Long-Term Response with Eribulin Mesylate in a Breast Cancer Patient: A Case Report

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Keywords

Eribulin · Metastatic breast cancer · Long-lasting complete response · Bone metastasis

Abstract

Despite the wide pharmacological armamentarium available for the treatment of metastatic breast cancer (MBC), long-lasting control of disease is challenging, especially in heavily pretreated patients. In this case report, we documented a long-lasting complete response (CR) with eribulin in a relatively young woman with MBC and bone metastasis, who did not benefit from prior chemotherapy regimens. Besides CR, the patient was able to maintain an excellent performance status and was free from the severe pain experienced before the initiation of eribulin. Noteworthy, eribulin treatment was very well tolerated, with only a mild alopecia being reported; response was maintained also after a temporary dose interruption and a therapeutic holiday due to non-treatment-related increase in liver enzymes and steatosis.

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Introduction

Eribulin mesylate is one of the most recent agents introduced in the pharmacological armamentarium for the treatment of metastatic breast cancer (MBC). It is a syn-

thetic analog of halichondrin B, a natural compound found in marine sponges which is able to inhibit microtubule dynamics [1, 2]. Eribulin mesylate showed remarkable survival benefit and a favorable toxicity profile in the pivotal, randomized, phase III EMBRACE trial [3]. Based on the EMBRACE results, in 2011 the European Medicines Agency (EMA) approved eribulin mesylate for the treatment of patients with locally advanced or MBC who have progressed after at least two chemotherapeutic regimens for advanced disease (prior therapy should have included an anthracycline and a taxane unless patients were not suitable for these treatments). Some years later, the EMA authorized the use of this molecule also in the second-line setting based on the results of another randomized phase III study [4, 5].

However, patients enrolled in clinical trials usually differ from patients treated in the community setting, the latter usually being of older age and having worse performance status and more comorbidities. Moreover, use of chemotherapy agents in the “field practice” setting differs from the strictly controlled protocols applied in trials. Therefore, assessment of performance of chemotherapy agents in field practice scenario helps clinicians to better apply results from clinical studies to everyday practice. To this end, it has been suggested that exploring the potential factors associated with long-lasting response to eribulin would be of the highest interest [6].

Here, we report the clinical experience of long-term administration of eribulin in an MBC patient.

Fig. 1. Bone lesions before the initiation of eribulin (December 2015).

Fig. 2. Bone lesions after the initiation of eribulin (November 2016).

Case Description

This is the case of a 55-year-old female who was admitted to our hospital in July 2012 for a self-reported nodular mass of the left breast. The patient did not present any relevant comorbidity or familial history of this disease. She was in her menopause. Clinical and US examination showed a ductal infiltrating carcinoma, moderately differentiated (stage IV). Estrogen receptors (ER) and progesterone receptors (PgR) were positive in 95% of cells. HER2/neu score was 1, and Ki67% was 26%.

From September 2012 to February 2013, we instituted neoadjuvant chemotherapy with doxorubicin + cyclophosphamide (4 cycles), followed by Taxotere (4 cycles): this strategy led to a partial response. In March 2013, the patient underwent unilateral lymphadenectomy, and was prescribed anastrozole (1 tablet/day) plus local radiotherapy (50 Gy). One year later, surgical reconstruction of the left breast was performed.

At a scheduled routine control, in May 2015, lymph adenopathy of the right breast was disclosed. Biopsy showed a lymph node metastasis of the primary tumor (ER 90%, PgR 90%, HER score

2+). PET and MR imaging confirmed the diagnosis. One month later, in June 2015, lymphadenectomy was performed. Treatment with the aromatase inhibitor was continued, and the patient started chemotherapy with vinorelbine, cisplatin, and 5-fluorouracil (6 cycles), followed by metronomic chemotherapy to control angiogenesis.

In December 2015, PET and MRI showed focal hyperaccumulation at the spine and hips (Fig. 1). These lesions were associated with severe pain (8–10 on a visual analogical scale).

After multidisciplinary assessment of the case, given the refractoriness to prior regimens, the triple-negative status of the disease, the presence of severe pain, and the relatively young age of the patient, we instituted therapy with eribulin mesylate (1.23 mg/m² on days 1 and 8, every 21-day cycle) in January 2016. This therapy was associated with palliative radiotherapy on bone lesions (3–30 Gy). In March 2016, the patient showed a partial response on bone lesions. In August 2016, US imaging showed liver steatosis, which was paralleled by increased transaminases. However, examination by a hepatology specialist excluded liver involvement and/or treatment-related toxicity. Further imaging examinations, in November 2016, showed a complete response (CR) at all lesions (Fig. 2). In total, the patient was administered 22 cycles of eribulin mesylate; only one temporary dose reduction was necessary (from 1.23 to 0.97 mg/m² after a 3-week therapeutic holiday) due to the increase in liver enzymes, which was, however, judged as not related to therapy. The only other adverse event was grade 2 alopecia, which started during the 10th cycle and lasted up to the 16th cycle.

At the time of the drafting of the present report (March 2018), the patient is still experiencing a CR. Her performance status is 0, the pain has disappeared, and alopecia has completely reverted. Liver steatosis has disappeared, and no other relevant alterations can be detected.

Clinical Relevance and Conclusions

Despite the wide pharmacological armamentarium available for the treatment of MBC, long-lasting control of disease is challenging, especially in heavily pretreated patients

[6–8]. In this case report, we documented a long-lasting CR with eribulin in a relatively young woman with MBC and bone metastasis, who did not benefit from prior chemotherapy regimens. Besides CR, the patient was able to maintain an excellent performance status and was free from the severe pain experienced before the initiation of eribulin. Noteworthy, eribulin treatment was very well tolerated, with only a mild alopecia being reported. Response was maintained also after a temporary dose interruption and a therapeutic holiday due to non-treatment-related increase in liver enzymes and steatosis. The importance of multidisciplinary management to control this latter event should also be stressed, since it allows a complete resolution of hepatic disease and, therefore, the continuation of chemotherapy.

We believe that even with the inherent limitations common to any anecdotal case, the present case report highlights that eribulin treatment could achieve a long-term control of MBC without any major safety issue.

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Disclosure Statement

The authors have no conflicts of interest directly relevant to this paper.

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