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Case Report
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Response to Eribulin in a Difficult-To-Treat Triple Negative Breast Cancer Patient

Raul Marquez Vazquez*

Anderson Cancer Center, Spain

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***Corresponding author:** Raul Marquez Vazquez MD, Anderson Cancer Center, Spain, E-mail: raulmarquez@mdanderson.es

Abstract

In this paper, we report our experience with eribulinmesylate in a locally advanced triple negative breast cancer (BC) patient who was treated with antracyclines and taxanes, and became metastatic. After one refractory line with Capecitabine and Bevacizumab, there was response to Eribulin. No unexpected acute toxicity was observed.

Keywords: Triple negative breast cancer (TNBC); Eribulin; Refractory

Introduction

TNBC constitutes ~10%–20% of all BC cases. The term TNBC could also be often called "basal-like (BL) BC"; however, they are not the same. Currently, the backbone of therapy for TNBC is mainly chemotherapy as there are no effective specific targeted agents approved to treat TNBC. Patients with TNBC do not benefit from hormonal or trastuzumab-based targeted therapies because of the loss of target receptors. Although these patients respond to chemotherapeutic agents such as taxanes and anthracyclines better than other subtypes of breast cancer, prognosis remains poor. The recombinant monoclonal antibody bevacizumab is currently the most widely used and developed antiangiogenic drug in the treatment in fist lineMBC [1-3]. Eribulin is a microtubule inhibitor and a synthetic analog of the natural product halichondrin B isolated from the marine sponge Halichondriaokadai, and it has been approved in the second line treatment of advanced breast cancer in patients who received anthracyclines and taxanes [4].

Case Report

A 68 years old female with no relevant past history was diagnosed in April 2014 with mammogram and ultrasound of the breast with a 18x15mm nodule in the external upper quadrant of the left breast which had suspicious lymph nodes.

A biopsy confirmed a grade 3 invasive ductal carcinoma (IDC) that was negative for estrogen receptors (ER), progesterone receptors (PgR) and human epidermal growth factor receptor 2 (HER2). High linfovascular invasion was presented. On May 2014 she underwent conservative surgery of the breast, sentinel lymph node biopsy and axillary dissection. The final pathology report showed a high grade IDC pT2 (40mm) with disease in +3 out of 10 lymph nodes (pN1) dissected. The phenotype it was consistent with triple negative.

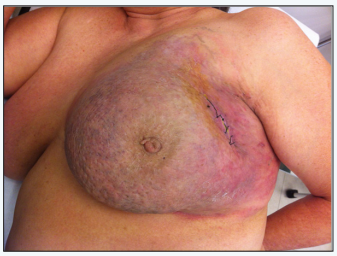

Figure 1: Inflammatory breast cancer after conservative surgery.

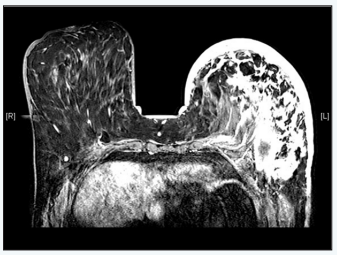

Figure 2: An MRI showed a large left mass infiltratin the whole breast and skin.

An adjuvant chemotherapy based on AC (60/600 mg/m2) x 4 ->Weekly Paclitaxel (80mg/m2) x 12 was planned. It started on July 8th, 2014. While she was receiving the 3rd AC, she was

admitted in hospital due to swelling (edema) and redness (erythema) of the breast. It improved after receiving antibiotic, but soon it got worse. A biopsy of the skin put into evidence infiltrating carcinoma and weekly paclitaxel was initiated on September 2014. After 5 cycles, with slightly improvement, the patient asked a second opinion in our Institution. This was how the breast looked like: (Figure 1,2).

We added Carboplatin (AUC 2) to weekly paclitaxel to increase response. After 3 more cycles we saw no benefit, and the tumor was spreading laterally: (Figure 3).

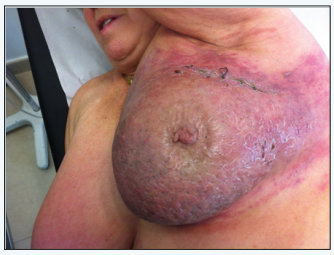

Figure 3: Inflammatory breast cancer refractory to antracyclines and taxanes.

A PET-CT was performed, and no systemic disease was found (Figure 4).

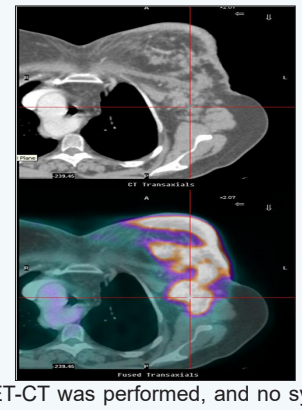

Figure 4: A PET-CT was performed, and no systemic disease was found:

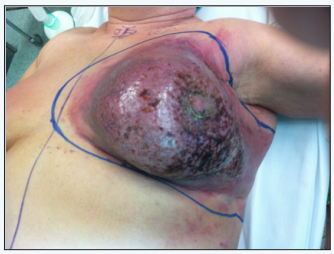

Figure 5: Wide Radical mastectomy on a inflammatory BC.

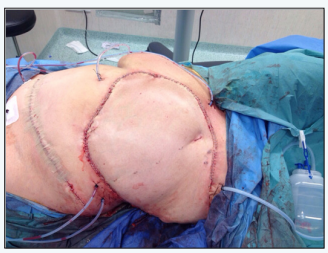

Figure 6: DIEP flap reconstruction procedure was performed to cover the hole left.

The patient began with deep pain. In the setting of anantracyclin and taxane refractory inflammatory triple negative breast cancer, after its discussion in our multidisciplinary team, we decided to perform a radical mastectomy, that underwent on November 24th, 2014 (Figure 5,6).

In the recovery time, only 5 weeks after surgery, a relapsed was seen:

The pathology report showed wide skin, muscle and lymph node infiltration with a numerous images of vascular and perineural invasion close to the borders (Figure 7).

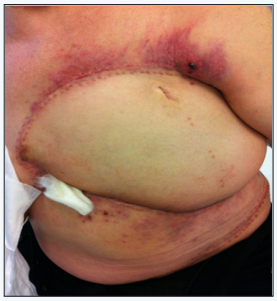

Figure 7: Early relapse only 5 weeks after a radical surgery.

First line Capecitabine (1250 mg/m2 Days 1-14 every 3 weeks) and Bevacizumab (15mg/kg every 3 weeks) was started in January 2015, with progressive disease in the axila, skin and lung after 3 cycles in March 2nd, 2015 (Figure 8,9).

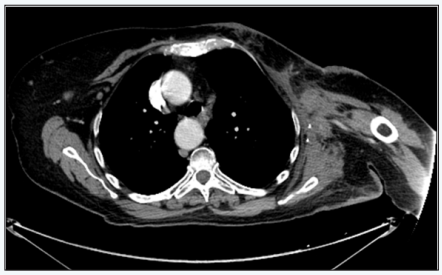

Figure 8: CT-scan on January 5th, 2015 showed disease relapse in the skin and axilla.

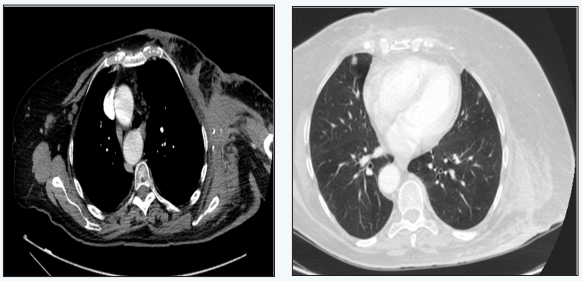

Figure 9: CT scan showed progressive disease in the axila, skin and lung.

A second line chemotherapy with Eribulin was initiated (1.4mg/m2 days 1,8 every 3 weeks). No adjusted dose was required. Morphine was needed to control pain. After 3 cycles, a partial response was observed on May 5th, 2015 and local symptoms improved (Figure 10).

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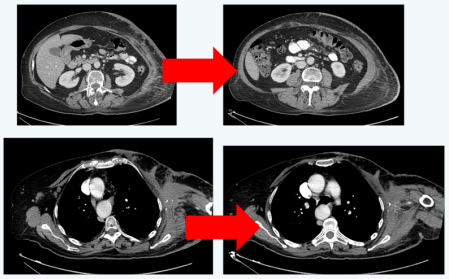

Figure 10: Partial response after 3 cycles of eribulin.

Unfortunately, after 6 cycles the disease progressed. Other options of systemic treatment were offered, and a third line with Vinorelbine was started. However, the patients required high doses of morphine to palliate the pain and died on August 3rd, 2015

Discussion

This is the case of a patient with a T1N1 triple negative cancer that progress to an inflammatory breast cancer in the adjuvant setting with antracyclines and taxanes. After a great effort with a surgical rescue, she became metastatic and progressed to the first line with Capecitabine and Bevacizumab. Response to Eribulin after failure of previous lines of chemotherapy was seen.

Conclusion

Eribulinmesylate (eribulin) is a novel microtubule targeting agent (MTA) that is used in the treatment of metastatic breast cancer [2]. It has been described new in vitro and in vivo studies triggered by unexpected clinical findings that establish a distinct biological profile of eribulin's effects in both tumor tissue, supporting stroma and angiogenesis [5-7] which may explain its particular activity en TNBC.

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