Original Article

Evaluation of Breast Cancer Markers in Women Candidates for Mastectomy

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ABSTRACT

Introduction: Breast cancer is known as the most common cancer in women and various aspects of dealing with this disease have been studied by researchers for many years. One of these areas is tumor markers and its effect on determining the prognosis of patients and determining the most appropriate treatment method. Therefore, we decided to conduct a study to evaluate tumor markers of breast cancer in women candidates for mastectomy.

Methods: The clinical records of 100 patients with breast cancer were evaluated for information such as information about pathological examinations of the sample (markers: ER, PR, HER2, P53, CEA) and recurrence of symptoms during a two-year period. Data were analyzed using SPSS ver17 statistical software, descriptive statistics and logistic regression test.

Results: 24% had recurrence among which P53 and CEA markers had the highest frequency and in the absence of recurrence group ER and CEA markers had the highest frequency.

Conclusion: According to the results of this study, it seems that paying attention to tumor levels of markers such as P53 and CEA can be helpful in identifying people who will have recurrence and attention to it can greatly determine the fate of the disease.

Introduction

Breast cancer is the most common malignancy and cancer with the highest mortality in women, with an annual mortality rate of between 30,000 and 45,000 in the United States [1]; This cancer is also the most common malignancy among women in Iran. Many factors such as family history, pregnancy and irregular menstruation, breast lesions and X-rays are considered as risk factors for breast cancer that have increased the incidence of cancer in women. However, for

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reasons such as increased screening and early detection, the use of systemic therapies has significantly reduced mortality from the disease compared to the past [2]. Determining the severity of the disease largely depends on factors such as tumor size, presence or absence of invasion, involvement or non-involvement of the skin, lymph node involvement, type of pathology, etc. One of the most appropriate tools in determining the degree of invasion and its strength, which has a positive effect on systemic therapies such as chemotherapy, is to assess the status of tumor markers at the time of diagnosis. Common markers studied include: ER, PR, HER2, P53, CEA [3]. Numerous studies have been performed on the relationship between tumor markers and response to treatment, most of which have not reported accurate results for reasons such as low sample size, low duration, etc., which has made it worthwhile to use clinically. ¬ Remain unanswered in response to treatment and predict relapse [4]. Tumor markers can greatly predict the fate of the disease, the study of which can affect the treatment protocol and ultimately greatly affect the survival of patients; In addition to early detection of the type and severity of cancer, breast cancer markers can lead to the identification of newer therapies, increase patients 'life expectancy, reduce treatment costs, reduce treatment protocol failure and improve patients' quality of life [5,6]. Due to the fact that breast cancer varies from country to country and region to region for reasons such as environmental conditions and racial backgrounds, we decided to conduct a study to examine tumor cancer markers in women. Candidate mastectomy should be performed in Tabriz women so that by examining it, we can identify tumor markers common in this type of cancer and pave the way for more accurate treatments.

Material and Methods

This study is a retrospective descriptive-analytical study in which the records of 100 patients with breast cancer who referred to the clinic of Imam Reza Hospital in Tabriz during the period from the beginning of 2018 to the end of 2019 and their breast cancer was proven. Wu were candidates for mastectomy, were examined. Variables such as demographic information (age, level of education and occupation, etc.) Risk factors for breast cancer (family history, menstrual status, history of taking hormonal drugs and history of breast disease) Information determining the clinical stage of the disease (tumor size and lymph status) Underarm nodes) Information about surgery, information about postoperative therapies, information about pathological examinations of the sample (markers: ER, PR, HER2, P53, CEA) and recurrence of symptoms from the patient's file and case Were examined. After confirming the ethics code from the ethics committee of Tabriz University of Medical Sciences (IR.TBZMED.REC.1397.648), the required data were collected. After collecting data, data were statistically analyzed using SPSS ver17 statistical software. Descriptive statistics were used to categorize the data and logistic regression test was used to examine their interactions.

Results

All patients were female and the mean standard deviation of their age was 48.68. 3.79 years. Of the total number of patients, 24 had recurrence after treatment. The frequency of the studied variables is shown in Table 1. The results of multivariate logistic regression showed that at the age of 35 years, the risk of disease recurrence in CEA and P53 markers is easily predictable. The results of multivariate logistic regression are given in Table 2.

Discussion

The aim of this study was to evaluate breast cancer tumor markers in patients undergoing mastectomy. According to the results of the study, most of the patients are over 35 years old, which is consistent with the results of several studies in this field. In this regard, researchers believe that with the passage of time and increasing risk of environmental and acquired factors, the age of cancer in women is decreasing by force, so that in the last decade, the age threshold has reached 35 years, the results of which The present is aligned [7,8].

Table 1 Frequency of variables studied in the study participants

Without recurrence(N=76)		With recurrence(N=24)		Variable
%	N	%	%	
		Age		
9.2%	7	0	0	**<25 years**
14.47%	11	20.83%	5	**25-35**
32.92%	25	29.16%	7	**35-45**
34.21%	26	12.5%	3	**45-55**
18.22%	7	37.51&	9	**>55**
				Tumor Size
30.27%	23	25%	6	**<2 Cm**
52.63%	40	50%	12	**2-5 cm**
17.10%	13	25%	6	**>5 cm**
				Lymph node involvement
70.05%	54	75%	18	**Yes**
28.95%	22	25%	6	**No**
				Surgery Type
59.21%	45	72.72%	16	**Total**
40.79%	31	27.28%	8	**Partial**
				Type of pathology
67.10%	51	45.83%	11	**ductal**
32.90%	25	54.17%	13	**Non ductal**
				ER Marker
72.36%	70	75	18	**+**
27.64%	6	25	6	**-**
				PR Marker
71.14%	55	54.17%	13	**+**
28.86%	21	45.83%	11	**-**
				HER2 Marker
86.85%	66	70.83%	17	**+**
13.15%	10	29.17%	7	**-**
				P53 Marker
77.63%	59	83.33%	20	**+**
22.37%	17	16.64%	2	**-**
				CEA Marker
89.74%	68	79.16%	19	**Abnormal**
10.53%	8	10.86%	3	**Normal**

The recurrence of cancer in the present study is 24%. The highest recurrence rate is in the age group of 35-45 years. Menopausal age overlap seems to be related to recurrence rate, which requires further research in this area. Numerous studies show that recurrence after cancer is an undeniable problem and some patients recur during treatment for unknown reasons, the recurrence rate in different studies is 19-36%. Are reported to be consistent with the present study [9-11]. In the present study, most people (78%) had a positive ER marker, which indicates the importance of this marker in the treatment program. The results of this study are consistent with other studies in this field, and in other studies, this marker has been reported positive in most people with breast cancer. In this regard, researchers believe that the decision of treatment protocol based on the ER marker is not the right thing to do and a unique method should be used for the treatment protocol; He did not comment on the alternative method in

his study [12-15]. The results of the HER2 marker study in the present study were positive in most people, which is normal and is consistent with the results of other studies. In this regard, researchers say that the role of this marker in the treatment process and treatment plan has a special place and specialists should be most careful about this marker [16]. Experiments have shown that the P53 marker is also positive in most patients, but according to other studies, in this study, the rate of this marker is very high in people who have recurrences; In fact, it can be said that if the presence of this tumor marker is reported positively, the probability of the disease recurring will increase; Therefore, it is necessary to adjust the treatment plan in such a way as to prevent recurrence [17]. Paying attention to this tumor marker can probably help a lot in preventing cancer recurrence. The results of the present study in this field are consistent with other studies. Elevated CEA marker levels are also seen in this study in most people, especially in the group of people who have recurrences. Increasing this marker is a good indicator to identify people who will have a recurrence, so paying attention to it can prevent its recurrence. The results of this study are in line with other studies conducted in this field [19-22].

Table 2 Multivariate logistic regression results

P Value	CI95%	OR	
Tumor Size			
0/2	0.6-45	2	**<2 Cm**
0.06	2.11-25.57	3	**2-5 cm**
0.05	0.4-41.5	20.8	**>5 cm**
Lymph node involvement			
	reference		**Yes**
0.7	0.01-1.01	0.5	**No**
Surgery Type			
	reference		**Total**
0.7	0.03-1.08	0.1	**Partial**
Type of pathology			
	reference		**ductal**
0.06	0.1-25.6	22.3	**Non ductal**
ER Marker			
0.1	0.2-11.3	1.01	**+**
	reference		**-**
PR Marker			
0.8	0.09-2	1.08	**+**
	reference		**-**
HER2 Marker			
0.007	1.60-11.1	6.1	**+**
	reference		**-**
P53 Marker			
0.9	0.09-20	1.4	**+**
	reference		**-**
CEA Marker			
0.2	0.5-38.5	3.8	**Abnormal**
	reference		**Normal**

Conclusion

According to the results of the present study, it seems that this method of using magnesium sulfate, although it is effective in reducing the need for opioids in laparotomy patients with a history of radiotherapy, but cannot reduce the need for opioids to zero.

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