

Breast Cancer and Advanced Technologies in Breast Cancer Treatment

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Introduction

Breast cancer is one of the maximum normally recognized cancer types among women globally. In the USA alone, there might be a predicted 284,000 instances of breast cancer recognized in 2021 together with 44,000 deaths. Approximately 1 in 8 women and approximately 1 in 1,000 men will broaden invasive breast cancer sooner or later of their lives. Thus, the need for effective, lasting breast cancer treatment is urgent.

Increased threat for breast cancer is associated with private or family records of the disease and inherited genetic mutations in breast most cancers susceptibility genes. These include BRCA1 and BRCA2 and other less common inherited gene mutations. An inherited predisposition to broaden breast cancer accounts for approximately 5%-10% of all breast cancer instances, but is rare in the general population (less than 1%). People with BRCA1 and BRCA2 mutations have an expected 45% to 65% higher chance of developing breast cancer with the aid of using age 70, though the threat is maximum round age 40. People with those mutations should discuss their risk with a genetic counsellor. Other known hazard factors include obesity, use of MHT (a hormone therapy that combines progestin and oestrogen), high breast tissue density, alcohol consumption, and physical inactivity [1].

Current methods for breast cancer remedy normally involve surgery if the disease is identified early. Depending at the stage and molecular characteristics of the cancer whilst diagnosed, breast cancer treatment can also additionally include chemotherapy, hormonal therapy, surgical treatment and/or radiation.

Although breast cancer turned into as soon as seemed as tough to treat with immunotherapy because it is immunologically "cold," clinical studies and new drugs have shown that immunotherapy treatment has the potential to improve outcomes for breast cancer patients [2].

Here are some of the latest advances in surgery, radiation, and drug treatment for breast cancer:

Oncoplastic surgery

Oncoplastic surgery is the ultra-modern type of breast-conserving surgery. It combines initial breast cancer surgery with plastic surgery. An Oncoplastic doctor can reshape the breast that had cancer and might reshape your other breast to match. You can be a great candidate for this kind of surgery in case you need a large lumpectomy and may also gain from breast reduction or breast lift surgical treatment [3].

Targeted therapy

One of the large advances in cancer treatment has been gaining knowledge of that all breast cancers aren't the same. This has brought about targeted therapy. Targeted therapy is treatment this is very specific to the type of cancer. Here are a few examples of targeted therapy:

Pertuzumab (Perjeta): This drug targets a protein found on breast cancer cells in approximately 20% of women. If your cancer checks positive for HER-2, focused on this protein can slow down the growth of your cancer. Pertuzumab is approved as a treatment to reduce breast

cancer earlier than surgical treatment. It can also additionally can help you have a less invasive surgical treatment and enhance your chance of a cure.

Trastuzumab (Herceptin): also works in opposition to HER2-positive breast cancers with the aid of using blocking the capacity of the cancer cells to get hold of chemical signals that tell the cells to grow.

Palbociclib (Ibrance): is a kinase inhibitor. A kinase is a kind of protein in the body that enables manipulate cell division. Ibrance works with the aid of using preventing cancer cells from dividing and growing.

Everolimus (Afinitor): This targeted therapy drug can also additionally assist other hormone remedy drugs work better. You may gain from a hormone therapy drug if your breast cancer is sensitive to female hormones like estrogen. This kind of combined therapy has been shown to assist shrink breast cancer [4] earlier than surgery. Combination therapy may additionally assist deal with advanced breast cancers in postmenopausal women.

Atezolizumab (Tecentriq): This immunotherapy drug is approved to treat women with advanced triple negative breast cancer that makes the PD-L1 protein, in combination with the chemotherapy drug nab paclitaxel (Abraxane).

Drugs based on different potential targets, such as kinase inhibitors, are being studied to treat triple-negative breast cancers, either with the aid of using themselves, or along with chemotherapy. For example, AKT inhibitors (ipatasertib and capivasertb) which, when used with the chemotherapy drug paclitaxel, is show promising results in treating women with TNBC because the first treatment [5].

Fewer adjuvant radiation treatments

Women with breast cancer are regularly treated with between 15 and 20 radiation treatments over a three- or four-week period after breast-conserving surgery. New studies shows that fewer treatments over only a week's time can be needed.

Conclusion

Fewer remedies are much less costly and time-ingesting for sufferers and from time to time there's a lower risk of adverse effects. A CT scan is used to map the target for radiation. Then, radiation oncologists mark the tumor's boundaries and decide the essential dosage using

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sophisticated computer programs, Beriwal says. This permits them to manage the radiation with a high level of accuracy. The affected person is positioned on a treatment table and images or scans are taken earlier than every treatment to make sure the radiation beams are targeted to the desired area.

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Conflicts of Interest

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References

1. Brooks DA, Nover BA, Jagtap S, Anjum W, Yegingil H, et al. (2009) Modern Breast Cancer Detection: A Technological Review. *Int J Biomed Imaging* 2009: 902326.
2. Maddams J, Brewster D, Gavin A, Steward J, Elliott J, et al. (2009) Cancer Prevalence in the United Kingdom: Estimates for 2008. *Br J Cancer* 101: 541-547.
3. Zubair M, Wang S, Ali N (2021) Advanced Approaches to Breast Cancer Classification and Diagnosis. *Front Pharmacol* 11: 632079.
4. Gonzalez-Angulo AM, Morales-Vasquez F, Hortobagyi GN (2007) Overview of Resistance to Systemic Therapy in Patients with Breast Cancer. *Adv Exp Med Biol* 608: 1-22.
5. Moqadam SM, Grewal PK, Haeri Z, Ingledew PA, Kohli K, et al. (2018) Cancer Detection Based on Electrical Impedance Spectroscopy: A Clinical Study. *J Electr Bioimpedance* 9: 17-23.