Original Article

Triple negative breast cancer – Our experience

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Abstract

Triple negative Breast cancer constitutes 10-25% of patients with Breast cancer. TNBC is an aggressive phenotype and has poor prognosis. We restrospectively analysed 30 triple negative Breast cancer patients attending our out patients department among 200 Breast cancer Patients. The incidence of TNBC was 15% and most of them were post menopausal 73.33% (22/30) with mean age was 54.96 (Range 98-74 years) Most of them had Invasive ductal cancer 100% (30/30) and were high grade 3 (86.66%) (26/30). 2 patients (6.66%) presented with metastatic disease. one patient with lung metastasis and one patient with locally advanced disease with fungating mass over Breast and liver metastasis. 15 patients (50%)developed Recurrence and Distant metastasis on follow up. 2 patients had chest wall Recurrence, 1 had chest wall recurrence with lung metastasis,4 had Bone metastasis, 1 had lung metastasis, 1 had lung metastasis with contralateral breast cancer, 1 had liver mestastasis with contralateral Breast Cancer, 1 had lung with Bone and Brain metastasis, 1 had lung with liver, Brain and adrenal metastasis, and 1 had chest wall recurrence with supraclavicular lymph node reccurence with Bone metastasis, 1 had chest wall recurrence with supraclavicular lymph node recurrence with lung and Bone metastasis, 1 had supraclavicular lymph node recurrence. The mean disease free survival was 19.8 months (range 3-52 months) and overall survival was 27.3 months (range 9-98 months). 4 patients (13.33%) died during follow up. Hence Triple Negative Breast cancer is aggressive with rapid progression leading to mortality in younger patients.

Keywords: Breast Cancer, Chest wall Recurrence, invasive ductal cancer, Supraclavicular lymph mode recurrence, Triple Negative Breast Cancer.

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INTRODUCTION

With development of various technologies, and with collaboration of pathology and genetics, breast cancer is now considered as a heterogeneous disease with different morphological features and clinical behaviour. Hence, nowadays Immunohistochemistry, microarray techniques and cytogenetics are necessary for exact diagnosis, better prognostication and for application of newer modalities of treatment. Perou, Surlie *et al*. classified breast cancer into 5 intrinsic subtypes based on cDNA (complementary DNA) microarray studies: Luminal A, Luminal B, Normal breast like, Her2 and basal like breast cancer[1–4]. But there is no standard classification of these subtypes and newer subtypes are been described recently[5]. These classifications are based on considering that there are two types of epithelial cells in human mammary gland-luminal and basal (and/or myoepithelial) cells. These two cell types can be distinguished immunohistochemistrically that luminal cells express ER, PR receptors and they are positive for keratins 8/18, whereas basal cells are positive for keratins 5/6, and 17[6,7].s there is no internationally accepted definition for basal like cancer, the terms “basal like cancer” and “triple negative cancer” have been used interchangeably by many authors. However, they are not synonymous? Approximately 75% of basal like cancers are triple negative but 25% of them may express Her2 or hormone receptors and similarly around 70–75% of tripe negative cancers are basal like cancers[8]. To better understand this concept triple negative is a phenotype which can include basal like cancers, claudin low cancers, normal breast like tumours and BRCA 1 deficient breast tumours. Basal like cancer is more like a genotype where genetic microarray techniques had been used to better characterise them.

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Triple negative cancers are defined as tumours that lack ER, PR and HER 2 expression and account for 10–25% of all breast carcinomas[9–11]. Apart from invasive ductal carcinoma, medullary, metaplastic, secretory, pleomorphic lobular carcinomas, adenoid cystic carcinomas etc., also belong to triple negative tumours. The main characteristics of triple negative breast cancers are they are frequent in younger women (<50 years), more frequent in African- American women, present as interval cancers, highly chemosensitive[12,13], weak association between tumour size and lymph node metastases, more aggressive, higher chance of brain metastases, high chance of recurrence during 1st and 3rd year and shorter survival following first metastatic event when compared to other subtypes. Here we are presenting a retrospective analysis of 50 patients of triple negative cancers and there clinicopathological features.

MATERIALS AND METHOD

We Retrospectively analysed 30 patients who were triple Negative of 200 Breast Cancer patients who had attended our outpatient department. The incidence of Triple Negative Cancer was 15% (30/200). The mean age at presentation was 54.96 years with a range from 38-74 years. Out of 30 patients 22 patients were postmenopausal and 8 patients (26.66%) were premenopausal. There was no family history of Breast Cancer in any patient. 27 patients (90%) had under gone Modified Radical Mastectomy at the time of presentation. 1 patient (0.33%) had undergone Breast Conservative surgery at the time of presentation. 2 patients (6.66%) presented with rnetastatic disease. The patient which presented with lung metastasis received 6 cycles of paclitaxel and carboplatin followed by cap capecitabine for 4 cycles. Then he developed Bone metastasis for which he received palliative RT to Bony metastasis (D2-D5 Spine) 8Gy single fraction with inj zolendronic acid 4 mg monthly but developed Brain metastasis in April – 2016 for which patients received WBRT 30Gy for 10 fractions. Now patient is on follow up. The patient which presented with Liver metastasis and locally advanced Breast Cancer received 12 cycles weekly Paclitaxel. Liver metastasis resolved and palliative RT to Breast 30 Gy for 10 fractions was given. Patient is now on follow up. 5 more patients received NACT followed by surgery and adjuvant chemotherapy and radiotherapy. 15 patients developed Recurrence of which 2 patients had chest wall recurrence for which chemotherapy started. 1 patient had chest wall Recurrence with lung metastasis for which palliative Radiotherapy Given and are on follow up with monthly injection Zolendronic acid.1 patient had lung metastasis but died after 1 month of metastasis. 1 patient had contralateral Breast Cancer for which MRM was done and then after 6 months developed lung metastasis and is now on chemotherapy. 1 patient had liver metastasis with contralateral breast cancer and is now on chemotherapy. One patient had lung metastasis for which chemotherapy was given then developed Bone metastasis after 1 year for which palliative Radiotherapy Was given then Patient developed Brain metastasis for which WBRT given and the patient is now on follow up. 1 Patient had diagnosed with lung, liver, Brain and adrenal metastasis simultaneously on CT- Scan for which WBRT given and is now on chemotherapy. 1 Patient had lung metastasis for which chemotherapy was given then the patient developed local recurrence with supraclavicular lymph node after 20 months for which again chemotherapy and palliative RT to SCF was given. Then patient developed bone metastasis after one year for which palliative RT was given. Now patient is on follow up with palliative chemotherapy. 1 Patient developed supraclavicular recurrence after MRM for which chemotherapy was given and then radiation was given and now pt is on follow up. 1 patient had developed supaclavicular lymph node with bony metastasis for which chemotherapy and palliative RT given and patient died after 9 months. 2 Patients died for unknown cause after completion of chemotherapy and Radiotherapy without any metastasis after 14 and 23 months of treatment respectively.

Table 1: Characteristics of patients

Characteristics	No. of patients (total N=30)
Post menopausal	22(73.33%)
Pre menopausal	8(26.66%)
Age	
Mean	54.96
Range	38-74 years
Clinical presentation	
Lump	7(23.33%)
Ulcer	7(23.33%)
Post surgery (MRM + BCT)	23(76.66%)
Histology	
Invasive ductal	30(100%)

Lobular	0
Medullary	0
Grade	
1	0
2	4(13.33%)
3	26(86.66%)
Stage at presentation	
Early	0
Locally advanced	5(16.66%)
Post surgery	23(76.66%)
Metastatic	2(6.6%)
Neoadjuvant chemotherapy	7(23.33%)
Surgery performed	
Breast conservation surgery	1(1.1%)
Modified radical mastectomy	27(90%)
No surgery	2(6.6%)
Recurrence	15(50%)
Chest wall recurrence	4(13.33%)
Supraclavicular lymph node recurrence	3(10%)
Bone metastasis	7(23.3%)
Brain	2(6.66%)
Lung	5(16.66%)
Contralateral breast	2(6.6%)
Liver	3(10%)
Adrenal	1(1.1%)
Disease free survival	
Mean	19.8
Range	3-52months
Overall survival	
Mean	27.3
Range	9-98months

Table 2: Clinicopathological characteristics of patients who developed recurrence

Sr. No	Age (years)	Menopausal Status	Treatment Given	Histology, grade	Adjuvant treatment	recurrence	DFS (months)	OS (months)
1	45	Post	NACT->MRM	IDC,3	CT+RT	SCLN	3	14
2	48	Pre	BCT	IDC,3	CT+RT	LUNG	16	20
3	63	Post	NACT->MRM	IDC,2	CT+RT	LR	5	27
4	60	Post	MRM	IDC,3	CT+RT	Contraleral breast+liver	19	22
5	39	Pre	MRM	IDC,3	CT+RT	Bone	24	39
6	38	Pre	MRM	IDC,3	CT+RT	LR	16	18
7	65	Post	NACT->MRM	IDC,3	CT+RT	Lung+liver+brain+adrenal	15	16
8	45	Pre	MRM	IDC,3	CT+RT	SCLN+BONE	7	16 (Expired)
9	65	Post	MRM	IDC,3	CT+RT	Bone	23	28
10	55	Post	NACT->MRM	IDC,3	CT+RT	Bone	9	20
11	50	Post	MRM	IDC,3	CT+RT	Lung	12	13 (Expired)
12	65	Post	MRM	IDC,3	CT+RT	Contralateral breast+lung	36	48
13	60	Post	MRM	IDC,3	CT+RT	Bone	40	84
14	67	Post	MRM	IDC,3	CT+RT	Liver	21	23
15	55	Post	MRM	IDC,3	CT+RT	Lung+Bone+SCLN+LR	52	98

CONCLUSION

Triple negative breast cancer occurs in younger patients, they are high grade, have aggressive behavior and should be considerd as a prognostic factor in patients with breast cancer. Most of the recurrences occur early within first 3 years of surgery and they progress rapidly. The metastasis of TNBC had obvious organic tendency. The information of age, the maximum diameter of the tumour, lymph node status, clinical stage, histological grade, pathological types, and operation method, especially the age and lymph node status played the important roles in judging the prognosis of TNBC patients. lacking of expression of ER, PR and HER2 so it cannot be benefit from endocrine therapy and molecular targeted treatments for HER2. In the future, we should focus on understanding the molecular biology characteristics of TNBC, elucidating its mechanism at the molecule level, deciphering the gene expression profiles of TNBC and researching and developing new therapeutics targets. Try to find targeted and effective therapies to improve the prognosis of patients with TNBC.

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