

Cancer Association of South Africa (CANSA)



Fact Sheet on Breast Cancer, Pregnancy and Breastfeeding

Introduction

To have breast cancer diagnosed during pregnancy is very rare. As more and more women choose to have children later in life, and the risk of breast cancer increases with age, doctors expect there will be more cases of breast cancer during pregnancy in the future.

In the United States of America, breast cancer is diagnosed in about one in every 3 000 pregnant women. Breast cancer is, however, the most common type of cancer found during pregnancy or while breastfeeding, immediately or within the first year after delivery.

[Picture Credit: Breastfeeding]



'Pregnancy-associated breast cancer' means the cancer is diagnosed while a woman is pregnant or during the first year after pregnancy. Women diagnosed with pregnancy-associated breast cancer were more likely to have later-stage breast cancer compared to the other women. This may be because pregnancy may make it harder to detect breast cancer symptoms. Pregnancy also may cause women to wait to get a mammogram.

Most women are able to carry on with their pregnancy. Rarely, some may need to think about whether to end the pregnancy (termination). But usually this is only necessary if one needs chemotherapy and are less than 14 weeks pregnant. Usually it is possible to delay chemotherapy treatment until after one has reached the 14 weeks stage of pregnancy.

In a pooled analysis of data from 47 studies, mothers who breastfed for a lifetime total of one year were slightly less likely to get breast cancer than those who never breastfed.



[Picture Credit: Benefits of Breastfeeding]

PDQ Adult Treatment Editorial Board. 2019.

“Overall survival of pregnant women with breast cancer may be worse than survival of nonpregnant women at all stages; however, this may be primarily the result of delayed diagnosis. Termination of pregnancy has not been shown to have any beneficial effect on breast cancer outcome and is not usually considered as a therapeutic option.”

Breast Cancer Diagnosis During Pregnancy

Women who are pregnant, nursing, or have just given birth usually have tender, swollen breasts. This can make small lumps difficult to detect and may lead to delays in diagnosing breast cancer. Because of these delays, cancers are often found at a later stage in these women.

To detect breast cancer, pregnant and nursing women should examine their breasts themselves. Women should also receive clinical breast examinations during their routine prenatal and postnatal examinations.

The following signs may be caused by breast cancer or by other conditions. Check with a health professional if any of the following are detected:

- A lump or thickening in or near the breast or in the underarm area
- A change in the size or shape of the breast
- A dimple or puckering in the skin of the breast
- A nipple turned inward into the breast
- Fluid, other than breast milk, from the nipple, especially if it is bloody
- Scaly, red, or swollen skin on the breast, nipple, or areola (the dark area of skin that is around the nipple)
- Dimples in the breast that looks like the skin of an orange, called *peau d'orange*.

A doctor should be seen if any changes in the breasts are noticed.

Soto-Trujillo, D., Santos Aragón, L.N. & Kimura, Y. 2020.

“Pregnancy-associated breast cancer (PABC) is defined as breast cancer diagnosed during pregnancy, in the first year postpartum, or during breastfeeding. Imaging techniques play a significant role in the diagnosis of PABC. It is a challenging diagnosis since physiological changes seen in pregnancy and breastfeeding may limit clinical suspicion and imaging utility. The patient's well-being and the fetus must be taken into consideration for diagnosis and treatment.”

Paris, I., Di Giorgio, D., Carbognin, L., Corrado, G., Garganese, G., Franceschini, G., Sanchez, A.M., De Vincenzo, R.P., Accetta, C., Terribile, D.A., Magno, S., Di Leone, A., Bove, S., Masetti, R. & Scambia, G. 2020.

“The diagnosis of breast cancer (BC) during pregnancy is uncommon. It has varied among different studies from 1:10,000 to 1:3000 of all pregnancies, with a median age of 33 years. Pregnancy-associated BC represents a challenge in terms of clinical management to guarantee both maternal and fetal security in choosing the right treatment. This situation is complex and requires a multidisciplinary approach, including the surgeon, anesthesiologist, oncologist, radiotherapist, psychologist, and maternal-fetal medicine specialist. In the present review, we examined the management of pregnancy-associated BC, focusing on pathophysiologic background, risk factors, diagnosis, staging procedures, anesthesia, surgical management, and systemic treatment.”

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Allouch, S., Gupta, I., Malik, S., Al Farsi, H.F., Vranic, S. & Al Moustafa, A.E. 2020.

“Breast and cervical cancers comprise 50% of all cancers during pregnancy. In particular, gestational breast cancer is considered one of the most aggressive types of cancers, which is a rare but fatal disease. However, the incidence of this type of cancer is increasing over the years and its prevalence is expected to rise further as more women delay childbearing. Breast cancer occurring after pregnancy is generally triple negative with specific characterizations of a poorer prognosis and outcome. On the other hand, it has been pointed out that this cancer is associated with a specific group of genes which can be used as precise targets to manage this deadly disease. Indeed, combination therapies consisting of gene-based agents with other cancer therapeutics is presently under consideration. We herein review recent progress in understanding the development of breast cancer during pregnancy and their unique subtype of triple negative which is the hallmark of this type of breast cancer.”

Breast Cancer Treatment During Pregnancy

Breast cancer treatment options for early/localised/ operable breast cancer and advanced stage breast cancer:

PDQ Adult Treatment Editorial Board. 2019.

“Generally, pregnant women with stage I or stage II breast cancer are treated in the same way as nonpregnant patients, with some modifications to protect the fetus.

“Treatment options for early/localized/operable breast cancer in pregnant women include the following:

“Surgery – postpartum radiation therapy may also be given to women diagnosed with breast cancer late in pregnancy.

Chemotherapy – after the first trimester

Endocrine therapy – after delivery.

“The use of trastuzumab during pregnancy is contraindicated.

“There is no standard treatment for patients with advanced (stage III or stage IV) breast cancer during pregnancy. Most studies show a 5-year survival rate of 10% in pregnant patients with stage III or IV disease.

“First-trimester radiation therapy should be avoided. Chemotherapy may be given after the first trimester as discussed in the section above.

“Because the mother's life span may be limited, and there is a risk of fetal damage with treatment during the first trimester,^[1,2] issues regarding continuation of the pregnancy should be discussed with the patient and her family. Therapeutic abortion does not improve prognosis.”

Poggio, F., Tagliamento, M., Pirrone, C., Soldato, D., Conte, B., Molinelli, C., Cosso, M., Fregatti, P., Del Mastro, L. & Lambertini, M. 2020.

“The diagnosis of breast cancer during pregnancy represents a challenging situation for the patient, her caregivers and physicians. Pregnancy adds complexity to oncological treatment planning, as many therapies can be potentially dangerous to the fetus. Therefore, a multidisciplinary approach is needed to offer a proper care for obtaining the best possible outcomes for the mother and the

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future child. Breast surgery is feasible throughout the pregnancy while radiotherapy should be postponed after delivery. Administration of chemotherapy is considered safe and can be given during the second and third trimesters, while it is contraindicated in the first trimester due to the high risk of fetal malformations. Endocrine therapy and targeted agents are not recommended during the whole pregnancy period; however, limited data are available on the use of the majority of new anticancer drugs in this context. The aim of the current review is to provide an update on the current state of art about the management of women diagnosed with breast cancer during pregnancy.”

Shao, C., Yu, Z., Xiao, J., Liu, L., Hong, F., Zhang, Y. & Jia, H. 2020.

Background: Pregnancy-associated breast cancer (PABC) is defined as breast cancer that is diagnosed during pregnancy and/or the postpartum period. Definitions of the duration of the postpartum period have been controversial, and this variability may lead to diverse results regarding prognosis. Moreover, evidence on the dose-response association between the time from the last pregnancy to breast cancer diagnosis and overall mortality has not been synthesized.

Methods: We systematically searched PubMed, Embase, and the Cochrane Library for observational studies on the prognosis of PABC published up to June 1, 2019. We estimated summary-adjusted hazard ratios (HRs) and the corresponding 95% confidence intervals (CIs). Subgroup analyses based on diagnosis time, PABC definition, geographic region, year of publication and estimation procedure for HR were performed. Additionally, dose-response analysis was conducted by using the variance weighted least-squares regression (VWLS) trend estimation.

Results: A total of 54 articles (76 studies) were included in our study. PABC was associated with poor prognosis for overall survival (OS), disease-free survival (DFS) and cause-specific survival (CSS), and the pooled HRs with 95% CIs were 1.45 (1.30-1.63), 1.39 (1.25-1.54) and 1.40 (1.17-1.68), respectively. The corresponding reference category was non-PABC patients. According to subgroup analyses, the varied definition of PABC led to diverse results. The dose-response analysis indicated a nonlinear association between the time from the last delivery to breast cancer diagnosis and the HR of overall mortality ($P < 0.001$). Compared to nulliparous women, the mortality was almost 60% higher in women with PABC diagnosed at 12 months after the last delivery (HR = 1.59, 95% CI 1.30-1.82), and the mortality was not significantly different at 70 months after the last delivery (HR = 1.14, 95% CI 0.99-1.25). This finding suggests that the definition of PABC should be extended to include patients diagnosed up to approximately 6 years postpartum (70 months after the last delivery) to capture the increased risk.

Conclusion: This meta-analysis suggests that PABC is associated with poor prognosis, and the definition of PABC should be extended to include patients diagnosed up to approximately 6 years postpartum.

What the Research Says About Breast Cancer and Other Cancers Diagnosis During Pregnancy

It is possible to be diagnosed with breast cancer during pregnancy, although it is rare. Breast cancer is not caused by the pregnancy. Women who are diagnosed with breast cancer during pregnancy have tremendous additional strain due to concern for the safety of the unborn child. It can be a traumatic and extremely difficult situation, but there is hope for both mother and child, thanks to the many treatment options available.

If one is pregnant and has been diagnosed with breast cancer, be sure to communicate carefully with the obstetric care team as well as the oncology team, and it never hurts to verify whether they

have open communication with each other. The medical team will take extra care in designing a treatment plan that best controls the breast cancer while protecting the unborn child.

Eastwood-Wilshere, N., Turner, J., Oliveira, N. & Morton, A. 2019.

Cancer in pregnancy may be increasing in incidence with advancing maternal age and higher rates of obesity. The diagnosis of cancer in pregnancy provokes complex management issues balancing short- and long-term risks for both mother and baby. Every case needs to be individualized, with a multidisciplinary team of midwives, obstetricians, oncologists, surgeons, radiation oncologists, and neonatologists assisting the family to make informed decisions regarding the best treatment course for the mother and baby. The present article reviews the evidence regarding the safety of diagnostic imaging, procedures and treatment modalities for cancer for the pregnant woman and fetus. The efficacy of novel anticancer therapies highlight the need for International Registries to accumulate safety data for these agents in pregnancy as expeditiously as possible.

Perrone, A.M., Bovicelli, A., D'Andrilli, G., Borghese, G., Giordano, A. & De Iaco, P. 2019.

Cervical cancer is one of the most common gynecological malignancies diagnosed during pregnancy although, fortunately, it is a rare event. In majority of cases, the management of cervical cancer in pregnant women is not different from nonpregnant women and prognosis seems not compromised by pregnancy. The association between cancer and pregnancy appears to be a significant challenge for women and specialists and the decisions about therapy must be individualized and taken by a multidisciplinary team. This review is focused on cervical cancer in pregnancy. The aim is to discuss the diagnosis, potential biomarkers and molecular aspects, therapeutic approaches, and prognosis from intraepithelial cervical neoplasia to invasive cervical cancer (early and advanced stages) in different gestational ages. We provide an overview of the current literature regarding the treatment strategies of concurrent pregnancy and cervical cancer cases and we propose some clinical advices to help clinicians to manage this condition. A mention about the effects of the conservative therapy (as conization) on fertility, the human papillomavirus vaccine in pregnant women and our center's experience with obstetrical and oncological outcomes are reported.

Simoës, E., Graf, J., Sokolov, A.N., Grischke, E.M., Hartkopf, A.D., Hahn, M., Weiss, M., Abele, H., Seeger, H. & Brucker, S.Y. (2018):

“Pregnancy-associated breast cancer (PABC) is considered the second most common malignancy affecting pregnancy. They suggest that maternal medical assessment at the beginning of and during further course of pregnancy should include a scrutinized thorough breast examination. Conveying/delivering special competences to monitor these high-risk pregnancies at the interface of oncological care should be considered an obligatory part of academic medical education, obstetrical training and interprofessional midwifery education.”

Danet, C., Araujo, M., Bos-Thompson, M.A., Portolan, G., Gautier, S., Vanlemmens, L., Bonenfant, S., Jonville-Béra, A.P., Cottin, J., Vial, T., Bavoux, F., Monstastruc, J.L., Damase-Michel, C., Benevent, J., Bourgeois-Mondon, I. & Lacroix, I. (2018).

“There is little data on the effects of cancer chemotherapy in pregnant women. The objective of this study was to describe pregnancy outcomes of women exposed to cancer chemotherapy, recorded in the French Terappel database.

“We performed a descriptive, prospective study of the pregnancies of women exposed to cancer chemotherapy recorded in Terappel between June 1984 and December 2016. Terappel is a French database that has recorded questions of health professionals and/or individuals at the

Regional Pharmacovigilance Centres about drugs and pregnancy. For each question, pregnancies are monitored and the outcome is recorded in the database.

“In total, 75 questions about "anti-cancer drugs and pregnancy" received by 16 Regional Pharmacovigilance Centres between 1997 and 2016 were recorded in Terappel. Breast cancer accounted for 62.7% of the cases, followed by leukaemia (13.3%) and lymphoma (9.3%). Cyclophosphamide is the leading anti-cancer drug with 40.0% of exposed pregnant women, followed by 5-fluorouracil (34.7%), epirubicin (32.0%), tamoxifen (26.7%), and doxorubicin (16.0%). Among the 75 pregnancies, we observed 55 births with 57 children (73.3%) (two cases of twins), nine medical terminations of pregnancy (12.0%), six voluntary terminations of pregnancy (8.0%), three intrauterine foetal deaths (4.0%), and two miscarriages (2.7%). We found a malformation rate of 7.8%. Sixteen of 57 (28.1%) newborns developed one or more neonatal pathologies.

“Pregnancy of women taking anti-cancer drugs resulted in birth in 73% of cases. Nevertheless, pregnant women exposed to cancer chemotherapy remains at risk of malformations and neonatal conditions related to prematurity and drugs.”

Breastfeeding During Cancer Treatment

Most health professionals recommend that women who have just had babies and are about to be treated for breast cancer should stop (or not start) breastfeeding.

If surgery is planned, stopping breastfeeding will help reduce blood flow to the breasts and make them smaller. This can help with any possible surgery. It also helps to reduce the risk of infection in the breast(s) and can help avoid having breast milk collect in biopsy or surgery areas.

Many chemotherapy, hormone therapy, and targeted therapy drugs can enter breast milk and be passed on to the baby. Breastfeeding is, therefore, not recommended if the mother is getting chemotherapy, hormone therapy, or targeted therapy.

If one undergoes radioactive isotope therapy or chemotherapy, however, one must stop breastfeeding at least until the radioactive elements or medications are completely gone from the body. One can still nurse if one is having radiation therapy, but having had radiation therapy, will usually limit milk production in the affected breast.

In the event of any questions, such as when it might be safe to start breastfeeding, be sure to talk with a health care professional.

Bhurosy, T., Niu, Z. & Heckman, C.J. 2020.

Background: Breastfeeding is the biologically normative mode of feeding human infants, and reduces the risk of breast cancer for mothers. This systematic review assesses engagement in breastfeeding and the factors associated with breastfeeding among breast cancer survivors.

Methods: An online literature search was performed using the PubMed, Embase, CINAHL, PsychInfo, and Web of Science databases. Inclusion criteria were original research articles written in English, published in peer-reviewed journals from 1 January 1990 to 25 November 2019, and included data on breast cancer survivors who attempted breastfeeding.

Results: Thirteen studies were included in the systematic review. Between 7.7 and 90.9% of women attempted breastfeeding. Breastfeeding among participants varied from a few weeks to

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approximately 2 years. Common factors leading to breastfeeding were use of the contralateral breast, support from others, lactation counseling and advice from an International Board-Certified Lactation Consultant, being motivated to breastfeed, frequent feedings, and use of galactagogues. Common barriers were medical counseling against breastfeeding, insufficient milk production, lack of support, refusal of the infant to breastfeed from the treated breast, and being tired from relying on one breast.

Conclusions: Breastfeeding from the unaffected breast is feasible for some breast cancer survivors. Successful breastfeeding may require multilevel support and expert advice.

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Breastfeeding Benefits

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Susan G Komen

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WebMD

<http://www.webmd.com/breast-cancer/guide/breast-cancer-during-pregnancy>