



Correlation Between Different Histological Types Of Breast Cancer and Estrogen Receptors

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Original Article

Abstract

Breast cancer is considered in the world as one of the most important causes of mortality in women. This is how in Chile an increase in the incidence and mortality from this pathology has been observed, which translates into an epidemiological problem of interest. The results of 140 histological samples taken from patients with breast cancer to determine their concentration of estrogen receptors are presented. The importance and frequency of positivity for estrogen receptors in all histological types stands out. Among the known risk factors for developing malignant disease of the breast, the following stand out: Female sex, chronological age, first and second degree family history of breast cancer, hereditary predisposition (BRCA 1 and 2), hormonal factors (menarche early menopause, late menopause, nulliparity or late primiparous age, obesity, Oral Contraceptives (OCCs) and Hormone Replacement Therapy (HRT) and others such as environmental, dietary and radiation exposure factors

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1. INTRODUCTION

Breast cancer is considered in the world as one of the most important causes of mortality in women. This is how in Chile an increase in the incidence and mortality from this pathology has been observed, which translates into an epidemiological problem of interest.

In Chile, breast cancer is the third leading cause of cancer death in women with a rate of 13 per 100,000 women/year, so it is necessary to implement several attack therapeutic approaches to reduce mortality (1) .

Among the known risk factors for developing malignant disease of the breast, the following stand out: Female sex, chronological age, first and second degree family history of breast cancer, hereditary predisposition (BRCA 1 and 2), hormonal factors (menarche early menopause, late menopause, nulliparity or late primiparous age, obesity, Oral Contraceptives (OCCs) and Hormone Replacement Therapy (HRT) and others such as environmental, dietary and radiation exposure factors (1 , 2) .

Breast cancer follows the basic oncological rule that a well-differentiated tumor has a good prognosis, and based on this premise, it is necessary to identify tumor markers that allow effective treatments.

Various studies have shown that tumors with high concentrations of estrogen receptors have a better evolution and prognosis than tumors that are poor or negative for such receptors (3) .

According to the existing literature, it is known that 60% of malignant breast tumors are positive for hormone receptors, which is related to better differentiated tumors and less relative aggressiveness.

These tumors with high concentrations of estrogen receptors have a better evolution than poor or negative tumors of such receptors. In 1967, for the first time, Jensen et al. were able to identify estrogen receptors in tumor tissues and it was not until 1977 when Knight et al.

associated early recurrent breast disease with tumors that lacked hormone receptors (4 , 5 , 6 , 7). This revolutionary concept for the time was confirmed in 1980 when it was possible to determine a shorter survival of patients with estrogen receptor-negative breast cancer (8).

Immunohistochemical determination of estrogen receptors in neoplastic tissue determines the use of hormone therapy, a useful tool in the treatment of breast cancer (9 , 10).

Aim

To determine the relationship between the different histological types of breast cancer and their positivity to estrogen receptors.

2. PATIENTS and METHODS

The results of 140 histological samples corresponding to patients with breast cancer, obtained at the Dr. Gustavo Fricke Hospital, in the period between January 1998 and May 2001, were reviewed.

To determine estrogen receptors, the immunohistochemical detection technique for paraffin sections was applied, with the avidin-biotin system (Dako monoclonal kit). Diaminobenzidine was used as a chromogen, which stains the estrogen receptor-positive cell nucleus brown, and light green was used for counterstaining (11 , 12 , 13).

All biopsies were diagnosed and reviewed by our pathologists using current criteria (percentage of positive cells and intensity of reaction) (Figures 1 and 2).

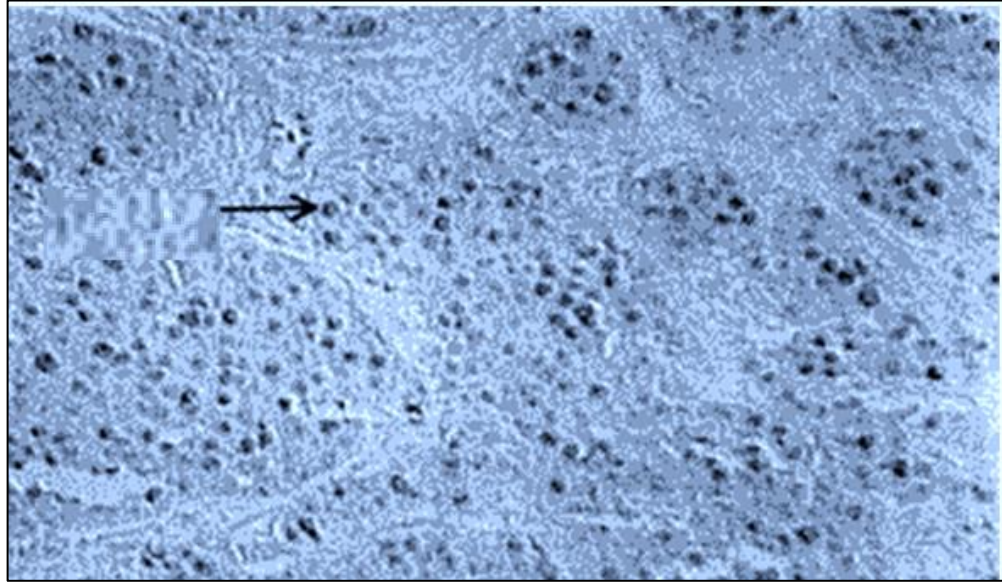


Figure 1. Biopsy of scirrhous ductal cancer with great positivity of its nuclei for estrogen receptors.

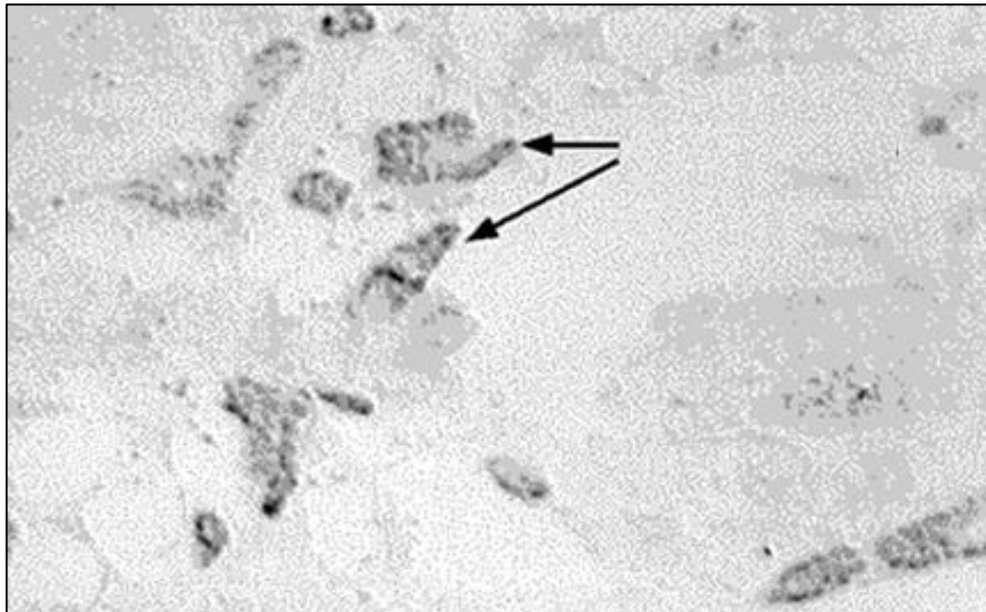


Figure 2. Clusters of nuclei positive for estrogen receptors in scirrhous ductal cancer of the breast.

3. RESULTS

A total of 140 biopsies from patients with breast cancer diagnosed in our center were selected. The distribution by histological type of the cancers studied was scirrhus ductal 60.7% (n= 85), intraductal 28% (n= 39), infiltrating lobular 7.1% (n= 10), colloidal 2.1% (n= 10). = 3), intracystic papillary 1.4% (n= 2) and medullary 0.7% (n= 1) (Table I). The distribution by histological type of the cancers studied was scirrhus ductal 60.7% (n= 85), intraductal 28% (n= 39), infiltrating lobular 7.1% (n= 10), colloidal 2.1% (n= 10). = 3), intracystic papillary 1.4% (n= 2) and medullary 0.7% (n= 1) (Table 1). The average age in our series was 58.2 years (range: 32 to 91 years, median: 61 years). Of all the biopsies studied, there were 70% (n= 98) positive estrogen receptors and 30% (n= 42) negative samples for this type of hormone receptor . The distribution for each histological type and its positivity for estrogen receptors is as follows: scirrhus ductal 68.2% (n= 58), intraductal 71% (n= 28), infiltrating lobular 90% (n= 9), colloidal 33.3% (n= 1), intracystic papillary 50% (n= 1), medullary 100% (n= 1) (Table 2). Of all the positive biopsies for estrogen receptors (n= 98), the distribution according to intensity was the following: mild scirrhus ductal 27.06%, moderate 14.12% and high 27.06% mild intraductal 30.77%, moderate 12.82% and discharge 28.21%; mild infiltrating lobular 20%, moderate 0%, high 70%; mild colloidal 0%, moderate 0%, high 33.3%; mild intracystic papillary 0%, moderate 50% and high 0%; mild spinal cord 0%, moderate 100%, high 0% (Table 3)

Table 1. Frequency of the different histological types

Histological type	Total No.	%
scirrhus ductal	85	60.7
intraductal	39	27.9
infiltrating lobular	10	7.1
colloidal	3	2.1
intracystic papillary	2	1.4
Medullary	1	0.7
Total	140	100.0

Table 1. Frequency of positivity for estrogen receptors in different histological types of breast cancer

Histological Type	Total No.	RE+	%
Scirrhouc Ductal	85	58	68.2
Intraductal	39	28	71.8
Infiltrating Lobular	10	9	90.0
Colloidal	3	1	33.3
Intracystic Papillary	2	1	50.0
Medullary	1	1	100.0
Total	140	98	70.0

Table 3. Intensity for estrogen receptors in histological types of breast cancer

Histological type	<i>null</i>	<i>Mild</i>	<i>moderate</i>	<i>high</i>	<i>Total</i>
Scirrhouc ductal (n)	27	23	12	23	85
Intraductal (n)	11	12	5	11	39
Infiltrating lobular (n)	1	2	0	7	10
Colloid (n)	2	0	0	1	3
Intracystic papillary (n)	1	0	1	0	2
Medullary (n)	0	0	1	0	1
Total (no.)	42	37	19	42	140
Percentage	30.0	26.4	13.6	30.0	100.0

4. DISCUSSION

This study confirms the importance of immunohistochemical determination of estrogen receptors, since their presence is more frequently associated with higher-incidence breast carcinomas (9 , 14). In addition, in the histological types with the greatest appearance, today a high percentage of positivity for estrogen receptors is detected, which confirms that its detection, carried out under standardized conditions and of high technical quality, is a very important tool for the hormonal therapeutic approach to treatment. of these lesions, which has been widely demonstrated by various studies on estrogen receptors and hormonal treatment (15). It is necessary to mention that the immunocytochemical technique has become part of scientific work, providing many advantages with significant sensitivity and specificity. Currently, the detection of hormone receptors in breast cancer is essential; since this point becomes part of the treatment that will be given to the patient, such as the use of tamoxifen (16 , 17).

Ethical Clearance:

Ethical issues were taken from the research ethics committee. Informed consent was obtained from each participant. Data collection was in accordance with the World Medical Association (WMA) declaration of Helsinki for the Ethical Principles for Medical Research Involving Human Subjects, 2013 and all information and privacy of participants were kept confidentially.

Conflict of interest: Authors declared none

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