2018 revealed bone metastasis and PSA increased up to 149ng/ml. He was then started on Docetaxel+Prednisolone based palliative chemotherapy. Partial Response was seen after 3 cycles as per PET CT, PSA decreased to 1.04ng/ml. He received 6th cycle of DOCETAXEL based palliative chemotherapy on 14th Nov 2018.

The patient was admitted as his PET CT of 26th Dec 2018 showed resolution of skeletal lesions and bilateral pleural effusion (Left>Right) and ascitis. However PSA level was 0.49ng/ml.

Blood reports shows that he had low albumin = 2.8 gm/dl and total bilirubin of 1.5mg/dl (direct = 0.5mg/dl). After sixth cycle of chemotherapy by Docetaxel hand and foot syndrome symptoms were observed in the patient (Figures 1-3).

Figure 1

Figure 2

Figure 3

The patient was treated with supportive care with Hafoos cream (12% urea and 6% lactic acid). After 10 days on 5th Dec, 2018, improvement was seen in patient's hand and foot (Figures 4-6). In present the patient is on Hafoos cream for the Hand and Foot Syndrome (HFS). He had Pleural effusion which was tapped on 5th Dec, 2018 was not suggestive of malignant cells.

Figure 4

Figure 5

Figure 6

The patient was again admitted for a day on 26th Dec, 2018 with complaints of tense abdomen and was found to have Ascitis by ultrasound. He underwent therapeutic ascitic tapping under human albumin cover. Ascitic fluid was negative for malignant cytology. His Serum Albumin level was low. The patient was discharged on the same day and was instructed to consume high protein diet.

In January 2019 he was started on Tab Abiraterone 250mg once daily with low fat meal as maintenance therapy. Patient was last seen in follow up in February 2019 in OPD and he is in PS 1 as per ECOG scale and is asymptomatic at present.

Discussion

The incidence of dermatologic manifestations with docetaxel is difficult to quantify and predict. Currently, there are case reports available in the literature that provides an example of docetaxel-induced HFS [7,9]. Our case provides an atypical presentation of this toxicity. In the NeoSphere trial, the incidence of rash was reported to be 21–29% when Docetaxel was combined with Trastuzumab and/or Pertuzumab [10].

Periarticular thenar erythema and onycholysis (PATEO) syndrome is a dermatologic reaction that can occur with Docetaxel and often affects the dorsum of the hands [5,9]. PATEO was considered in the differential diagnosis of the treatment-related toxicities observed in each of our patients. The dorsal nature of the dermatologic toxicity in our patients could represent a mild or early case of PATEO, however this reaction was considered less likely due to the lack of rash on the area of the Achilles tendon and lack of onycholysis in all these patients.

Optimal management of HFS has yet to be defined [6]. Treatment depends on the severity of HFS and includes supportive care using emollients and creams to pacify the symptoms. Topical corticosteroids can also be considered as part of management; however there has been variable efficacy described in the literature with this approach to treating HFS. Dose reductions may also be required in severe cases [12,13]. In conclusion, Docetaxel-induced HFS can be a challenging classic taxane reaction for both patients and clinicians and can present in a unique and atypical manner.

Many cases of Docetaxel Induced hand and foot syndrome were observed in different types of cancer patients [7,8].

Bibliography

1. Payne AS., *et al*. "Dermatologic toxicity of chemotherapeutic agents". *Seminar on Oncology* 33 (2006): 86-97.

2. Remlinger KA. "Cutaneous reactions to chemotherapy drugs: the art of consultation". *Archives of Dermatology* 139 (2003): 77-81.

3. Janusch M., *et al*. "The hand foot syndrome: a frequent secondary manifestation in antineoplastic chemotherapy". *European Journal of Dermatology* 16 (2006): 494-499.

4. Thomas ES., *et al*. "Ixabepilone plus capecitabine for metastatic breast cancer progressing after anthracycline and taxane treatment". *Journal of Clinical Oncology* 25 (2007): 5210-5217.

5. Sibaud V., *et al*. "Dermatological adverse events with taxane chemotherapy". *European Journal of Dermatology* 26 (2016): 427-443.

6. Nagore E., *et al*. "Antineoplastic therapy-induced palmar plantar erythrodysthesia ('hand-foot') syndrome". *American Journal of Clinical Dermatology* 1 (2000): 225-234.

7. Jain A and Dubashi B. "Docetaxel-induced hand foot syndrome: no dose is a safe dose". *Journal of Pharmacology and Pharmacotherapeutics* 3 (2012): 200-201.

8. Gurumurthi R., *et al*. "Docetaxel-induced hand and foot syndrome in a patient with metastatic breast carcinoma". *Indian Journal of Dermatology* 58 (2013): 380-382.

9. Childress J and Lokich J. "Cutaneous hand and foot toxicity associated with cancer chemotherapy". *American Journal of Clinical Oncology* 26 (2003): 435-436.

10. Gianni L., *et al*. "Efficacy and safety of neoadjuvant pertuzumab and trastuzumab in women with locally advanced, inflammatory or early HER-2 positive breast cancer (NeoSphere): a randomised multicentre, open-label, phase 2 trial". *Lancet Oncology* 13 (2012): 25-32.

11. Jolly Patel., *et al*. "Case series of docetaxel-induced dorsal hand-foot syndrome". *Therapeutic Advances in Drug Safety* 9 (2018): 495-498.

12. Gressett SM., *et al*. "Management of hand-foot syndrome induced by capecitabine". *Journal of Oncology Pharmacy Practice* 12 (2006):131-141.

13. von Moos R., *et al*. "Pegylated liposomal doxorubicin-associated hand-foot syndrome: recommendations of an international panel of experts". *European Journal of Cancer* 44 (2008): 781-790.

Volume 3 Issue 5 May 2019

© All rights are reserved by Ruchir Tandon.