

Breast cancer in young women: case report and a review

M. BATORI, M. RUGGIERI, E. CHATELOU, A. STRANIERO, G. MARIOTTA, L. PALOMBI, G. CASELLA, M. BASILE, M.C. CASELLA

Department of Surgical Sciences and Applied Medical Technologies, "La Sapienza" University – Rome (Italy)

Abstract. – **Background:** Breast cancer in patients under 40 years is uncommon. Surveillance, Epidemiology and End Results (SEER) program reveals that 75% of breast tumors occur in women age > 50 years, only 6.5% in women age < 40 years, and a mere 0.6% in women age < 30 years. Breast-conserving surgery with subsequent chemo-radiotherapy has become the treatment of choice in women with breast neoplasm.

Case Report: two young patients, 30 and 28 years respectively, with breast cancer. One patient with an atypical medullary breast carcinoma diagnosis, pT2 pN1 bipMx, Grade 3 Stage IIB, negative for receptors, Ki 67: 47%, cERB-2 negative; the other with an intraductal breast carcinoma, pT1c pN0 pMx, Grade 2 Stage I, negative for receptors, Ki 67: 85%, cERB-2 negative, p53 negative, Bcl-2 negative. The first patient underwent right radical mastectomy sec. Madden and axillary lymphadenectomy in October 2001, started six cycles of adjuvant chemotherapy and radiotherapy on the right side of the chest and on axillary and supraclavicular lymph nodes area. After 2 years an ecotomography revealed small hypoechoic nodules in the left breast. In December the patient underwent left radical mastectomy with positioning of an expander device. The histological exam revealed a not much differentiated intraductal carcinoma, pT1a N0 Mx, Stage I. After the surgical therapy, she follows another adjuvant chemotherapy. The second patient underwent left quadrantectomy with axillary lymphadenectomy in November 2004. Like the first will follow several cycles of adjuvant chemotherapy and radiotherapy.

Discussion: Breast cancer in women under 40 years of age differ from breast cancer in older women in numerous clinical, pathological and biological features. The studies demonstrate that breast cancer arising in women under 40 years have a more aggressive profile than those of older patients. In both our patients family history of breast cancer was reported. That suggests a possible genetic susceptibility of these patients through BRCA1 and BRCA2 germ-line mutations.

Breast conservative surgery with chemo-radiotherapy is the most commonly used treatment breast cancer, especially in consideration of the aggressiveness of the lesions.

Key Words:

Breast cancer, Young women, Breast neoplasm, Breast carcinoma.

Background

Breast cancer in patients under 40 years is uncommon: the data from Surveillance, Epidemiology, and End Results (SEER) program reveals that 75% of breast tumors occur in women age > 50 years, only 6.5% in women age < 40 years, and a mere 0.6% in women age < 30 years^{1,2}. The survival of the young patients with breast carcinoma is worse than the survival of the older women with the same neoplasm: in multivariate analysis survival at 20 years is about 30% for patients < 25 years old and over 50% for patients over 25³. This program also reveals that the incidence rate for African-American women under age 35 is more than twice the rate for white women of similar age, and the mortality rate is more than three times higher⁴.

Breast-conserving surgery with subsequent chemo-radiotherapy has become the treatment of choice in women with breast neoplasm. It was found to be comparable to mastectomy for distant disease-free and overall survival. However, following breast-conserving surgery and chemo-radiotherapy, recurrence in the preserved ipsilateral breast occur at an average rate of 1-2% per year, accumulating to approximately 15% after ten years⁵.

Case report

Patient 1

Patient, 30 years old, with an atypical medullary breast carcinoma diagnosis, pT2 pN1 bipMx, Grade 3 Stage IIB, negative for receptors, Ki 67: 47%, cERB-2 negative, underwent right radical mastectomy sec. Madden and axillary lymphadenectomy in October 2001.

In November 2001 started six cycles of adjuvant chemotherapy with FAC scheme.

In April 2002 started radiotherapy on the right side of the chest and on axillary and supraclavicular lymph nodes area.

In January 2003 the expander device has been positioned in the right breast. This device has been substituted in May with a breast prosthesis and, at the same time, the patient underwent a left reductive mastoplastic.

In November 2003 an ecotomography revealed small hypoechogenic nodule in the left breast. In December the patient underwent left radical mastectomy and positioning of an expander device. The histological exam revealed a not much differentiated intraductal carcinoma, pT1a N0 Mx, Stage I.

From January to March 2004 the patient underwent three cycles of chemotherapy with Myocet-Taxolo.

At this moment (December 2004), the patient is in our department for substitution of the expander device with a prosthesis for the left breast.

Patient 2

Patient, 28 years old, with an intraductal breast carcinoma, pT1c pN0 pMx, Grade 2 Stage I, negative for receptors, Ki 67: 85%, cERB-2 negative, p53 negative, Bcl-2 negative.

In August 2004 an ecotomography revealed, in left breast, a cystic image of 11.1 mm with structural disoemogenity and irregular edges suggests of cystic formation in flogistic state.

In October 2004 a second ecotomography revealed disoemogenal ipoechogenic nodule of 14.5 × 10.6 mm in left breast. Eco-color Doppler exam revealed an intra-lesional vascular pedicle, suggests of fibro-adenoma.

In October 2004, the patient also underwent fine needle aspiration for cytologic exam that revealed ductal cells with overlap of nucleuses, hyperchromasia, anisonucleosis and evident nucleoluses.

In November 2004 the patient underwent left quadrantectomy with axillary limphoadenectomy.

In December 2004 she started four cycles of adjuvant chemotherapy with AC scheme.

Discussion

Breast cancer in women under 40 years of age differs from breast cancer in older women in numerous clinical, pathological and biologi-

cal features. Clinically, the younger age women had higher incidence of such risk factors as a family history of breast cancer, earlier menarche, more frequent nulliparity and hormonal exposure in the form of oral contraceptive⁶.

The studies demonstrate that breast cancer arising in women under 40 years has a more aggressive profile than those of older patients. From the pathological point of view, in this two cases we found two intraductal and one medullary carcinomas. We found an high incidence of poorly differentiated tumors: in the first patient the medullary carcinoma was atypical of grade 3. The second carcinoma founded in the same patient was a not much differentiated intraductal carcinoma. The second patient had an intraductal breast carcinoma of grade 2.

Biological evaluation revealed negativity for cERB-2, p53 and Bcl-2, but an high proliferation value (Ki 67: 47 and 85%), higher in the younger patient in consideration of the aggressiveness of this kind of lesions.

Both patients have family history of breast cancer. For example the second patient reports breast cancer in her mother, aunt and grandmother. That suggests a possible genetic susceptibility of these patients through BRCA1 and BRCA2 germ-line mutations.

Breast conservative surgery with radiotherapy is the most commonly used treatment for early-stage breast cancer.

References

- 1) SIDONI A, CAVALIERE A, BELLEZZA G, SCHEIBEL M, BUCIARELLI E. Breast cancer in young women: clinico-pathological features and biological specificity. *Breast* 2001; 12: 249-250.
- 2) ZHOU P, RECHT A. Young age and outcome for women with early-stage invasive breast carcinoma. *Cancer* 2004; 101: 1264-1274.
- 3) KOTHARI AS, NEWMAN NB, D'ARRIGO C, et al. Breast carcinoma in women age 25 years or less. *Cancer* 2002; 94, 606-614.
- 4) SHAVERS VL, HARLAN LC, STEVENS JL. Racial/ethnic variation in clinical presentation, treatment, and survival among breast cancer patients under age 25. *Cancer* 2003; 97: 134-147.
- 5) SEYNAEVE C, VERHOOG LC, VAN DE BOSCH LMC, et al. Ipsilateral breast tumour recurrence in hereditary breast cancer following breast-conserving therapy. *Eur J Cancer* 2004; 40: 1150-1158.
- 6) MAHUE-GIANGRECO M, URSIN G, SULLIVAN-HALLEY J, BERNSTEIN L. Induced abortion, miscarriage, and breast cancer risk of young women. *Cancer Epidemiol, Biomarkers Prevent* 2003; 12: 209-214.