

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]

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.

Boere, I., Lok, C., Poortmans, P., Koppert, L., Painter, R., Vd Heuvel-Eibrink, M.M. & Amant, F. 2022.

“Although it is uncommon in general, breast cancer is the most commonly diagnosed cancer during pregnancy. While treatment for pregnant patients should adhere to treatment guidelines for non-pregnant patients, there exist specific considerations concerning diagnosis, staging, oncological treatment, and obstetrical care. Imaging and staging are preferably performed using breast ultrasound and mammography. Other ionizing radiation imaging modalities, including computed tomography (CT) and Positron Emission Tomography/ Computed Tomography (PET/CT), can be selectively performed when the estimated benefit for the mother outweighs the risks to the foetus, e.g., when the results will change clinical management. MRI is appropriate to stage for distant disease on the indication. Breast cancer during pregnancy is less often hormone receptor-positive and more frequently triple-negative breast cancer compared to age-matched controls. The basic principle is that women should receive state-of-the-art oncological treatment without delay if possible and that the pregnancy should be maintained as long as possible. Treatment strategy should be multidisciplinary defined, carefully weighing the selection, sequence, and timing of treatment modalities depending on patient-, tumour-, and pregnancy-related characteristics, as well as patient preferences. Initiating cancer treatment during pregnancy often decreases the risks of early delivery and prematurity. Breast cancer surgery is possible during all trimesters. Radiotherapy is possible during pregnancy in the first half of pregnancy. Chemotherapy can be safely administered starting from 12 weeks of gestational age, but endocrine and HER2 targeted therapy are contraindicated throughout the whole pregnancy. Importantly, foetal growth should be monitored and long-term follow-up of the children is encouraged in dedicated centres.”

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, 2022.

Treatment of Early-Stage Breast Cancer During Pregnancy

Pregnant women with early stage breast cancer (stage I and stage II) are usually treated in the same way as patients who are not pregnant, with some changes to protect the unborn baby.

Treatment may include:

- Modified radical mastectomy, if the breast cancer was diagnosed early in pregnancy
- Breast conserving surgery, if the breast cancer is diagnosed later in pregnancy
- Radiation therapy may be given after the baby is born
- Modified radical mastectomy or breast-conserving surgery during pregnancy. After the first 3 months of pregnancy, certain types of chemotherapy may be given before or after surgery
- Hormone therapy and trastuzumab SHOULD NOT be given during pregnancy

Treatment of Late-Stage Breast Cancer During Pregnancy

There is no standard treatment for patients with late-stage breast cancer (stage III or stage IV) during pregnancy.

Treatment may include the following:

- Radiation therapy.
- Chemotherapy.

Radiation therapy and chemotherapy SHOULD NOT be given during the first 3 months of pregnancy.

If pregnant and 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.

Treatment of Very Young Women with Breast Cancer During Pregnancy

Levey, N. & Krishna, I. 2022.

“Pregnancy-associated breast cancer is defined as breast cancer diagnosed during pregnancy or in the first postpartum year. Breast cancer is one of the most common malignancies to occur during pregnancy. As more women delay childbearing, the incidence of breast cancer in pregnancy is increasing. This article provides an overview of diagnosis, staging, and treatment of pregnancy-associated breast cancer. Recommendations for management of breast cancer in pregnancy are discussed.”

Safi, N., Saunders, C., Anazodo, A., Dickinson, J.E., Boyle, F., Ives, A., Wang, A., Li, Z. & Sullivan, E. 2022.

Researched and Authored by Prof Michael C Herbst

[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Genetic Counselling; Dip Audiometry and Noise Measurement; Diagnostic Radiographer; Medical Ethicist]

Approved by Ms Elize Joubert, Chief Executive Officer [BA Social Work (cum laude); MA Social Work]

August 2022

Purpose: To highlight the various options available for the management of breast cancer diagnosed during pregnancy by describing the investigations, treatment, and outcomes in relation to these women.

Methods: This is a narrative review of the literature to describe the issues related to pregnancy and obstetric management in patients with breast cancer. It incorporates a description of six cases of women (aged 29-39 years) with a first-time diagnosis of breast cancer during pregnancy to illustrate a number of issues that need to be considered during different trimesters.

Results: Of the six cases, two were diagnosed in each pregnancy trimester. A painless breast mass was the presenting symptom in five cases (83%). In all cases, breast ultrasound was the primary diagnostic imaging procedure. Chest X-ray was performed in 3 (50%) and computed tomography in 2 (33%). A core needle biopsy was performed in all cases, and sentinel lymph node biopsy in 3 (50%) cases. Four women had grade 3 tumor; five had estrogen receptor-positive tumors. Four women had breast surgery during pregnancy. Five women gave birth after the induction of labor and/or cesarean section. In all six cases, a multidisciplinary team was involved in the delivery of health care.

Conclusion: Regular breast examinations are needed for all pregnant woman during prenatal visits. Breast ultrasonography should be offered if a breast lump or other symptoms are detected. Breast surgery can be safely performed during all pregnancy trimesters, and some systemic therapeutic agents can be administered safely in the second and third trimesters.

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.

Medical Disclaimer

This Fact Sheet is intended to provide general information only and, as such, should not be considered as a substitute for advice, medically or otherwise, covering any specific situation. Users should seek appropriate advice before taking or refraining from taking any action in reliance on any information contained in this Fact Sheet. So far as permissible by law, the Cancer Association of

South Africa (CANSA) does not accept any liability to any person (or his/her dependants/estate/heirs) relating to the use of any information contained in this Fact Sheet.

Whilst the Cancer Association of South Africa (CANSA) has taken every precaution in compiling this Fact Sheet, neither it, nor any contributor(s) to this Fact Sheet can be held responsible for any action (or the lack thereof) taken by any person or organisation wherever they shall be based, as a result, direct or otherwise, of information contained in, or accessed through, this Fact Sheet.



Sources and References Consulted or Utilised

Allouch, S., Gupta, I., Malik, S., Al Farsi, H.F., Vranic, S. & Al Moustafa, A.E. 2020. Breast cancer during pregnancy: a marked propensity to Triple-Negative Phenotype. *Front Oncol.* 2020 Dec 23;10:580345.

American Cancer Society

<http://www.cancer.org/cancer/breastcancer/moreinformation/pregnancy-and-breast-cancer>

Babycenter.com

http://www.babycenter.com/0_breastfeeding-and-cancer_8682.bc

Boere, I., Lok, C., Poortmans, P., Koppert, L., Painter, R., Vd Heuvel-Eibrink, M.M. & Amant, F. 2022. Breast cancer during pregnancy: epidemiology, phenotypes, presentation during pregnancy and therapeutic modalities. *Best Pract Res Clin Obstet Gynaecol.* 2022 Jun;82:46-59.

BreastCancer.Org

<http://www.breastcancer.org/research-news/20090209?gclid=CLjXwYT6l8ECFVDKtAodalYASQ>
http://www.breastcancer.org/tips/fert_preg_adopt/bc_pregnancy

Breastfeeding Benefits

<http://mswrightsway.com/breast-cancer-awareness-via-breastfeeding-awareness/>

Bhurosy, T., Niu, Z. & Heckman, C.J. 2020. Breastfeeding is possible: a systematic review on the feasibility and challenges of breastfeeding among breast cancer survivors of reproductive age. *Ann Surg Oncol.* 2020 Sep 11.

Cancer Research UK

<http://www.cancerresearchuk.org/about-cancer/type/breast-cancer/living/breast-cancer-during-pregnancy>

Dabrosin, C. 2015. An overview of pregnancy and fertility issues in breast cancer patients. *Ann Med.* 2015; 47(8):673-8. doi: 10.3109/07853890.2015. Epub 2015 Nov 5.

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. Pregnancy outcomes in women exposed to cancer chemotherapy. *Pharmacoepidemiol Drug Saf.* 2018 Oct 31. doi: 10.1002/pds.4689. [Epub ahead of print]

Eastwood-Wilshere, N., Turner, J., Oliveira, N. & Morton, A. 2019. Cancer in Pregnancy. *Asia Pac J Clin Oncol.* 2019 Dec;15(6):296-308. doi: 10.1111/ajco.13235. Epub 2019 Aug 22.

Healthista

<http://www.healthista.com/prevention/7-ways-to-lower-your-breast-cancer-risk/>

Helewa, M., Lévesque, P., Provencher, D., Lea, R.H., Rosolowich, V., & Shapiro, H.M. 2002. Breast cancer, pregnancy, and breastfeeding. *J Obstet Gynaecol Can.* Feb; 24(2): 164-80; quiz 181-4.

- Islami, F., Liu, Y., Jemal, A., Zhou, J., Weiderpass, E., Colditz, G., Boffetta, P. & Weiss, M.** 2015. Breastfeeding and breast cancer risk by receptor status – a systematic review and meta-analysis. *Ann Oncol.* 2015 Dec;26(12):2398-407. doi: 10.1093/annonc/mdv379. Epub 2015 Oct 26.
- Kasum, M., Beketić-Orešković, L. & Orešković, S.** 2014. Subsequent pregnancy and prognosis in breast cancer survivors. *Acta Clin Croat.* 2014 Sep; 53(3):334-41.
- Kobayashi, Y., Tabata, T., Omori, M., Kondo, E., Hirata, T., Yoshida, K., Sekine, M., Itakura, A., Enomoto, T. & Ikeda, T.** 2018. A Japanese survey of malignant disease in pregnancy. *Int J Clin Oncol.* 2018 Oct 27. doi: 10.1007/s10147-018-1352-x. [Epub ahead of print]
- Levey, N. & Krishna, I.** 2022. Breast Cancer in Pregnancy: Caring for the Very Young Breast Cancer Patient from Diagnosis Through Survivorship. *Obstet Gynecol Clin North Am.* 2022 Mar;49(1):181-193.
- MacDonald, H.R.** 2020. Pregnancy associated breast cancer. *Breast J.* 2020 Jan;26(1):81-85.
- Metalon, S.T., Shochet, G.E., Drucker, L. & Lishner, M.** 2015. The effect of pregnancy on breast cancer. *Harefuah.* 2015 Aug; 154(8);530-4, 539.
- National Cancer Institute**
<http://www.cancer.gov/cancertopics/pdq/treatment/breast-cancer-and-pregnancy/Patient/page1>
<http://www.cancer.gov/cancertopics/pdq/treatment/breast-cancer-and-pregnancy/Patient/page2>
- 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.** 2021. Pregnancy-associated breast cancer: a multidisciplinary approach. *Clin Breast Cancer.* 2021 Feb;21(1):e120-e127.
- PDQ Adult Treatment Editorial Board.** 2019. PDQ Cancer Information Summaries [Internet]. Bethesda (MD): National Cancer Institute (US); 2002-2019. Breast Cancer treatment during pregnancy (PDQ®): health professional version.
- Pellino, G., Simillis, C., Kontovounisios, C., Baird, D.L., Nikolaou, S., Warren, O., Tekkis, P.O. & Rasheed, S.** 2017. Colorectal cancer diagnosed during pregnancy: systematic review and treatment pathways. *Eur J Gastroenterol Hepatol.* 2017 Jul;29(7):743-753. doi: 10.1097/MEG.0000000000000863.
- Perrone, A.M., Bovicelli, A., D'Andrilli, G., Borghese, G., Giordano, A. & De Iaco, P.** 2019. Cervical cancer in pregnancy: analysis of the literature and innovative approaches. *J Cell Physiol.* 2019 Sep;234(9):14975-14990. doi: 10.1002/jcp.28340. Epub 2019 Feb 20.
- Poggio, F., Tagliamento, M., Pirrone, C., Soldato, D., Conte, B., Molinelli, C., Cosso, M., Fregatti, P., Del Mastro, L. & Lambertini, M.** 2020. Update on the Management of Breast Cancer during Pregnancy. *Cancers (Basel).* 2020 Dec 3;12(12):3616.
- Rojas, K.E., Bilbro, N., Manasseh, D.M. & Borgen, P.I.** 2018. A review of pregnancy-associated breast cancer: diagnosis, local and systemic treatment, and prognosis. *J Womens Health (Larchmt).* 2018 Nov 27. doi: 10.1089/jwh.2018.7264. [Epub ahead of print]
- Safi, N., Saunders, C., Anazodo, A., Dickinson, J.E., Boyle, F., Ives, A., Wang, A., Li, Z. & Sullivan, E.** 2022. Clinical Decision Making in the Management of Breast Cancer Diagnosed During Pregnancy: A Review and Case Series Analysis. *J Adolesc Young Adult Oncol.* 2022 Jun;11(3):245-251.
- Science Daily**
<http://www.sciencedaily.com/releases/2010/10/101012101847.htm>
- Shachar, S.S., Gallagher, K., McGuire, K., et al.** 2017. Multidisciplinary management of breast cancer during pregnancy. *Oncologist.* 2017;22(3):324-34. doi: 10.1634/theoncologist.2016-0208
- Shechter, M.G., Czuzoi-Shulman, N., Spence, A.R. & Abenhaim, H.A.** 2018. Neonatal outcomes of pregnancy-associated breast cancer: population-based study on 11 million births. *Breast J.* 2018 Nov 12. doi: 10.1111/tbj.13156. [Epub ahead of print]

Shao, C., Yu, Z., Xiao, J., Liu, L., Hong, F., Zhang, Y. & Jia, H. 2020. Prognosis of pregnancy-associated breast cancer: a meta-analysis. *BMC Cancer*. 2020 Aug 10;20(1):746.

Simoes, 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: maternal breast cancer survival over 10 years and obstetrical outcome at a university centre of women's health. *Arch Gynecol Obstet*. 2018 Jun 21. doi: 10.1007/s00404-018-4822-5. [Epub ahead of print]. PMID: 29931523.

Soto-Trujillo, D., Santos Aragón, L.N. & Kimura, Y. 2020. Pregnancy-associated breast cancer: what radiologists must know. *Cureus*. 2020 Sep 9;12(9):e10343.

Susan G Komen

<http://ww5.komen.org/BreastCancer/NotBreastfeeding.html>

WebMD

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