ESTROGEN RECEPTORS
AND HISTOPATHOLOGICAL EVALUATION
OF HUMAN BREAST CANCER

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Summary: The breast cancers with positive ER, the anaplastic low level and the node non involvement were identified with good prognostic values. The positive estrogen receptors in 52 primary breast carcinomas were correlated with either big or small tumors, with node involvement or without it and either with or without sinus histocitosis reaction. The vascular and lymph infiltration, the undifferentiated and half-differentiated carcinomas, the high stroma component and the high number of mitosis were other parameters with were opposed to positive ER tumors. The prevailing age of the patients was postmenopausal.

The hormonodependent breast cancers have favourable prognostic significance in correlation with their cellular differentiation, size: number of mitosis, histological type, lymphocytic infiltration, node involvement and the age of the patient(1, 2, 3, 4).

Some authors like Antoniades et al. (12) and Silfversward et al. (13) have reported on the correlation of estrogen receptor (ER) levels with histology obtaining contradictory results (5, 6, 7, 8).

In an attempt to arrive at conclusions which will contribute to a better knowledge of the evolution and prognosis of hormonodependent breast tumors, a detailed histopathological study of primary breast carcinomas with Positive Hormone Estrogen Receptors was therefore done. This study led us to different conclusions: all cases were ER+ with different levels and were correlated with the histologic type.

From the anatomic and pathologic points of view, the histologic characteristics, node involvement, infiltration of lymph and blood vessels, tumorous stroma, lymphocytic infiltration, anaplastic degree, cellular volume, solid areas, mitosis, formation of ducts and node histocitosis reaction were correlated.

The dosage of receptors was carried out by the activated carbon technique and the content was determined and reported by Scatchard's method which was modified by Calandra and Charreau (14); those binding less than 2 fml/mg were classified receptor negative (ER−) and those binding more than 2 fml/mg were considered receptor positive (ER+).

RESULTS

There were 52 patients with primary breast cancer in this study. Their ages ranged from 27 to 80 years, with a mean of 56.

Of the 52 carcinomas 41 were infiltrating ductal scirrhous, 9 were lobular, and 2 were medullar.

Ductal scirrhous carcinomas: 17 carcinomas were less than 20 mm size, 18 between 20 and 50 mm and 6 more than 50 mm size.

The distribution of clinical stages was the following: Stage I in 15 cases, Stage II in 17, Stage III in 6 and Stage IV in 3.
CORRELATION OF ESTROGEN RECEPTOR LEVELS WITH HISTOLOGY IN HUMAN MAMMARY CANCER

HORMONODEPENDENT TUMORS

UNFAVORABLE EVOLUTION

C  B  A

FAVORABLE EVOLUTION

A  B  C

ESTROGEN RECEPTORS (+)

SCIRRHOUS CARCINOMA

LOBULAR CARCINOMA

SIZE > 50 mm.

DIFFERENTIATED

UNDIFFERENTIATED

INfiltration of lymph vessels

INfiltration of blood vessels

ABUNDANT MITOSIS

SCANT MITOSIS

NODE HISTIOCYTIC REACTION

EXTRANODAL DISEASE

(*) NODES (-)

MICROMETASTASIS

UP TO 3 NODES

FAVORABLE BEHAVIOR

Fig. 1.
ER in the scirrhoues carcinomas ranged between 2.3 and 43.2 flm/mg, being from 2 to 8 flm/mg in 23 cases; from 9 to 15 flm/mg in 12 cases; from 15 to 30 flm/mg in 4 cases and more than 30 flm/mg in 2 cases (table 1).

The axillary lymph node involvement was not observed in 18 cases whereas 1-3 nodes were present in 4 cases and in 19 cases more than 3 nodes were present with metastatic involvement.

The node histiocytic reaction was found in 37 cases. It was abundant in 9 cases, moderate in 12 and scant in 16 (table 2).

The lymph vessel infiltration appeared in 39 cases while the blood vessel infiltration was observed in 32.

The lymphocytic infiltration was abundant in 3 cases, moderate in 5, scant in 25 and absent in 8 (table 3).

The anaplastic degree was well differentiated in 9 cases, less differentiated in 16 and poorly differentiated in 16.

With regard to the cellular volume, large cells were found in 24 cases while in 17 they were small.

The number of mitosis was abundant in 25 cases, moderate in 12 and scant in 4 (table 4).

The tumorous stroma was scant in 2 cases, abundant in 25, sensitive in 5 and fibrous in 9.

The solid areas were scarce in 12 cases, prevailed in 18 cases and 50% was found in 11 cases.

The formation of ducts was frequent in 16 cases and seldom in 25 (table 5).

Lobular carcinomas: Two carcinomas were less than 20 mm long, 4 ranged between 20 and 50 mm long and 3 were more than 50 mm long.

The clinical stage was related to the size of the tumor.

The histological reaction percentage varied between 3 and 41 flm/mg, being from 2 to 8 flm/mg in 4 cases; from 8 to 15 flm/mg in 1 case; from 15 to 30 flm/mg in 2 cases and more than 30 flm/mg in 2 cases (table 1).

The axillary lymph node involvement was observed in 9 cases out of which, 7 had more than 3 lymph nodes with metastasis.

The node histiocitaria reaction was abundant in 2 cases, moderate in 5 and absent in 2 (table 2).

The lymph vessel infiltration was found in 8 cases whereas the blood vessel infiltration was observed only in 2 cases.

The lymphocytic infiltration appeared abundant in 1 case, moderate in 3, scant in 3 and absent in 2 (table 4).

As regards the anaplastic degree, it was well differentiated with large cells in 8 cases.
Table 1. — Relationship of Histologic Type in Breast Cancer to Estrogen Receptor (ER) Value.

<table>
<thead>
<tr>
<th>Pathology</th>
<th>T. Size</th>
<th>Clinical Stage</th>
<th>ER Values (f/ml/mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;20 (%)</td>
<td>20-50 (%)</td>
<td>&gt;50 (%)</td>
</tr>
<tr>
<td>Ductal Scirrhous</td>
<td>17(42%)</td>
<td>18(43%)</td>
<td>6(15%)</td>
</tr>
<tr>
<td>Carcinoma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobular Carcinoma</td>
<td>2(22%)</td>
<td>4(44%)</td>
<td>3(24%)</td>
</tr>
<tr>
<td>Medullar Carcinoma</td>
<td>—</td>
<td>2</td>
<td>—</td>
</tr>
</tbody>
</table>

Table 2. — Relationship of Histologic Type in Breast Cancer to Estrogen Receptor (ER) Value.

<table>
<thead>
<tr>
<th>Pathology</th>
<th>Node Involvement</th>
<th>Node Histological React.</th>
<th>ER Values (f/ml/mg)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>1-3</td>
<td>+3</td>
</tr>
<tr>
<td>Ductal Scirrhous</td>
<td>18(44%)</td>
<td>4(9%)</td>
<td>19(47%)</td>
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<tr>
<td>Carcinoma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobular Carcinoma</td>
<td>2(22%)</td>
<td>—</td>
<td>7(78%)</td>
</tr>
<tr>
<td>Medullar Carcinoma</td>
<td>2</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Table 3. — Relationship of Histologic Type in Breast Cancer to Estrogen Receptor (ER) Value

<table>
<thead>
<tr>
<th>Histology</th>
<th>Blood v. Inf.</th>
<th>Lymph v. Inf.</th>
<th>Lymphocytic Inf.</th>
<th>ER Values (f/ml/mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes %</td>
<td>No %</td>
<td>Yes %</td>
<td>No %</td>
</tr>
<tr>
<td>Ductal Scirrhous</td>
<td>32(78%)</td>
<td>9(22%)</td>
<td>39(95%)</td>
<td>2(5%)</td>
</tr>
<tr>
<td>Carcinoma</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobular Carcinoma</td>
<td>2(22%)</td>
<td>7(78%)</td>
<td>8(89%)</td>
<td>1(11%)</td>
</tr>
<tr>
<td>Medullar Carcinoma</td>
<td>1(50%)</td>
<td>1(50%)</td>
<td>2</td>
<td>—</td>
</tr>
</tbody>
</table>
Table 4. — Relationship of Histologic Type in Breast Cancer to Estrogen Receptor (ER) Value

<table>
<thead>
<tr>
<th>Histology</th>
<th>Anaplastic Grade</th>
<th>Cellular Vol.</th>
<th>Mitosis</th>
<th>ER Values (f/ml/mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dif. %</td>
<td>Half-dif.</td>
<td>Undif.</td>
<td>Large</td>
</tr>
<tr>
<td>Ductal Scirrhous Carcinoma</td>
<td>9 (22)</td>
<td>16 (39)</td>
<td>16 (39)</td>
<td>24 (58)</td>
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<tr>
<td>Lobular Carcinoma</td>
<td>8 (89)</td>
<td>—</td>
<td>1 (11)</td>
<td>8 (89)</td>
</tr>
<tr>
<td>Medullar Carcinoma</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>2</td>
</tr>
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</table>

Table 5. — Relationship of Histologic Type in Breast Cancer to Estrogen Receptor (ER) Value

<table>
<thead>
<tr>
<th>Histology</th>
<th>Tumorous Stroma</th>
<th>Solid Areas</th>
<th>Duct's Formation</th>
<th>ER Values (f/ml/mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductal Scirrhous Carcinoma</td>
<td>2 (5)</td>
<td>26 (61)</td>
<td>5 (12)</td>
<td>9 (29)</td>
</tr>
<tr>
<td>Lobular Carcinoma</td>
<td>2 (22)</td>
<td>4 (44)</td>
<td>—</td>
<td>3 (34)</td>
</tr>
<tr>
<td>Medullar Carcinoma</td>
<td>1 (50)</td>
<td>1 (50)</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
The mitosis were moderate in 6 cases and scant in 2.

The tumorous stroma was scarce in 2 cases, abundant in 4 and fibrous in 3.

The formation of ducts was frequent only in 1 case whereas it was absent in 5 and was seldom in 4 (table 6).

DISCUSSION

The prevailing age was postmenopausal, with a mean age of 56, classification which was done after the separation of ER+ from ER−. The size of the scirrhous carcinomas and the presence of estrogen receptors varied little, between 20 and 50 mm (43%) and 42% for those with less than 20 mm. The percentages between 2-8 fmll/mg appeared in a 56% and in a 29% between 8-15 fmll/mg.

The lobular carcinomas showed a similar behaviour, being 2-8 fmll/mg the percentages which predominated with tumors between 20 and 50 mm.

With regard to the clinical stage, 77% comprised stages I and II and 85% less than 15 fmll/mg of protein; the latter refers to tumors with poor hormonodependence.

The lymph node involvement and the presence of the ER is not surprising: in 19/41 more than 3 lymph nodes were involved whereas no involvement was observed in 18/41. These features indicate that patients with relatively low estrogen receptors showed a high percentage of metastatic lymph nodes (56%). In the case of lobular carcinomas, 78% represented lymph node involvement.

The node histiocitaria reaction ranged between abundant and moderate in the majority of the cases with a good prognostic value for pathologists. In our cases with ER+, they were observed in a 78% and 95% respectively in the scirrhous carcinomas. A contrasting prognostic factor.

With respect to the lobular carcinomas, the vascular infiltration disagreed with the good prognostic value of ER (78%). However, the lymphatic infiltration was observed in a 89%, a completely paradoxical feature.

The fact that the 39% and 39% of the scirrhous carcinomas with ER were undifferentiated and half-differentiated caught our attention, as we expected a lower percentage. Furthermore, the mitoses were between abundant and moderate (90%) in the scirrhous carcinomas with ER and moderate (67%) in the lobular carcinomas.

The cellular volume was slightly large. In the scirrhous carcinomas, it was 58% and it was definitely larger in the lobular carcinomas, the same as is supposed for tumors with ER.

Another paradoxical finding is concerned with a higher index of tumors with abundant stroma.

As regards the solid areas, we found a higher percentage of solid areas in the lobular and scirrhous carcinomas than the expected one.

CONCLUSIONS

From our results it is clear that the determination of ER is qualitatively not sufficient to predict a prognostic value when it is mainly correlated with universally accepted parameters from the anatomic and pathologic points of view. However, a behaviour might be predicted in a case of significant quantitative differences. In 75% of our cases it ranged between 2-15 fmll/mg in correlation with 5.99 at 45 fmll/mg of Scatchard with poor ER tumors.

It could be concluded that the previous reports about the correlation of histology with ER activity have failed (9, 10, 11). This comparison in the hormonodependent tumors also fails to provide accurate data regarding the prognostic value as reported in the present paper.

The information gained from the determination of the ER has become an impor-
Correlation of colposcopy and histology findings in pre-clinical neoplasia of the cervix

BIBLIOGRAPHY


CORRELATION OF COLPOSCOPY AND HISTOLOGY FINDINGS IN PRE-CLINICAL NEOPLASIA OF THE CERVIX

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Summary: The histology findings of pre-clinical neoplasia of the cervix at cone biopsy were compared with the previous colposcopic assessment in fifty-eight patients. In 84.5% of cases colposcopy prediction was within one grade of the histology findings. This close correlation is important where suitability for local ablative therapy depends on accurate colposcopic assessment prior to tissue destruction.

INTRODUCTION

It is generally accepted that invasive cancer of the cervix is preceded by a spectrum of disease that can be recognised as cervical intraepithelial neoplasia in differing degrees of severity (1). Cervical cytology is the only practical method of screening for cervical intraepithelial neoplasia,