

Complete response after “neoadjuvant” pertuzumab + trastuzumab + docetaxel chemotherapy in Her2-positive breast cancer

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Summary

It is well demonstrated that Her-2 positive breast cancer patients have more aggressive disease, with a poor prognosis. The author report the case of a 50-year-old Caucasian woman, diagnosed with a seven-centimeter right breast cancer. Biospy core revealed a Her-2 positive, positive for hormonal receptors, ki67 at 70%, breast invasive ductal carcinoma, associated with right axillary adenomegalies. Positron emission tomography scan showed diffuse metastatic adenomegalies upper and under the diaphragm and a 55×55 mm lesion in the right breast. The patient began chemotherapy with docetaxel+pertuzumab+trastuzumab regimen. After three courses, all the positron emission tomography scans did not show any pathological hypermetabolism and the primitive lesion was measured at 16×18 mm. It was decided to perform a right mastectomy. The patient will then follow maintenance with pertuzumab and trastuzumab, in combination with hormonotherapy.

Key words: Her2 breast cancer; Pertuzumab; Metastatic breast cancer; Her2-targeted therapies.

Introduction

Breast cancer is the leading cause of cancer-related death among women worldwide [1]. About 20 percent of breast cancer overexpress human epidermal growth factor receptor 2 (Her2), that historically was associated to worse prognosis. Her2 targeted therapies are important because they have altered the natural evolution of Her2-positive breast cancer[2].

Pertuzumab is a monoclonal antibody that binds the extracellular dimerization domain of Her2 and prevents it from binding to itself or to other members of the epidermal growth factor receptor (EGFR) family. Pertuzumab is administered in combination with trastuzumab and a taxane in previously untreated patients. This regimen has proved clinical benefits.

The author reports the case of a complete response in a metastatic Her2 breast cancer patient treated with pertuzumab+trastuzumab+docetaxel.

Case Report

The author reports the case of a 50-year-old Caucasian woman, gravida 3, para 3, without any medical past, that was referred to the gynecologist for the detection of a right breast seven-centimeter painful lump, projecting towards right axilla. Mammogram was considered abnormal.

Right breast microbiopsy revealed an invasive ductal carcinoma, SBR3, with tumoral necrosis, positive for estrogen receptors and negative for progesterone receptors, and high Ki67 level (70%). The tumor overexpressed Her2.

Breast magnetic resonance imaging showed a 55×55mm breast tumor associated with multiple right axillary adenomegalies. Microbiopsy of axillary nodes was positive for invasive ductal breast carcinoma, SBR3, negative for estrogen and progesterone receptors, and positive for Her2 receptors. Ki67 was at 90%.

Positron emission tomography scan revealed disseminated disease with multiple axillary, retropectoral, right supraclavicular, abdominal (perihepatic and peripancreatic), and precaval lumbar lymph nodes.

The patient began chemotherapy with docetaxel+pertuzumab+trastuzumab regimen. She suffered from grade II mucositis and dysgeusia but neither had febrile neutropenia nor diarrhea. After three courses of chemotherapy, positron emission tomography scan showed extinction of all hypermetabolic nodes. The primary breast tumor size reduced to 16×18 mm, testifying of a good response to chemotherapy. After six cycles of chemotherapy, it was decided to perform a right mastectomy. The patient will after surgery continue with pertuzumab+trastuzumab, and endocrine therapy will be added.

Discussion

Her2-positive breast cancers tend to be more aggressive than other types of breast cancers. They are less likely to be sensitive to hormone therapy.

Treatments that specifically target Her2 are very effective. First-line therapy with pertuzumab, trastuzumab, and docetaxel significantly improved overall survival among patients with Her2-positive metastatic breast cancer, compared with placebo, trastuzumab and docetaxel.

Complete response can be observed as in the present patient. It concerns 5% to 10% of patients that will have a

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complete radiologic response to the three-agent combination [3].

Traditionally, surgery is not routinely recommended for patients presenting with Stage IV disease and intact primary tumor. However Rapiti *et al.* observed, in a retrospective study that women having surgery of the primary tumor had a 50 percent reduction in breast cancer mortality, compared with women who did not undergo surgery. Significant survival benefit for axillary surgery was not observed [4]. These results are similar to those reported by Khan *et al.* in a retrospective study of 16,023 patients (39% reduction in the risk of death) [5].

After achievement of the best response to treatment, cytotoxic chemotherapy will be discontinued and trastuzumab and pertuzumab will be continued. The optimal duration of trastuzumab and pertuzumab is also unknown.

Endocrine therapy to Her2-targeted therapy, following discontinuation of chemotherapy will be added, in case of a hormone-receptor-positive tumor.

Conclusions

Although metastatic breast cancer is unlikely to be cured, meaningful improvements in survival have been achieved with the introduction of newer systemic therapies. Complete responses have been observed with such therapies.

However at the current time, there are no other validated predictive markers for specific targeted therapies.

References

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