

Prognostic Factors in Stage-I Breast Cancer: A Retrospective Study

Pages with reference to book, From 117 To 118

Shahina Parveen, M. A. Shahid (INMOL, Nilore, Lahore.)

Abstract

We studied the case records of all patients presenting with stage-I breast cancer (tumour <2 cm, no axillary nodes or distant metastases). All clinical and pathological features were evaluated and findings were correlated with short term treatment failures (local and distant recurrences within 2 years). An early recurrence was seen in 28% patients. There was no significant difference in the mean age at presentation (44 vs 47 years) or menopausal status (8 Vs 7 years). Estrogen receptor status was unknown in all the patients. A positive family history of breast cancer was noted in 40% women with tumour relapse against 6% in the non-relapsed group. Associated fibrocystic mammary dysplasia was found in 80% relapsed cases whereas 60% showed lymphatic invasion and tumour necrosis. Vascular invasion was reported in 40% cases. A poorly differentiated histology fibrocystic mammary dysplasia, lymphatic and vascular invasion and tumour necrosis were poor prognostic factors. It was concluded that adjuvant chemotherapy should be given to all patients presenting with stage-I breast cancer and showing poor prognostic factors regardless of the menopausal status (JPMA 47:117, 1997).

Introduction

Breast cancer is the commonest malignancy in Pakistani women accounting for about 25-39% of all cancers¹. Mean age at presentation is about a decade earlier (47 years) compared to the West (57 years). The management of breast cancer depends on the stage of disease, menopausal status of the patient and number of Estrogen receptors in the primary tumour. The standard method of treatment for stage I breast cancer is mastectomy and axillary lymph node sampling. No chemotherapy or hormone therapy is usually given to these nodes negative patients. However, with the advent of modern surgical techniques and radiotherapy procedures, oncologists are more in favour of breast preservation surgery followed by radiotherapy, with or without adjuvant chemotherapy². The present study was undertaken to identify clinical and morphological features associated with recurrence in stage I patients. It is in these patients that the possible value of adjuvant chemotherapy would be most readily demonstrated³.

Patients and Methods

The case records of all patients registered at INMOL during 1985- 92, with stage I breast carcinoma were reviewed. Patients with atleast two years' follow-up were included in the study and they numbered 54. Staging was done according to UICC classification with a tumour 2 cm in maximum diameter, axillary nodes negative for metastasis and no evidence of distant spread. Investigations consisted of routine blood chemistry, x-ray chest for pulmonary metastasis, ultrasonography and isotope liver scan for hepatic metastasis and radioisotope bone scans for osseous metastases. Clinical data and histopathologic reports were carefully reviewed.

Results

Of the 54 patients reviewed, 5 had an inner quadrant tumour, 2 a central tumour and the remaining 47

(86%) an outer quadrant tumour. There was a preponderance of left breast tumour with a ratio of 3:1. Modified radical mastectomy was performed in most cases, quadrantectomy was performed in 3 patients. Twenty-three patients were operated at teaching hospitals in Lahore or elsewhere so the details of surgical findings and histopathological reports were more informative. Thirty-one patients had surgery performed at some private clinics or DHQ hospitals.

Mean age at presentation in the relapsed group was slightly lower (44 years vs 47 years) than the non-relapsed group. However, this was of no statistical significance (Table I).

Table I. Clinical features observed in stage I Ca breast.

	Relapsed 15	Non-relapsed 39
Mean age at presentation (years)	44	47
Premenopausal	8	18
Post menopausal	7	21
Family history of breast cancer	6	2

There was no significant difference in the recurrence patterns according to the menopausal status i.e., 8 premenopausal and 7 post menopausal patients relapsed (Table I) within 2 years. A stronger family history of breast cancer was found in patients with early recurrence within 2 years (Table I). Estrogen receptor status was unknown for all patients. Thirteen patients (80%) in the relapse group showed a high grade (moderately or poorly differentiated) histology of the primary breast cancer, while only 12 (30%) of the no relapse group showed such a histology (Table II).

Table II. Tumour differentiation as a feature of prognostic significance in stage I breast cancer.

Histology	Non-relapsed		Relapsed	
	39	(%)	15	(%)
Well differentiated	22	(56)	1	(6.5)
Moderately differentiated	6	(15.5)	3	(20)
Poorly differentiated	6	(15.5)	10	(67)
Unknown	5	(13)	1	(6.5)

Likewise higher percentage of patients in the relapse group showed other poor prognostic factors like fibrocystic mammary dysplasia (60% vs 100%), lymphatic invasion (61% vs 12%), vascular invasion (0% vs 62%) and tumour necrosis (10% vs 60%) (Table III).

Table III. Histopathological features of prognostic significance in stage I breast cancer.

Histology	Non relapsed		Relapsed	
	39	(%)	5	(%)
Fibrocystic				
mammary dysplasia	3	(7)	11	(73)
Lymphatic invasion	5	(13)	12	(80)
Vascular invasion	0	(0)	13	(86)
Tumour necrosis	3	(7)	10	(66)

Discussion

Carcinoma of breast is the commonest female malignancy in Pakistan, accounting for 25-39% cancer in women¹. Unfortunately, for unknown reasons this disease affects younger age group and is of a more advanced stage at presentation. In the present study we evaluated clinical and pathological features in stage I breast cancer to identify a sub-group of patients at high risk for early recurrences. We found that the age and menopausal status was not a significant factor for early recurrence. This is contradictory to other studies showing early recurrences (18-24 months) in patients presenting at a younger age (20-54 years)^{4-9,10}.

The increased risk of breast cancer in patients with a positive family history of breast cancer is well recognised⁸⁻¹². This was also observed in this study where 6 recurrences occurred in patients with a family history of breast cancer compared to 2 in the non-relapsed group. Several investigators have demonstrated increasing 5 year survival rates with increasing well differentiated tumour nuclei^{5,6,9}. Fisher et al reviewed the pathologic features of invasive carcinoma of breast and found significant association between short term recurrences (2 years) and anaplastic tumour nuclei^{2,5}. This was observed in our study also. The association between rapid tumour growth and necrosis is well recognised and indicates a tumour of high malignant potential^{2,3,5,9}. Our results support this finding. Similarly tumour lymphatic and vascular invasion are also poor prognostic features^{2,3,5,9}. We noted a high early recurrence rate in such patients. Although the number of patients studied is small to draw a meaningful conclusion, we could conclude that all patients presenting with stage I breast cancer should be evaluated according to histopathological risk factors and after surgery; those with poor prognostic factors should receive adjuvant chemotherapy irrespective of age and menopausal status^{3,4,6,7,11}.

References

1. Malignant tumours - Report of multicenter study. Pakistan Medical Research Council, Islamabad, PMRC, Publication, 1982.
2. Belenger, D., Moor, M and Tanuok, I. How American Oncologists treat breast cancer? An assessment of the influence of clinical trials, J. Clin. Oncol., 1991 ;9:7-16.
3. Ca-Sawka, AM., O'Connor. H.A., Lewellyn. T. et al. Appropriateness of adjuvant systemic therapy for axillary node- negative breast cancer. A physician opinion survey. J. Clin. Oncol., 1995;13:1459-69.

4. Lo-Prinzi, C.L., Radvin. P.M., Delanrentis, M. et al. Do American Oncologists know how to use prognostic variables for patients with newly diagnosed primary breast cancer? J. Clin, Oncol., 1994; 12:1422-1426.
5. Fisher, B., Remond, C., Fisher, ER. et al. Relative worth of estrogen or progesteron receptor and pathologic characteristics of differentiation as indicator of prognosis in node negative breast cancer patients. Findings from Natural Surgical Adjuvant Breast and Bowel Project Protocol B-06. 3. Clin. Onco!.. 1988;6:1076-1 087.
6. Mc-Guire, W. and Glark, G. Prognostic factors and treatment decision in axillary node negative breast cancer. N. EngI. 3. Med., 1992;326: 1756-1761.
7. Mansour, E.G., Gray, R., Shatila, A.H. et al. Efficacy ofadjuvant chemotherapy in high risk node negative breastcancer. An inter-group study. N. Engi. J. Med., 1989;320:485-490.
8. Anderson. D.F. Some characteristics of functional breast cancer. Cancer, 1971 ;23 :1500-1504.
9. Thomas, W. Blander, Devis,O. Ceal!aigh et al. Prognostic factors in patients with stage I Estrogen Receptor negative carcinoma of breast. Cancer, 1983;52:1423-1431.
10. De-La Roche, A., Asselain, B., Campana, F. et al. Age as a prognostic factor in premenopausal breast carcinoma. Lancet, 1993;341 :1039-1043.
11. Early breast cancer trialists collaborative group: Systemic treatment of early breast cancer by hormtonal, cytotoxic or immunotherapy. Lancet, 1992;339: 1-15.
12. Macklin, MT. Comparison of the number of breast cancer deaths observed in relatives of breast cancer patients and the number expected on the basis of mortality rates. J.Natl. Cancer Inst., 1959;22:927-951.