

Pregnancy Associated Breast Cancer

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Pregnancy-associated breast cancer (PABC) is defined as breast cancer diagnosed during pregnancy or within one year postpartum. The aim of this editorial is to emphasize the early detection of PABC, including PABC in the differential diagnosis while investigating a breast mass in the perinatal period and managing it appropriately. Breast cancer is the most frequently diagnosed malignancy in women as well as most common malignancy among female patients of reproductive age group.¹ Every year around 11% breast carcinomas are projected to be diagnosed in women under the age of 45 with a higher reported incidence in developing countries.² It is estimated that between 1 in 3000 and 1 in 10,000 pregnancies, can become problematic by the diagnosis of breast cancer.³ Breast cancer during pregnancy (BCP) is a rare condition and its incidence ranges between 2.4 and 7.3 per 100,000 pregnancies.⁴ There are indications that the incidence of breast cancer in young women and the occurrence of BCP is increasing.⁵ Current trend of postponing pregnancy to later in life is also likely to increase the incidence of pregnancy associated breast cancer in future.⁶

Breast cancer presenting at a young age is linked with distinctive biologic features and pregnancy may add complexity to it.⁷ The hormonal environment associated with pregnancy can lead to a more aggressive biology of breast cancer.⁸ Several studies have documented unfavorable tumor biology like predominance of triple-negative breast carcinomas (TNBC) in pregnancy associated breast tumors.⁹ In a meta-analysis by Azim and colleagues it was shown that PABC patients had a significantly higher risk of death as compared to women with non-pregnancy associated breast cancer. Patients with breast cancer diagnosed in the immediate postpartum period exhibited inferior

outcomes when compared to those diagnosed while pregnant.¹⁰ PABC also had higher risk of death when controlled for stage and hormone receptor status. The distinctive biologic features of BCP and delay in diagnosis are associated with advanced stage at presentation leading to poor prognosis.

Pregnancy associated breast cancers mostly present as a palpable mass. It is a common observation that lumps are wrongly treated as mastitis by doctors in lactating women, thus delaying the diagnosis of breast cancer. Physicians should be mindful about the possibility of cancer diagnosis in a pregnant woman and ask for imaging and pathological examination without delay.¹¹ Decisions on clinical management of PABC are mostly individualized but in recent years guidelines have been developed to deal with pregnant breast cancer patients.^{5,11} A multidisciplinary team (i.e. medical oncologist, surgical oncologist, psychologist, genetic specialist, obstetrician, neonatologist and pediatrician) should be managing a patient of PABC.¹² Major international guidelines advocate the management of BCP in institutions with experienced teams to deal with such patients.¹¹ Core biopsy is the gold standard for PABC and BCP however the pathologist should know about the pregnancy and lactation status.^{5,11} Ultrasound Breast has been noted to be 100% accurate in detecting a mass in patients with PABC and identifies any concerning features. Mammography with abdominal shielding can be safely and successfully done in pregnant patients whereas contrast-enhanced breast magnetic resonance imaging (MRI) which is not recommended for BCP.^{5,11} Ultrasound is the favored imaging modality for staging the abdomen and pelvis and chest X-ray with abdominal shielding for staging the chest.¹¹ MRI without gadolinium can be considered when there is suspicion of bone or brain metastases

or other imaging modalities are inconclusive.¹¹ Computed tomography, bone scan and positron emission tomography should not be ordered during pregnancy.^{5,11}

Surgery is safe during all trimesters of pregnancy and surgical approach is same for both pregnant and non-pregnant women.^{5,11} Mastectomy is not compulsory in patients of BCP on the basis of possible delay in the delivery of radiotherapy. However, patients diagnosed in the first trimester who desire to conserve the breast should be informed that a possible increased risk of local recurrence due to the long delay in postoperative radiotherapy cannot be ruled out.¹³ Radiation therapy is contraindicated in pregnancy, due to an amplified risk of fetal malformations and delays in neurocognitive progress. American Society of Clinical Oncology (ASCO) does not recommend sentinel lymph node biopsy (SLNB) in patients with BCP.¹⁴ Evidence supports the safety of lymphoscintigraphy with technetium-99 for SLNB in pregnancy.¹⁵ Therefore, guidelines for patients with BCP suggest that SLNB rather than axillary clearance can be offered where feasible.^{5,11} Blue dye should be avoided due to risk of rare but detrimental anaphylactic reaction. Immediate breast reconstruction should be offered in cases where mastectomy is planned except cases of inflammatory carcinoma breast.¹⁶ Chemotherapy as adjuvant treatment is beneficial in patients with high-risk breast cancer though; chemotherapy agents are contraindicated in the first trimester of pregnancy and after 34 weeks of pregnancy. Anti-her2 therapy and Endocrine therapy can be given only after delivery.

Panel of the Second International Consensus Conference on Breast Cancer in Young Women (BCY2) recommends genetic counselling for every young breast cancer patient, more so if there is a family history of breast carcinoma or a diagnosis of TNBC.¹⁶ The probability of detecting BRCA mutations in patients with TNBC is around 20%.¹⁷ BRCA carrier status has a direct influence on breast cancer management in executing both local and systemic treatment. The management of PABC signifies an exceptional task for the treating physicians, her caregivers as well as the patient and often raises several religious, moral or social issues.

Abortion does not improve patients' prognosis in BCP so it is essential to manage appropriately following existing guidelines for the diagnosis, staging and treatment.^{5,11}

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