

Audit of Pregnancy Associated Breast Cancer at PINUM Cancer Hospital

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ABSTRACT

Objective: To perform audit of patients presenting with pregnancy associated breast cancer (PABC) in terms of initial stage, grade, histology, disease course and outcome. **Study Design:** Retrospective, non-interventional study. **Settings:** Oncology Department of PINUM Cancer Hospital, Faisalabad Pakistan. **Duration:** Two years from January 2017 to December 2018. **Methods:** All breast cancer patients presenting during pregnancy and within one year after delivery registered in oncology department of hospital were included in this study. After Complete clinical examination and diagnostic workup patients were treated according to national comprehensive cancer network guidelines (NCCN). Data of all these patients was collected and recorded in predesigned Performa. **Results:** Data of pregnancy associated breast cancer from January 2017 to December 2018 collected and analyzed. Total number of breast cancer patients in this period were 775. Among these pregnancies associated breast cancer patients were 13 (1.6%). Average age of these patient was 27 (23-28) years, Gravida-2 (1-3). In 90% no risk factor was found and only 1 (8%) received hormonal therapy for infertility. 1 (8%) patient presented after lumpectomy and modified radical mastectomy each, 6 (46%) with fungating /ulcerating growth and 5 (38 %) with recurrence after primary surgical intervention. Stage wise 8 (62%) in Stage III, 2 (15%) stage II & 3 (23%) Stage IV. Adjuvant chemotherapy given in 4 (31%) and neoadjuvant in 9(69%), prognosis wise 7(54%) are alive and (5)38% expired and (1)8% left the follow up. Among alive patients (4)57%are disease free, (3)43% are in follow-up with bone metastasis, receiving treatment. **Conclusion:** PBAC is usually not diagnosed at earlier stage due to physiological changes occur during pregnancy. Patients are reluctant to undergo treatment due to fear of abortion/termination of pregnancy and fear of fetal outcome. Treatment of PBAC needs multidisciplinary approach including gynecologist, oncologist and surgeon.

Keywords: Pregnancy associated breast cancer (PABC), National comprehensive cancer network (NCCN).

INTRODUCTION

The most common type of breast cancer among women. It accounts 24% of all female cancers in the world and about 40% in Pakistan.

Pregnancy associated breast cancer (PABC) is defined as breast cancer occurring in pregnancy or in year after delivery and during breast feeding. Among 3000 pregnant women 1 woman (1: 3000) can be diagnosed with breast cancer.^{3,5,6}

Frequency of breast cancer in pregnancy is increasing, and reasons for increased incidence are delaying of 1st

baby in late ages because of late marriages, higher education, professional preference, increasing incidence of cancer with age, increasing number of premenopausal women diagnosed with breast cancer, better detection and increasing awareness.^{2,3,5-8}

There is limited data on treatment of pregnant women with breast cancer with chemotherapy and even less data on the outcomes of children exposed to chemotherapy in utero. There are similar treatment guideline for treatment of breast cancer in pregnant as well as for non-pregnant women. But there are few modifications to protect the fetus. Surgery is proved to be safe in all stages of

pregnancy, but chemotherapy is delayed till first trimester, and radiation should be delayed until after delivery. Pregnancy termination does not affect maternal prognosis.^{5-8,12}

NCCN Treatment Guidelines¹²

Trimester	Primary Treatment	Adjuvant Treatment
First	Mastectomy + Axillary staging	Adjuvant chemotherapy can begin in second trimester
Second/ early third	Mastectomy or Breast conserving surgery + Axillary staging or Neoadjuvant chemotherapy + mastectomy or Breast conserving surgery + Axillary staging post-partum	Adjuvant chemotherapy ± adjuvant radiotherapy and /or endocrine therapy post-partum
Third	Mastectomy or Breast conserving surgery + Axillary staging	Adjuvant chemotherapy ± adjuvant radiotherapy and /or endocrine therapy post-partum

METHODS

This was a retrospective, non-interventional study conducted in Oncology Department of PINUM Cancer Hospital, Faisalabad Pakistan for the period of two years from January 2017 to December 2018.

All cases of pregnancy associated breast cancer were included. There was no exclusion or inclusion criteria.

All the patients underwent proper clinical examination at presentation. All patients were diagnosed on core biopsy and histopathology. Receipt or status (Estrogen, progesterone and HER-2-neu) were done. Bilateral breast sonography, abdomen and pelvic ultrasound, echocardiography and biochemical profile were done. Those who presented after delivery, bone scan and CT chest and abdomen were also included in the workup. After work up each patient was treated according to standard guidelines.¹² Pregnant patients had routine obstetrical checkup with concerned gynecologist.

Complete data was collected in predesigned Performa and analyzed.^{5,7,8,11,12}

RESULTS

Figure 1: Metastatic stages of patients

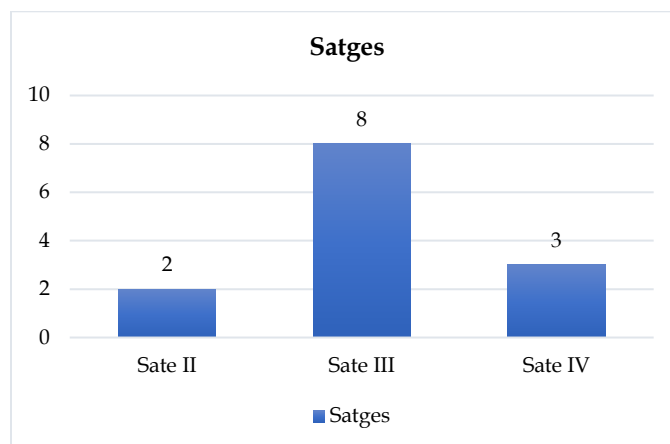


Figure 2: Receptors

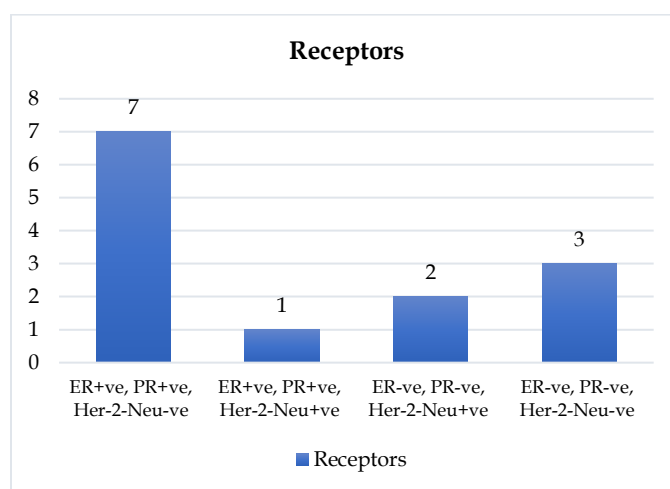


Figure 3: Histology

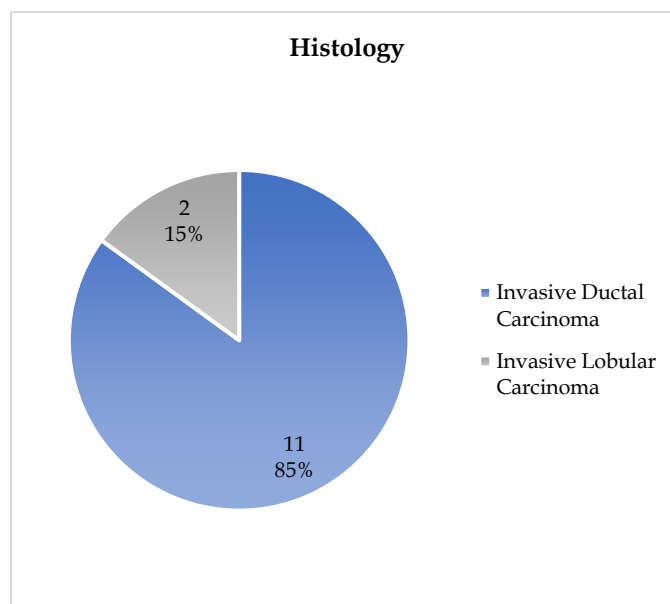
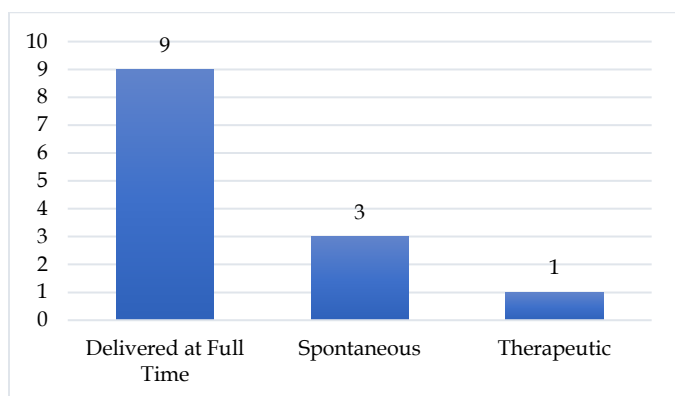


Table 1: Clinical features of patients

Stage	Stage III 62% (8) Stage IV 23% (3) Bone metastases in 2 One with liver and lung metastases Stage II 15% (2)
Histopathology	Invasive ductal carcinoma: 11 (85%) Invasive lobular carcinoma: 2(15%)
Grade	Grade III in 85% (11) Grade II in 15% (2)
Receptor	ER+, PR+, Her-2-neu -: 54% (7), ER+, PR+, Her-2-neu+: 8% (1), ER-, PR-, Her-2-neu+: 15% (2), Triple -ve: 23%

Treatment Surgery	MRM after delivery
Chemotherapy	Adjuvant Chemotherapy 31% (4), Neoadjuvant 69% (9) FAC
	Radiotherapy and Hormonal therapy after delivery

Figure 4: Stages of cancer**Table 2: Outcome of patients**

Outcome of pregnancy	69 % (9) delivered at full term 31% (4) underwent abortion 3 spontaneous, 1 therapeutic.
Infants	One expired due to cord around neck few hours after delivery. One deceased due to pneumonia after 9 weeks 7 babies (five male and 4 female) are alive and healthy
Follow up	54 % (7) are alive 38% (5) are expired 3 with brain metastases 1 with liver metastases 1 with liver and lung metastases 8% (1) left the follow up Among 7 alive 57% (4) are disease free 43% (3) are in follow up with bone metastases, receiving treatment

DISCUSSION

During pregnancy breast cancer is usually not diagnosed at earlier stages. As under the influence of increased Estrogen, Progesterone and Prolactin breast becomes large, engorged and slightly tender so breast lump is noticed when it becomes enlarged. It is usually mistaken as normal physiological changes during pregnancy.³ Even when female complains of lump during pregnancy, some of the untrained health workers, nurses and even female physicians advise her to leave it till delivery. This makes the situation worse.^{3,5}

Pregnancy associated breast cancer is neither diagnosed nor treated properly, one factor being a difficult radiological diagnosis due to pregnancy-induced breast changes. Also, young women are not potential candidates for screening test and patients reluctant to biopsy during pregnancy.

The belief in the need for termination of pregnancy and that chemotherapy is contra-indicated during pregnancy and fear of fetal outcome are also contributing factors for mismanagement of pregnancy associated breast cancer. Though fetal out come after in-utero exposure to chemotherapy appears similar to that in a non-pregnant population.^{3,5,6}

There should be Workshops/seminars for lady health workers, female general physicians and women of reproductive age about PABC. Women should be educated and encouraged to self-breast examinations on monthly basis in pregnancy. During antenatal care breast examination should be mandatory and if there is any abnormality in breast, proper investigation should be done rather than delaying this after delivery.³

The misconception of primary physician that breast cancer during pregnancy is untreatable, needs to be changed to reduce the mortality in pregnancy associated breast cancer patients.

CONCLUSION

In this study most of the patients presented in locally advanced disease due to lack of awareness of patients as well as their primary physician signs of breast cancer taken as pregnancy related changes or complication due to lactation. In certain cases, management deferred till delivery resultantly patient present either with locally advanced disease or metastasis and outcome of treatment was poor, either recurrence/metastasis/death. As treatment of cancer needs multidisciplinary approach, Pregnancy associated breast cancer also needs good lay zone between gynecologist/surgeon/oncologist.

LIMITATIONS

This was a retrospective and single Centre based study.

SUGGESTIONS / RECOMMENDATIONS

- In antenatal clinics, doctor should Perform a clinical breast examination at first visit and interval examinations depending on signs and postpartum visits.
- Query regarding family history of breast cancer.
- Investigate changes in breast at each pre-natal visit.
- For suspicious breast masses, include PABC in differential diagnoses.
- during pregnancy and lactation use mammography, ultrasound and biopsy for definitive diagnosis
- Do not delay evaluation and treatment of breast lump in pregnancy and lactation

CONFLICT OF INTEREST / DISCLOSURE

No conflict of interest is involved.

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