Molecular Profile of Breast Cancer in Young Women in the Marrakech Region, Morocco: Experience of the Oncology Department CHU Mohamed VI Marrakech, Morocco

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ABSTRACT

Breast cancer in young women is increasing. The objective of this work was to analyze the epidemiological, clinical, therapeutic and prognostic characteristics of breast cancer in young women under 40 years. Through a retrospective study spread over five years from 1 January 2008 to 31 December 2012 and held at the Radiation Oncology Service of the University Hospital Mohammed VI Marrakech, we identified 272 cases of breast cancer in patients aged 40 years and under. The frequency of breast cancer in young women under 40 years was 24.42%. The average age was 35.6 years. The pauciparity and nulliparity were predominant (60.6%). 8% had a family history of breast cancer. The self-examination of a nodule was predominant (93%). Tumors classified T2 were the most frequent (45%), followed by T4 tumors (29%). 17% were metastatic immediately with predominant hepatic localizations (37.6%). It was Invasive breast carcinoma no special type (NST) in 82.3% of cases, with a predominance of SBR grades II and III (96%). Hormone receptors were positive in 68% of cases and HER2 overexpressed in 29% of cases. 218 patients underwent surgery, which was radical in 68% and conservative in 21%. 149 had a locoregional irradiation. 71% received adjuvant chemotherapy with a predominance of FAC60 protocol (35%). Hormonotherapy was prescribed in 78% of cases with positive hormone receptors and trastuzumab in 73.8% of patients over expressing HER2. After a median follow-up of 8.1 months, 41.4% had relapses. Overall survival at three years was 70%, and the relapse free survival was 62%. Our study joins the data in the literature advocating more advanced forms and worse prognosis of breast cancer in young patients.

Keywords: Breast Cancer, Young Woman, Clinical, Treatment, Prognostic factors

1. INTRODUCTION

Breast cancer is the most common cancer in women worldwide. It affects women aged between 50 and 70 years, and its incidence is increasing for young women also. In the literature, breast cancer in young women has particular epidemiological aspects. It is often linked to more advanced forms and a poor prognosis. The objective of this study

is to analyze the different epidemiological, clinical, therapeutic and prognostic characteristics of breast cancer in young women aged 40 years and under through a retrospective study of 272 cases.

2. METHODS

A retrospective study of a series of 272 cases of breast cancer in women aged less than 40 years, collected in the oncology-radiotherapy department of the Mohammed VI University Hospital Center in Marrakech and spread over a period of 5 years from 1 January 2008 to 31 December 2012. All the data were reported on the exploitation sheets and analyzed by the Excel software.

3. RESULTS

During the study period, 1114 cases of breast cancer were admitted to the service. 272 were 40 years of age or younger at the time of diagnosis, representing a frequency of 24.42% of cases. The average age was 35.6 years (21-40 years), and the most represented were 36-40 years (59% of cases). Epidemiologically, the menarche was precocious before 12 years in 11% of cases, and six patients were menopause at the time of diagnosis. A predominance of pauci-parity and nulliparity was noted with respective rates of 31.6% and 29%. The median age of first pregnancy was 22.6 years (16-36 years). Overweight and obesity were common with rates of 38% and 19% respectively, while 22 patients (8%) had a family history of breast cancer. Clinically, the mean follow-up time was 8.16 months (10 days to 8 years), and nodule auto-palpation was the most frequent mode of discovery (93% of cases). The mean clinical size of the tumors was 4.9 cm (1 to 30 cm). T2 tumors were the most frequent (45%), followed by T4 (29%). Inflammatory signs were found in 25% of the patients. 168 patients underwent mammography. It revealed a stellar opacity in 82% of cases. While a mammary ultrasound was performed in 106 patients and showed breast mass suspicious for malignancy in 84% of the cases. At the end assessment of tumor extension, 17% of our patients were metastatic at the outset with a predominance of Liver sites (37.6%). Therapeutically, 218 patients underwent surgery. It was radical in 78% of the cases, conservative in 21% of the cases and consisted of a mastectomy of cleanliness in 3 patients (1%). This surgery was preceded by neoadjuvant chemotherapy in 14.2% of cases. In the pathological study, the invasive breast carcinoma no special type was by far the most frequent with a rate of 82.3%. SBR II and III were predominant at 69% and 27%, respectively. 66% of patients had associated lymph node involvement in 45% of cases with capsular effraction. Hormone receptors were positive in 68% of cases, and HER2 was overexpressed in 29% of cases. “Triple negative” tumors were estimated at 21%. Radiotherapy was delivered in 68.3% of patients. 41.6% received it according to the classic scheme of 50 Gray and 58.4% according to hypofractioned schemes. Adjuvant chemotherapy was administered in 71% of patients with the predominantly FAC60 protocol (35%). Hormone therapy was prescribed in 125 patients, 78% of cases with hormone receptor expression, while 48 patients were treated with trastuzumab-based therapy, in 73.8% of cases overexpressing HER2. The median survival was 8.1 months (1 month-7 years three months). 10.8% of the patients had local relapses, while 36.2% had metastatic relapses. Overall survival at three years was 70%, and survival without relapses was 62%.

4. DISCUSSION

The definition of young age in women with breast cancer is not univocal. Different studies have defined a "young" woman as corresponding to a woman under 30, 35, 40, 45 or simply not postmenopausal. In our study, we chose an age limit of 40 years. The incidence of breast cancer in young women varies between 1.3 and 25% (1,2,3). In our series, this frequency was 24.42%, thus exceeding the frequency of the Occidental studies and concordant with the Maghreb studies. The average age of onset of breast cancer in the literature is often after 30 years (1,5,6), which is consistent with our study with an average of 35.6 years. Several risk factors other than age are commonly associated with breast cancer in young women, including early menarche, nulliparity, first late pregnancy, and a family history of breast cancer. Indeed women with breast cancer report a family history in 20 to 30% of cases (7). This is due to an increased risk of mutations in the BRCA 1 and 2 genes. In our study, this rate was only 8%. Clinically, breast tumors in young women are characterized by delayed consultation and a frequency of high tumor sizes. This is confirmed in our study, where the tumors classified as T2 and T4 were predominant with respective rates of 45% and 29%, consistent with the results of other studies (1,6). Immediate metastatic forms are seen in 2.4 to 30% of cases (8). In our study, this rate was 17%. The breast cancer of the young woman has features that require maximum optimization of the...
diagnostic means. Conventional imaging is often faulted because of the mammary density at this age providing false negatives. Thus, to increase the sensitivity of mammography, the authors recommend coupling to a mammary echography. In our study, mammography revealed stellar opacity in 82% of cases and mammary ultrasound showed breast mass suspicious for malignancy in 84% of cases. In the pathological study, invasive breast carcinoma no special type is the most frequent histological type. It is all the more aggressive because it is associated with an SBR III grade, lymph node invasion, negative hormone receptors and overexpression of HER2. In our series, invasive breast carcinoma no special type was by far the most frequent (82.3%). Grades SBR II and III were predominant with respective rates of 69% and 27%. 66% of patients had lymph node involvement with positive hormone receptors in 68% of cases, and HER2 was overexpressed in 29% of cases. Grades SBR II and III were predominant with respective rates of 69% and 27%. 66% of patients had lymph node involvement with positive hormone receptors in 68% of cases, and HER2 was overexpressed in 29% of cases. Therapeutically, the risk of local relapse is 2 to 4 times higher in young women after conservative surgery, what calls into question the usefulness of conservative treatment in this population. In our study, 21% of patients had conservative surgery with a lower rate of local recurrence than patients treated with radical surgery. Several studies have shown that breast irradiation after surgery significantly reduces the risk of recurrence and increases survival while maintaining the same indications and benefits in younger than older women. An overprint of the tumor bed (Boost) indicated in cases with a high risk of local recurrence at 10 to 16 Gy also reduces the rate of local recurrences by approximately 10% according to Bartelink et al. In our case, 68.3% of patients received radiation therapy while a tumor boost was administered to 65.2% of women who underwent conservative surgery. Regarding chemotherapy, a certain benefit has been reported in postmenopausal women, whether or not there is an axillary lymph node involvement. Furthermore, it has been shown that a sequential scheme based on anthracyclines and taxanes is superior to the concomitant scheme as well as the taxane-free scheme. In our study, 71% received adjuvant chemotherapy with predominantly of protocol FAC 60 (35%). The reference hormone therapy in young women remains tamoxifen. A drug prescribed for over 25 years, it is probably the most tolerated therapeutic of adjuvant therapies of breast cancers. In our study, hormone therapy was prescribed in 78% of cases with positive hormone receptors. Concerning trastuzumab, studies have shown a major benefit of its adjuvant use for one year in terms of relapse-free survival and overall survival. It is also indicated in neo-adjuvant as well as in metastatic breast cancer. In our case, it was received by 73.8% of cases overexpressing the HER2. Local recurrences and metastases occur more frequently in young women than in older women. In our study, loco regional relapses were 10.8%, reaching most of the Maghreb and Occidental studies, while metastatic relapses were 36.2%, much higher than the other studies. All the available studies do not show a significant difference in overall survival between young and elderly. This rate varies according to the authors between 55% and 80%. Nevertheless, young age has been retained by several authors as an independent pejorative prognostic factor in breast cancer. In our cases, the overall survival at three years was 70% and survival without relapses at 62%.

5. CONCLUSION

Breast cancer is a serious disease whose incidence in young women is increasing. Our findings are consistent literature, advocating more advanced forms and a more poor prognosis of breast cancer in younger than older patients. It is necessary to adopt multidisciplinary care, to diagnose the disease at an earlier stage, to encourage oncogenetic consultations in women at risk and to implement treatments adapted to the prognostic factors in young women.

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