The Study on the Clinical Features and Prognosis of Pregnancy-related Breast Cancer

Dongxing Zheng[1], Jihai Jin[2*], Qun Zhang[1]

[1]Department of Oncology, Binzhou People's Hospital, No.515 Huanghe 7 Road, Binzhou 256600, Shandong Province, China

[2]Department of Breast surgery, Binzhou People's Hospital, No.515 Huanghe 7 Road, Binzhou 256600, Shandong Province, China

Abstract: *Objective:* To explore the clinical features of pregnancy-related breast cancer and the related factors affecting the prognosis. *Methods:* The research work was carried out in our hospital from January 2018 to January 2019. In this study, 50 patients were selected as related breast cancer patients and 50 non-pregnancy related breast cancer patients were selected as control group. The clinical characteristics and prognosis of the two groups were compared and analyzed. *Results:* According to the incidence of pregnancy-related breast cancer, the onset of breast cancer is in pregnancy and lactation, with more than half of the total number of patients having two or more pregnancies and 74.0% of the patients having breast feeding history. In the two groups, most of the patients went to see a doctor because of palpable breast masses, and the average maximum diameter of tumors in PBC group was (5.13 ± 3.22)cm, including 5 cases accompanied by dimple sign, 7 cases accompanied by nipple depression, 8 cases accompanied by inflammatory changes of skin, 3 cases with pathological changes involving whole milk, and 27 cases (54.00%) with palpable axillary enlarged lymph nodes on the same side. The average maximum value of tumor in Non-PABC group was (3.94 ± 2.11) cm, with 5 cases accompanied by dimple sign, 4 cases accompanied by nipple depression, and 9 cases (18.00%) with palpable axillary lymph nodes on the same side. *Conclusion:* As far as pregnancy-related breast cancer is concerned, the clinical misdiagnosis rate is relatively high and the prognosis is poor. Prenatal examination and breast-feeding breast cancer examination are needed to ensure early detection and diagnosis. This is the key factor to ensure the survival rate of pregnancy-related breast cancer patients and has positive significance for clinical development.

From the perspective of current clinical development, the breast cancer is still a malignant tumor that poses a serious threat to women's health in our country. The age of onset is mostly 30-59 years old, which is the reproductive age of women[1]. Breast cancer patients in this period are called pregnancy-related breast cancer[2]. Pregnancy-related breast cancer refers to primary breast cancer patients diagnosed during pregnancy or within one year after delivery. It is of positive significance to improve the clinical effect of patients by analyzing the pathological characteristics of patients and determining the relevant factors affecting the prognosis of patients[3].

1 Materials and methods

1.1 General information

The research work was carried out in our hospital from January 2018 to January 2019. In this study, 50 patients were selected as related breast cancer patients and 50 non-pregnancy related breast cancer patients were selected as control group. The patients' age range was

24-39 years old, with an average age of (30.33±4.34) years old. There was no significant difference in general data between the two groups of patients, which could be compared between the two groups.

1.2 Research Methods

Patients were followed up, and the follow-up time was calculated from the time of treatment to the end of the study, and the survival time was based on months[4].The methods of outpatient or inpatient review and telephone follow-up were used to ensure relatively complete follow-up data, and the follow-up time of patients in the two groups was the same[5]. During the follow-up, all patients cooperated actively. As for the follow-up content, it mainly includes the survival status of the patient, whether there is metastasis, whether there is tumor recurrence, and whether the patient has received treatment[6].

1.3 Statistical methods

Statistical software SPSS 20.0 was used to analyze the data obtained from this study. the comparison results of measurement data ($x±s$) were verified by t value, and the comparison results of counting data (n, %) were verified by χ^2 value. when $P<0.05$, the comparison difference was statistically significant.

2 Results

2.1 Pregnancy, lactation and fertility of the PABC group

According to the incidence of pregnancy-related breast cancer, the onset of breast cancer is in pregnancy and lactation, with more than half of the total number of patients having two or more pregnancies and 74.0% of the patients having breast feeding history.

Table 1. Pregnancy, lactation and fertility of the PABC group

Factors	Samples	Ratio
One pregnancy	15	30
Pregnancy > 1	35	70
0 births	4	8
Give birth once	21	42
Birth > 1	25	50
No nursing	13	26
breastfeeding	38	74

2.2 Clinical features and imaging examination

In the two groups, most of the patients went to see a doctor because of palpable breast masses, and the average maximum diameter of tumors in PBC group was (5.13 ± 3.22) cm, including 5 cases accompanied by dimple sign, 7 cases accompanied by nipple depression, 8 cases accompanied by inflammatory changes of skin, 3 cases with pathological changes involving whole milk, and 27 cases (54.00%) with palpable axillary enlarged lymph nodes on the same side. The average maximum value of tumor in Non-PABC group was (3.94 ± 2.11) cm, with 5 cases accompanied by dimple sign, 4 cases accompanied by nipple depression, and 9 cases (18.00%) with palpable axillary lymph nodes on the

same side.

2.3 Comparison of clinical and pathological characteristics between the two groups of patients

The clinical and pathological characteristics of the two groups of patients were compared. The maximum diameter of the patients in the PABC group was > 5cm, ER negative rate, axillary lymph node metastasis, Ki-67 overexpression were significantly different from those in the Non-PABC group($P<0.05$). There was no significant difference between the two groups in breast feeding history, PR negative, TNM staging, Her-2 receptor status and triple negative breast cancer, and so on($P>0.05$).

Table 2. Comparison of clinical and pathological characteristics between the two groups of patients

Clinicopathological characteristics	PABC	Non-PABC	χ^2	P
breastfeeding	30	32	0.395	>0.05
No nursing	20	18		
Tumor diameter<5cm	25	20	3.405	<0.05
Tumor diameter>5cm	25	30		
Axillary lymph node negative	15	36	3.956	<0.05
Positive axillary lymph node	35	14		
TNM I-II	20	21	0.865	>0.05
TNM III	30	29		
Estrogen receptor negative	28	19	4.506	<0.05
Estrogen receptor positive	22	31		
Progesterone receptor negative	27	30	0.865	>0.05
Progesterone receptor positive	23	20		
triple negative breast cancer	13	15	0.859	>0.05
Not triple negative breast cancer	37	35		
No adjuvant chemotherapy	35	37	0.456	>0.05
Accept adjuvant chemotherapy	15	13		
Her-2 Negative	24	14	0.495	>0.05
Her-2 Positive	26	36		
Ki-67>20%	27	15	5.965	<0.05
Ki-67<20%	23	35		

3 Discussion

As far as pregnancy-related breast cancer is concerned, it is a multiple malignant tumor in women's special physiological period. With the development and advancement in recent years, the incidence of breast cancer in our country is gradually becoming younger and advancing to modern women during pregnancy[8]. As far as the occurrence and development of pregnancy-related breast cancer are concerned, it is related to heredity and environmental factors as well as common breast cancer. However, but in PABC, it usually occurs during pregnancy or lactation, and the hormone and cell level in patients will change, resulting in certain particularity in clinical specificity, physiological diagnosis, diagnostic methods and prognosis of pregnancy-related breast cancer[9]. Pregnancy-related breast cancer occurs mostly in childbearing age, and the patients tend to be younger. According to relevant literature data reports, the onset age of pregnancy-related breast cancer patients is about 33 years old[10]. The analysis of the characteristics of pregnancy-related breast cancer could clarify the clinical characteristics of the patients, improve the diagnostic effect of the patients, and have positive significance for the clinical development.

In summary, when pregnancy-related breast cancer is concerned, the clinical misdiagnosis rate is relatively high and the prognosis is poor. Prenatal examination and breast-feeding breast cancer examination are needed to ensure early detection and diagnosis. This is the key factor to ensure the survival rate of pregnancy-related breast cancer patients and has positive significance for clinical development.

References

[1] Wu SY. Clinical characteristics and prognosis analysis of

pregnancy-related breast cancer[D]. Journal of Xinjiang Medical University, 2016.

[2] Li C, Ning Y. Qualitative research on psychological experience of pregnancy-related breast cancer[J]. Chinese General Nursing, 2016, 14(1): 63-65.

[3] Jin JH, Liu YJ, Wang Q. Analysis of clinical and pathological characteristics and prognostic factors of pregnancy-related breast cancer[J]. Journal of Southeast University(Medical Science Edition), 2018, 37(3): 440-444.

[4] Du Rui, Gao Hongyi, Guo Yujuan, Chen Wenjing, Wu Kunhe. Pathological characteristics and molecular typing of 39 cases of pregnancy-related breast cancer[J]. Journal of Tropical Medicine, 2018,18(7): 923-926.

[5] Cao FQ, Kang F, Yang SL. Clinicopathological analysis of 3 cases of pregnancy-related breast cancer[J]. Chinese Journal of Woman and Child Health Research, 2019, 30(6): 775-777.

[6] Vipul VN, Milind SC. Efficacy of Sentinel Lymph Node Biopsy in Detecting Axillary Metastasis in Breast Cancer Using Methylene Blue[J]. Springer India, 2017, 8(2).

[7] Mohammad AM, Babak B, Majid S, et al. Combination treatment with dendrosomal nanocurcumin and doxorubicin improves anticancer effects on breast cancer cells through modulating CXCR4/NF-κB/Smo regulatory network[J]. Springer Netherlands, 2017, 44(4).

[8] Amanda BP, Zhao QX, Erin WH, et al. Buformin inhibits the stemness of erbB-2-overexpressing breast cancer cells and premalignant mammary tissues of MMTV-erbB-2 transgenic mice[J]. BioMed Central, 2017, 36(1).

[9] Muhammad A, Mehwish I, Muhammad D, et al. Awareness and current knowledge of breast cancer[J]. BioMed Central, 2017, 50(1).

[10] Elizabeth AW, Checkley LA, Erin DG, et al. The Androgen Receptor Supports Tumor Progression After the Loss of Ovarian Function in a Preclinical Model of Obesity and Breast Cancer[J]. Springer US, 2017, 8(5-6).