

Complete response after pertuzumab + trastuzumab + docetaxel in metastatic Her2-positive breast cancer patients: review of four cases

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Summary

Her2-positive breast cancers represent about 20 percent of breast cancer patients. Her2-positive breast cancers have more aggressive and poorer prognosis. However, with the emergence of new therapies, outcomes have changed with improvement in survival. Pertuzumab is a new drug, a monoclonal antibody against Her2, available for use in the treatment of Her2-positive breast cancer.

Key words: Pertuzumab; Her2-positive breast cancer; Metastases; Complete response.

Introduction

Fifteen to 20 percent of breast cancer display Her2 amplification. Many therapeutic successes have been obtained since trastuzumab approval.

Pertuzumab is a new anti-Her2 antibody used in combination with trastuzumab and docetaxel for first-line treatment of metastatic or locally advanced non-resectable Her2-positive breast cancer not previously treated with trastuzumab.

Some cases of complete response with pertuzumab in association with trastuzumab and docetaxel have been described. The author reports herein four cases of complete response with the treatment.

Case Reports

Case 1

The first case is a 57-year-old Caucasian patient, diagnosed with a three-centimeter, SBR2 lobular left breast carcinoma, positive for estrogen receptors (100%), negative for progesterone receptors, overexpressing Her2, with a Ki67 at 30%, 13 metastatic nodes out of 16, a pT2N3a tumor. Positron emission tomography scan did not show any metastasis. The patient received adjuvant treatment: adjuvant sequential chemotherapy with three cycles of 5 fluorouracil-epirubicin-cyclophosphamide (FEC), then three cycles of docetaxel + trastuzumab, followed by radiotherapy and then by trastuzumab in combination with endocrine therapy. Nine months after the beginning of endocrine therapy, the Ca15-3 level was high at 44.9 U/ml (normal range < 25 U/ml). Positron emission tomography scan showed metastatic bone lesions on sacrum and pelvis. The lesions were painless. The patient was treated with docetaxel-pertuzumab-trastuzumab regimen. After three courses, the patient was in complete metabolic response. She completed six cycles, followed by trastuzumab + pertuzumab. Endocrine therapy was added at that time.

Case 2

The second case is a 49-year-old Caucasian woman, diagnosed with multifocal invasive ductal carcinomas in the right breast. The carcinomas were SBR2, positive for estrogen receptors (60%), and negative for progesterone receptors (2%). Her2 was overexpressed and Ki67 between 8 and 10%. Positron emission tomography scan showed metastatic bone lesions on the sacrum. The patient firstly wanted surgery (right mastectomy). She then received radiofrequency on bone lesions. She began first-line chemotherapy with docetaxel-pertuzumab-trastuzumab. After three courses, complete response was obtained. The patient will complete six cycles, then pertuzumab + trastuzumab + endocrine therapy. External breast radiotherapy will be discussed.

Case 3

The third case is a 71-year-old Caucasian patient, who was diagnosed with an invasive lobular right breast carcinoma. She underwent conservative breast surgery. Histologically it was a 3.5-centimeter invasive lobular, SBR2 carcinoma, positive for estrogen receptors (100%), but negative for progesterone receptors (5%), with Her2 overexpression and a Ki67 at 20%, a pT2N2a stage. Positron emission tomography scan showed a multi-metastatic diffuse disease: bones, under and above the diaphragm, liver, right adrenal gland, and left pleural metastasis. The patient underwent chemotherapy with docetaxel-pertuzumab-trastuzumab regimen. After three cycles, complete metabolic response was achieved. The patient completed six cycles of chemotherapy, followed by pertuzumab and trastuzumab maintenance. Ten months after diagnosis, bone and liver metastasis reappeared. Second-line chemotherapy trastuzumab emtansine (TDM1) will be administered.

Case 4

The fourth case is a 50-year-old Caucasian woman, diagnosed with an invasive ductal right breast carcinoma, SBR3, positive for estrogen receptors (40%), negative for progesterone receptors, Ki67 at 70%, overexpressing Her2. Biopsy of right axillary nodes revealed a SBR3, invasive ductal carcinoma, negative for hor-

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monal receptors, Her2 positive, and Ki67 at 90%. Positron emission tomography showed multiple under and above diaphragm metastatic nodes. She began chemotherapy with docetaxel-pertuzumab-trastuzumab. After three cycles, complete response was obtained. The patient completed a total of six courses. Right mastectomy will be performed and the patient will continue pertuzumab+ trastuzumab with endocrine therapy.

Discussion

Pertuzumab has demonstrated efficacy in metastatic breast cancer in combination with docetaxel and trastuzumab. It received approval after the phase III, CLEOPATRA trial that demonstrated significantly improvement in progression-free and overall survival [1, 2]. Overall response rate was 80% vs. 69% in placebo group; progression-free survival was 19 vs. 12 months and overall survival was 56.5 vs. 40.8 months.

For patients receiving this regimen as their first-line treatment, 5% to 10% of patients will have a complete radiologic response to this three-agent combination [3]. After achievement of the best response to treatment, cytotoxic chemotherapy is discontinued and trastuzumab is continued with pertuzumab until progression or toxicity.

In the present review all four patients experienced complete metabolic response. The chemotherapy was well tolerated without any grade 3 or more adverse-effects. No cardiac adverse events were reported. Treatment is effective even in elderly patients and in polymetastatic and visceral metastatic disease. In case of complete response, surgery of the primary tumor is systematically discussed, in order to improve local control. However no conclusion can be made regarding this review.

Conclusions

Pertuzumab and trastuzumab plus chemotherapy significantly improved the rate of complete tumor disappearance in studies. The author reported four cases that confirm the efficacy of the combination.

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