

Younger Patients, None-early Diagnostic Stage of Breast Cancer, and Low Breast Conservation Surgery, a Message in the Review of 102 Cases from South Iran

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Abstract

Background: Breast cancer is an important cause of cancer death among women all over the world. Even in places with low incidence there are reports of an increase in the number of breast cancer patients. The aim of the present study was to report the demographic aspects of breast cancer among patients referred by surgeons for adjuvant therapy in a private cancer clinic during the past five years in Fars province, Iran.

Materials and methods: One hundred and two patients were reviewed. The age of the patients and pathologic data including size, site, histopathology of tumor, axillary lymph node involvement, Estrogen receptor and HER2/neu (human epidermal growth factor type2) receptor status were collected.

Results: Thirty percent of cases were 40-49 years old which was the most common age group, and the average age was 46 years. Most of the patients had grade II and grade III histopathology, 59 and 36 percent respectively. Modified radical mastectomy was performed in 85% of cases and in 15% of cases a breast conservation surgery was performed.

Conclusion: The average age for breast cancer was low, the detection was delayed and the rate of breast conserving surgery was very low among our patients. This indicates a need for more studies to rule out any genetic or acquired factors contributing to this earlier appearance of disease among our population.

Keywords: Breast cancer, age, surgery, Iran

Introduction

Breast cancer is an important cause of cancer death among women all over the world. Even in places with low incidence there are reports of an increase in the number of breast cancer patients^{1,2}. Established risk factors are estrogen level; early menarche, late menopause, and obesity in postmenopausal women, as well as high concentrations of endogenous estradiol. Childbearing and breastfeeding probably have a protective effect against breast cancer. Alcohol, oral contraceptives and hormonal therapy for menopause also cause an increase of breast-cancer risk, but physical activity is probably protective. Mutations in certain genes can increase the risk of breast-cancer, but this is the case for a minority of patients^{3,4}. Higher incidence of breast cancer has great psychological and economic impact on society. Having new information considering the

disease can help future programs aimed to control it. Progress in molecular biology has changed the picture of breast cancer and probably in the next decades we will face extraordinary improvements in diagnosis and treatment of this fatal disease⁵. The epidemiologic evaluations can help to control this devastating disease by finding specific causes and the related biologic data.

Materials and methods

One hundred and two patients were reviewed during the past five years from Fars province, Iran. All patients were referred by surgeons for adjuvant therapy of cancer in a private cancer clinic. The age of the patients and pathologic data including size, site, histopathology of tumor, axillary lymph node involvement, Estrogen receptor and HER2/

neu (human epidermal growth factor type2) receptor status were collected.

Results

Thirty percent of cases were 40-49 years old which was the most common age group, and the average age was 46 years. Sixty cases had breast cancer in the right and forty-two cases in the left breast. Sixty tumor lesions were in the upper outer quadrant, 15% in the central part, ten percent in the lower outer quadrant, 9 cases in the inner upper quadrant and five cases in the inner lower quadrant.

Invasive ductal carcinoma was found in 91% of cases, lobular carcinoma in 7% and modularly and other forms in 2 % of cases. Considering the stage of diagnosis, 12% of patients were in stage I, 32% in stage II, 40% in stage III and 16% in stage IV of breast cancer (Figure1) when diagnosed. The axillary lymph nodes involvement was seen in 67% of patients and 27% had more than 10 positive lymph nodes. The mean size for the axillary lymph nodes was 2cm. In 92 % of cases the surgical margin was free.

Modified radical mastectomy was performed in 85% of cases and in 15% of cases a breast conservation surgery was carried on (Figure 2).

In 64% of cases tumor size was between 2-5cm, in 18% greater than 5 cm and in 18% less than 2cm. The average size was 3.6 cm. Most of the patients had grade II and grade III histopathology, 59 and 36 percent respectively. Sixty one percent of patients had tumors of nuclear grade 2 and perineural

invasion was observed in 60%, vascular invasion in 40%, and tumor necrosis in 60% of cases. Comedo histopathology was observed in 15% of cases, and multicentricity in 14 cases. Microcalcification was present in 39% of cases. Involvement of perinodal fat and skin was seen in 51% and 7% of patients respectively, and nipple involvement was observed in 9 cases. Sixty one percent of patients had positive ER status and 70% of them were progesterone positive. HER2/neu over expression was seen in 58% of cases and 40% of tumors had mutation in p53 tumor suppressor gene.

Discussion

Breast cancer accounts for 17% of female cancer in Iran (6). With the incidence being 22/100000 in 2007, 57% of cases being in stage III and sixty three percent being lymph node positive ^{6,7}.

Based on current data ^{8,9,10} the average age for breast cancer is above 50 years which is higher than our findings (average age was 46 years). In a review of 903 Iranian patients during 1985-1995 timeframe, the 40-49 age range was the most common age range and 70% of patients were in advanced stages of disease ⁶. In contrast Surveillance, Epidemiology and End Results (SEER) program indicates that 75% of breast tumors occur in women age > 50 years, and only 6.5% in women age < 40 years, and a mere 0.6% in women age < 30 years in USA ⁹.

This indicates a need for more studies to rule out any genetic or acquired factors contributing to this earlier appearance of disease among our population.

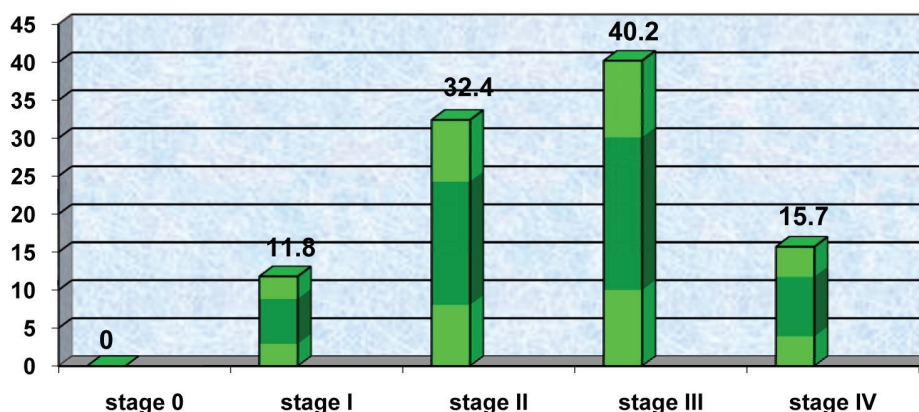


Figure 1: The stage of breast cancer among our patients.

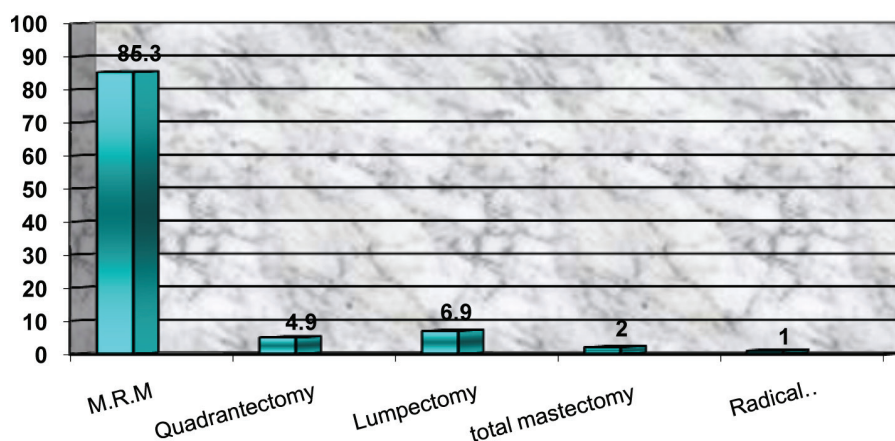


Figure 2: Different methods of treatment used to treat our patients.

Our data also showed that the detection of breast cancer is delayed among our cases.

Breast-conserving surgery with subsequent chemo-radiotherapy has become the treatment of choice among women with breast neoplasm¹¹. The rate of breast conserving surgery (6.9%) was also very low among our patients as compared with other centers, which have reported around 80% conserving surgery². This indicates the need for modifying the surgical aspect of breast cancer treatment in our population to decrease the psychological stress of mastectomy. In Europe breast cancer cases are detected early, so many of the women could have breast conserving surgery (BCT). For example in Poland the number of tumors detected with diameters ≤ 5 cm increased from 57% in 1984 to 81% in 2003. On the contrary, in Africa, only 52% of the patients have tumor size below 6 cm¹². As a result, most women in Africa have mastectomy and adjuvant hormonal therapy or chemotherapy and many others only receive palliative.

Although our sample size was not optimum but we decided to report our findings because of the impact it might have on our epidemiological understanding of disease in our population.

Conclusion:

The average age for breast cancer was low, the detection was delayed and the rate of breast conserving surgery was very low among our patients. This indicates a need for more studies to rule out any genetic or acquired factors contributing to this earlier appearance of disease among our population.

References

- DeVita VT, Lawrence LS, Rosenberg SA, DePinho RA, R Weinberg RA, DeVita, Hellman, and Rosenberg's Cancer: Principles & Practice of Oncology, 2008, volume1, 8th edition, page 1609
- Key TJ, Verkasalo PK, Banks E. Epidemiology of breast cancer. *Lancet Oncol.* 2001 Mar;2(3):133-40.
- Ewertz M, Duffy SW, Adami HO, Kvåle G, Lund E, Meirik O, Møller M, Soini I, Tulinius H. Age at first birth, parity and risk of breast cancer: a meta-analysis of 8 studies from the Nordic countries. *Int J Cancer.* 1990;46(4):597-603.
- Batori M, Ruggieri M, Chatelou E, Straniero A, Mariotta G, Palombi L, Casella G, Basile M, Casella MC. Breast cancer in young women: case report and a review. *Eur Rev Med Pharmacol Sci.* 2006;10(2):51-2.
- Transduction mechanisms in cellular signalling, Dennis EA, Bradshaw RA, Elsevier Science & Technology Books, 2011, page 45-54
- Harirchi I, Ebrahimi M, Zamani N, Jarvandi S, Montazeri A. Breast cancer in Iran: a review of 903 case records. *Public Health.* 2000 Mar;114(2):143-5.
- Mousavi SM, Montazeri A, Mohagheghi MA, Jarrahi AM, Harirchi I, Najafi M, Ebrahimi M. Breast cancer in Iran: an epidemiological review. *Breast J.* 2007 Jul;13(4):383-91.
- Edge SB, Byrd DR, Compton CC, Fritz AG, Greene FG, Trotti A, eds. *AJCC Cancer Staging Manual.* 7th ed. New York: Springer; 2010.
- Howlander N, Noone AM, Krapcho M, Neyman N, Aminou R, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA (eds). *SEER Cancer Statistics Review, 1975-2009* (Vintage 2009 Populations),

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National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2009_pops09/, based on November 2011 SEER data submission, posted to the SEER web site, April 2012

10. Lacey JV Jr, Kreimer AR, Buys SS, Marcus PM, Chang SC, Leitzmann MF, Hoover RN, Prorok PC, Berg CD, Hartge P; Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial Project Team. Breast cancer epidemiology according to recognized breast cancer risk factors in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial Cohort. *BMC Cancer*. 2009 17;9:84.
11. Sadjadi A, Nouraie M, Mohagheghi MA, Mousavi-Jarrahi A, Malekezadeh R, Parkin DM. Cancer occurrence in Iran in 2002, an international perspective. *Asian Pac J Cancer Prev*. 2005;6(3):359-63.
12. Abdulrahman GO Jnr, Rahman GA. Epidemiology of Breast Cancer in Europe and Africa. *J Cancer Epidemiol*. 2012;2012:915610. Epub 2012 May 27.