

## Breast Cancer in Men: An Overview of General Features and Molecular Pathology

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### ABSTRACT

Breast cancer is often synonymous with women - but men get it as well. Male Breast Cancer (MBC) is a rare health condition which makes up approximately 1% of all breast cancer cases. MBC is characterized by the development of uncontrolled malignant cells in the breast tissue. It occurs mostly in elderly men, 65-70 years old, but it can occur at a younger age also. MBC incident rates are higher in the United State and Europe as compared to Asian and African nations. In the United States however, African Americans are at higher risk as compared to the general population. The etiology and risk factors of MBC involve a complex multifactorial interplay of hormonal imbalance (eg. estrogen), family history, lifestyle, obesity and genetic mutations such as BRCA1 and BRCA2. Signs and symptoms include a painless lump in the chest area, discharge or bleeding from the nipple and skin color changes in the nipple. The diagnosis of MBC is similar to Women's Breast Cancer (WBC); which involves a combination of physical examination, mammogram, ultrasound and biopsy. The histology of MBC is similar as well - mostly being invasive ductal carcinoma with hormonal receptors (estrogen receptors being predominant). The treatment of MBC involves a combination of the removal of breast tissue, radiation therapy, chemotherapy, hormonal therapies. These treatment protocols are given depending on the type, status and stage of the tumor. MBC can cause significant mortality and morbidity due to old age and late diagnosis. Its impact on the affected individual, their family and society is profound. A 5-year survival of MBC is approximately 85% but can vary significantly with diagnostic stage. Although rare, MBC requires awareness, early detection and diagnosis. Considerable advancements have yet to be made in research, clinical trials, early detection and treatment for improving outcomes.

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### Introduction

Cancer is a most deadly and dangerous disease which takes an enormous toll around the world today. Cancer is the second leading cause of death followed by heart disease and stroke. Cancer can arise almost anywhere in the body, organ or tissue [1-3].

The body is composed of billions of normal healthy cells. All normal cells have a very defined life-cycle. They divide, function for a while and die off. The cellular lifecycle seeks to repair damaged cells and replace old or dead cells. This mechanism is highly controlled and regulated. However, under certain circumstances this mechanism is disrupted, causing a cluster of cells to accumulate and get bigger. Over time the formation of a mass or tumor can be seen and felt [1, 4-6].

Tumors can be classified as benign or malignant based upon multiple exhibited characteristics. Benign tumors grow slowly and stay in their place of origin. They have well defined borders with regular nuclei. They are not malignant and do not invade or metastasize to other parts of the body. Benign tumors are not usually problematic and pose no threat; unless they become larger and compress nearby organs and start causing pain. Malignant

tumors on the other hand are cancerous, grow out of control and are life threatening. They have ill defined borders with a bizarre nucleus. Malignant tumors invade surrounding organs and metastasize to distal parts of the body where they cause pain and interfere with normal functions [1, 4-6].

There are two different ways that cancer can spread to distal parts of the body. These two mechanisms are known as Metastasis and Invasion. Metastasis is when cancer cells break away from the tumor and get into the lymphatic system or the bloodstream. They then travel to distal parts of the body and start developing secondary tumors. Invasion is when cancer cells start growing from the place of origin to nearby organs [1, 3, 4].

Of the 100 different types of cancer, one of the most common and one affecting the most vulnerable sites is breast cancer. Breast cancer is synonymous with women and it is the leading cause of death worldwide in women. Although rare compared to WBC, men get it too. Boys and girls are born with small amounts of breast cells or tissues consisting of a few ducts located under the nipple and the surrounding area. However, there are biological differences; the breasts of men are less developed as compared to women. For the most part breast cancer in men is treated like breast cancer in women who have reached menopause. At puberty girl's ovaries start making female hormones (progesterone and estrogen) which cause breasts to grow. In contrast, during puberty, boys

have a higher level of testosterone and lower levels of estrogen which stop the growth of breasts.

In women, breast cells begin to grow unabated and are often seen as tumors or lumps on an X-ray. In men, these findings are similar. In both cases, these lumps have the potential to become cancerous. Men with breast cancer usually have lumps that can be seen and felt. Diagnosis and tests for MBC are similar to the ones used for women. Survival for men with breast cancer are also similar to that of women [7-12].

### Statistics

MBC is a relatively rare disease in the western world accounting for <1% of all breast cancer cases. According to the American Cancer Society, MBC is about 100 times less common in men as compared to women. In 2024, it is estimated that 2,790 new cases of MBC will be diagnosed in the United States - up from 900 cases in 1991. Also in the United States, the age-adjusted incidence rate increased from 0.90 per 100,000 men in 1980 to 1.32 per 100,000 in 2017. Between 2013 and 2017 the United States experienced its highest rates in men aged 80 and older, at 8.30 per 100,000 men. The American Cancer Society states the mortality rate in 2023 stood at 18.9% for men and 14.5% for women. For men, the average lifetime risk of getting MBC is about 1 in 726; which is largely dependent on underlying genetic and environmental factors. A 2023 study published in the Journal of the National Cancer Institute several BCRF investigators found that survival rates for MBC have not significantly improved in the last 30 years [13-18].

### Epidemiology

The chances of getting MBC is relatively rare but remains a significantly noticeable malignancy (<1%) as compared to WBC. The epidemiology of MBC is characterized by various factors including: age range, racial makeup and ethnic background. The incidence of MBC varies widely amongst different ethnic and racial groups. In the United States, African American men have a higher incidence rate as compared to White Americans. From a global perspective: African, Asian and Hispanic men are observed to have a lower rate of incidence. Of note, the overall global incidence of MBC has been on rise over the past few decades. The risk of developing MBC can occur at any age, but is most common in elderly men between the ages 60-70. The best chances of treatment and recovery come with an early diagnosis. When diagnosed at a late stage or at an older age, it can cause a considerably higher rate of mortality and morbidity [8, 9,12, 13, 21-23].

### Etiology and Risk Factors

Most cancers are the result of many factors either individually or combined that increase the risk of cancer development. Although breast cancer is usually associated with women, men get it too. Also like women, males have a high risk of developing breast cancer. The etiology of MBC is a complex process consisting of multiple factors that contribute to its development. These factors include age (60+ years of age), genetic, hormonal imbalance, environmental exposure and lifestyle [19-26, 44].

**Genetic Factors:** MBC Often Presents Unique Genetic And Molecular Profiles.

- **BRCA Mutation:** Men with mutations in the BRCA1 and BRCA2 genes are at a significantly higher risk of developing breast cancer. BRCA2 mutations have a higher risk propensity in

developing MBC as compared to mutations in BRCA1. Men who carry both BRCA1 and BRCA2 gene mutations may pass them on to their children. Children of men with breast cancer have a higher risk of developing breast cancer themselves.

- **Other Genes:** Other inherited genetic mutations are also involved, but to a lesser extent as compared to BRCA2. Some of them are PTEN (Cowden syndrome), CHEK2 (cellular response to DNA damage mediated by kinase), PALB2 (Lynch syndrome), P53 (Li-Fraumeni syndromes), CYP17 Gene (cytochrome P450 enzyme).

### Family History

A family history of breast cancer elevates the risk of developing MBC. Those who have breast cancer have the propensity of passing this risk to their offspring. This is due to shared environmental and genetic factors.

### Hormonal Factors

Men who have elevated levels of estrogen have an increased risk of acquiring breast cancer. The following are examples of increased estrogen levels.

- **Hormonal Therapy:** Men who have previously developed prostate cancer or are taking estrogen related medication for prostate cancer are also at greater risk of developing MBC.
- **Klinefelter Syndrome:** This genetic condition occurs when men are born with an extra X chromosome (XXY) and may cause the testicles to develop abnormally. This syndrome causes a rise in estrogen levels and decrease in androgen levels. This hormonal imbalance produces small, hard testicles with elevated levels of FSH. This in turn is linked to an increased risk of developing MBC.
- **Cirrhosis:** Liver diseases like cirrhosis impairs the liver from synthesizing normal proteins. In this scenario a hormonal imbalance is created which produces high levels of estrogen and low levels of androgen. This condition is linked to a higher risk of developing MBC.
- **Obesity:** In obese men, high fat tissues convert androgen to estrogen. This high estrogen environment is linked to an increased risk of developing MBC.
- **Alcohol Consumption:** High alcohol consumption helps the liver from converting androgen to estrogen and increases the risk of developing MBC. Alcohol acts like a catalyst for estrogen levels to rise.
- **Prostate Cancer:** Estrogen treatment in prostate cancer patients also increases the risk of MBC in men. This is a small risk compared to the benefits of the treatment.

### Testicular Disease

There are several testicular conditions that are linked to a higher risk in the development of MBC. Some of these conditions are:

- **Orchitis** - The inflammation or swelling of one or both testicles.
- **Mumps** - The inflammation of mumps at a younger age
- **Orchiectomy** - Surgery to remove the testicles.
- **Cryptorchidism** - A condition where one or more testicle remains undescended

### Radiation Exposure

Excessive exposure to radiation especially to the chest area or the treatment of other cancers can elevate the risk for MBC.

## Lifestyle Factors

Lifestyle factors such as smoking and a lack of physical exercise are contributing factors to MBC.

## Transgender Individuals

Transgender men who undergo estrogen hormone therapy have an elevated risk of developing MBC.

## Occupational and Environmental Factors

There are certain occupations that come with hazards associated with them. These occupations have environments in which exposure to exhaust fumes, gasses, very hot working environments (steel factories), ionizing and electromagnetic radiation and exposure to cancer causing agents. All these hostile environments are associated with an increased risk in developing MBC.

## Signs and Symptoms

MBC is a rare and uncommon phenomena presenting several signs and symptoms similar to those as seen in women. The following signs and symptoms can help in early detection and diagnosis. These signs include painless lumps in the breast tissue, discharge from the nipple and changes in skin color or texture over the breast or nipple [9-12, 27, 28].

**Lump in the Breast:** The most common sign is a painless lump or thickening in the breast tissue often located near the nipple. The lump is usually stationary, firm and grows with time. Some men experience pain or tenderness in the breast area along with changes in the shape or size of the breast. Of note, swelling or lumps in the lymph nodes indicate metastasis.

**Nipple Discharge:** Another sign is discharge, bleeding and crusting of the nipples. Inversion of the nipple and the surrounding area are also other well-known signs of MBC.

**Skin Changes:** Other signs of MBC include changes in the nipple and surrounding area. Changes in the breast tissue include dimpling, developing sores, rash and ulceration. Changes in the nipple include a change of color, redness, inflammation and itchiness. Other uncommon signs are breast asymmetry - where one breast is larger or misshaped as compared to the other.

**Other:** As MBC progresses, other signs and symptoms emerge like weight loss, jaundice, shortness of breath, coughs and bone pain.

These signs should not be ignored and necessitate immediate medical attention.

## Diagnosis

The detection of MBC typically consisted of thorough physical and clinical examinations. The following describes the tools and techniques used in the detection [9, 12, 22, 29, 30].

**Physical:** Rigorous physical examination will be carried out by the primary care physician or specialist to detect lumps or changes in skin color or texture.

**Mammography:** The use of x-rays and 3D computer imaging provides a more detailed look under the skin surface and is superior as compared to a 2D mammogram.

**Ultrasound:** This technique uses sound waves to differentiate

solid and cystic masses. It also provides a picture of the lymph nodes status.

**Magnetic Resonance Image (MRI):** This technique uses radio waves to produce a series of detailed images. This technique is used for difficult cases to distinguish between benign and malignant tumors. This technique is far superior than others.

**Blood Chemistry:** This is used to analyze hormones, enzymes and blood chemistry of vital organs. Hormone levels (progesterone, estrogen and androgen) indicate possible imbalances. Blood chemistry and enzymes check the health and function of vital organs such as the heart, liver and kidneys. All of these levels need to be carefully monitored as abnormalities in these findings are indicative of the ailment.

## Biopsy

A sample tissue is excised for histological examination under a microscope by a pathologist to check the presence of cancer cells, identify the type of cancer and grade of tumor. There are four different types of biopsies used [29-31, 41-43].

**Fine-Needle Aspiration Biopsy:** This is a quick and less invasive method which uses a thin needle to remove tissue or fluid from the suspected area. This method is employed for cystic lesions and lesions for cytological examinations.

**Core-Needle Biopsy:** This biopsy uses a wide, large and hollow needle to remove tissue from the suspected area. It provides a larger tissue sample for histopathological examinations and renders more information.

**Incisional Biopsy:** This biopsy removes part of the lump or tissue for histological examination.

**Excisional Biopsy:** This biopsy removes the entire tumor or suspected area. This technique is used when the results from the core biopsy are inconclusive or if the lesion is small and easily accessible.

**Immunohistochemistry:** This technique involves the use of antibodies and antigen reaction on the tissue samples. It assesses hormonal receptor status for ER, PR and HER2. The results of this are used in treatment planning.

## Types of MBC

The histopathology of MBC is an important area of study because of the rarity and subtle biological differences as compared to women's breast cancer cases. It further helps with accurate diagnosis and treatment planning. The following types of MBC are found in men [19, 12 21-23 29].

**Invasive Ductal Carcinoma (IDC):** Approximately 80-90% of all MBC cases diagnosed in men are ductal carcinomas. IDC is an invasive cancer cell that starts in the wall of the nipple duct. Once it breaks through, it has the potential to metastasize to other parts of the breast, lymph nodes and distal parts of the body.

**Ductal Carcinoma In Situ (DCIS):** Also known as intraductal carcinoma accounts for 10% of all MBC cases. DCIS is non-invasive and is confined to its place of origin. DCIS is curable with surgery.

**Invasive Lobular Carcinoma:** This is extremely rare and accounts for 2% of MBC cases. When it does occur, it behaves similar to lobular carcinoma in women and metastasizes to distal parts of the body.

#### Other Rare and Special Types of MBC

**Paget Disease:** This accounts for 1-3% of MBC cases. It starts in the breast and travels to the nipple and may spread to the surrounding area of the nipple. It is often linked to DCIS or IDC. The skin of the nipple appears crusty, red, scaly itchy, bleeds or oozes.

**Inflammatory Breast Cancer:** This is a rare and aggressive type of breast cancer. Symptoms include swollen, red warm and tender breast tissue as opposed to the formation of a lump, which can be mistaken for an infection of the breast.

**Mucinous Carcinoma:** Are rich in extracellular mucin. Are invasive.

**Medullary Carcinoma:** Are rare, highly invasive, infiltrate the lymphatic system and have a large sheath.

**Papillary Carcinoma:** Rare but more frequent in men compared to women. These have well formed papillary structures. They can be invasive in situ.

**Others:** Other types of MBC are: tubular carcinoma, micropapillary carcinoma, mixed carcinoma and metaplastic carcinoma.

#### MBC Specialists

MBC is often diagnosed at a late stage leading to high mortality. To improve treatment outcomes, a team of highly trained medical specialists are involved in the diagnosis and treatment of MBC cases. These medical specials include [33-35].

**Radiation Oncologist:** Highly trained medical specialists who treat MBC patients with multimodal (radiation, surgery, etc.) protocols and oversee the treatment plans.

**Pathologist:** A medical professional whose expertise is in diagnosing cancer cells by examining tissue samples.

**Radiation Physicist:** A medical professional who specializes in imaging equipment and calculating the exact dose of radiation given.

**Radiation Therapy and Genetic Counselor:** Medical professional assistant providing genetic testing and counseling.

#### Differential Diagnosis

Men with similar signs and symptoms who are suspected of having MBC should be considered for evaluation of other conditions. Histopathological findings help in differentiating MBC from other conditions. A thorough differential diagnosis assists in accurate diagnosis and treatment planning treatment. Some conditions to be considered [8,12, 20, 22, 31].

**Gynecomastia:** It is the most common of male breast disorders, much more than MBC. It can be bilateral but also can be unilateral. It is not a tumor, but rather a benign proliferation and enlargement of the breast tissue. It is characterized by tender tissue with swelling around the nipples. Gynecomastia is caused by a

hormonal disturbance due to puberty, obesity, aging, liver disease or hyperthyroidism. In some cases, it is caused by drugs such as anabolic steroids and anti-androgen medications. Histology shows ductal proliferation and stromal fibrosis. It requires no treatment unless it is painful or gets too large. It can be treated by hormone therapy or surgery. Gynecomastia may increase the risk for MBC.

**Klinefelter's Syndrome:** This is a very rare inherited genetic disorder which may cause enlarged breast tissue. Men with Klinefelter Syndrome have low levels of androgen and high levels of estrogen. These hormonal changes are linked to a high risk of developing MBC.

**Lipoma:** Is described as a benign fatty tumor that develops in the breast. It is often a soft, moveable and painful lump. Sometimes the fatty breast tissue is damaged through trauma or surgery and forms a firm, painless lump. It is found during a physical examination and is confirmed by either an MRI, mammography or ultrasound. A biopsy is required to confirm its benign status.

**Breast Cysts:** Is when fluid fills the breast making it tender, moveable, smooth and round. An ultrasound is used for confirmation and aspiration of the fluid is needed for diagnostic and treatment.

**Breast Abscess:** Is when the breast is filled with the accumulation of pus due to infection. A clinical examination typically demonstrates fever; redness, swelling and pain in the breast tissue. The condition can be confirmed by an ultrasound and aspirating fluid.

**Fibroadenoma:** Rare condition when a benign breast tumor is found in men. A physical examination demonstrates a firm, rubbery and moveable lump. A mammography, ultrasound and biopsy is performed to confirm diagnosis.

**Epidermal Inclusion Cyst:** A benign cyst that originates in hair follicles under the skin. It is small, round and less tender. A clinical examination, ultrasound and biopsy is performed to confirm the condition.

**Metastatic Cancer:** When a metastasized secondary tumor that develops from another primary site like the prostate, lung and melanoma. These are usually hard and irregular lumps. Imaging, clinical history and biopsy are used to confirm the condition. In rare cases men can be diagnosed with inflammatory breast cancer.

#### Treatment of MBC

The treatment of MBC follows the same protocols similar to that of WBC and is tailored to the specifics of the patient. The main treatment typically involves surgery followed by radiation therapy, chemotherapy, hormonal and targeted therapies or a combination thereof depending on the tumor's hormone receptor and HER2 status. The following is an overview of the treatment protocols [8, 9, 11, 12, 21-23, 36, 37].

#### Surgery

**Mastectomy:** Depending on the tumor size and stage, surgery is the mainstay of treatment for MBC. A mastectomy is a procedure defined by the removal of the entire breast along with the nipple, areola and axillary lymph nodes. This surgery is rarely performed today.

**Sentinel Lymph Node Biopsy:** Is a procedure where the first lymph node to which cancer is most likely to spread is removed.

This procedure further helps in treatment planning.

**Axillary Lymph Node Dissection:** Is a procedure where multiple lymph nodes in the axillary region are removed.

### Radiation Therapy

Radiation therapy is given to relieve symptoms and to control the spread of advanced stage cancer. It is usually given after a mastectomy, especially when the tumor is large and has spread to the chest muscles and lymph nodes. It is generally given by external beam radiation directly from outside to the affected area and it is seldom administered by internal radiation (brachytherapy).

### Chemotherapy

Chemotherapy is given to treat MBC to alleviate symptoms and to control the spread of cancer through the lymph nodes in the event of recurrence. Neoadjuvant chemotherapy is given before the surgery to shrink the tumor for easy removal. Adjuvant chemotherapy is given after the surgery to eradicate any remaining cancerous cells and to stop recurrence.

The most commonly used drugs in chemotherapy are  
Anthracyclines - Doxorubicin (Adriamycin), Epirubicin  
Taxanes - Paclitaxel (Taxol), Docetaxel (Taxanes)  
Others - Cyclophosphamide, Fluorouracil Others (5-Fu) and Carboplatin

Possible complications include side effects from surgery, radiation and chemotherapy.

### Hormonal and Cellular Therapy

**Hormonal Receptors:** MBC tumors have positive hormone receptors for estrogen and progesterone - and they grow in response to these hormones.

**HER2 Status:** Some MBC tumors have HER2 protein receptors that promote cell growth and multiplication.

**Triple-Negative:** In cases where no molecular receptors exist, MBC does not recognise estrogen, progesterone or HER2. This is the most difficult MBC to treat.

**Hormone Therapy:** Depending on the tumor hormone receptor status and stage. Most MBC tumors have ER/PR hormone positive receptors which respond to hormonal therapy. The majority of MBC tumors are 90% positive for ER-receptors and other 9% are HER2 positive. Commonly used hormone therapies are used as an effective option to lower the risk of cancer recurrence. Commonly used hormonal therapies are:

**Tamoxifen:** Is the drug most commonly used to selectively block estrogen receptors on tumor cells. It is used after surgery to reduce the risk of recurrence and may be used for preventive purposes.

**Aromatase Inhibitors:** Aromatase inhibitors such as anastrozole, letrozole and exemestane lower the risk of aromatase in the body. These drugs are less commonly used in MBC cases to reduce estrogen levels in men.

**Luteinizing Hormone-Releasing Hormone (LHRH) Antagonist:** Is administered to lower androgen (testosterone) production. At times, it is used in conjunction with aromatase inhibitors. The commonly used drug is Goserelin.

**Orchiectomy Surgery:** To reduce the levels of androgen which are converted into estrogen in MBC cases, this surgery entails removing androgen-producing testis. This is very effective hormonal therapy for men.

**Targeted Therapy:** For HER2-positive MBC cases, Trastuzumab or Herceptin are monoclonal antibodies that target HER2 proteins. This can also be given in combination with chemotherapy. Pertuzumab (Perjeta) is often given with Trastuzumab and chemotherapy as well.

**Other Drugs:** Lapatinib, Neratinib and Palbocicib are also used to treat advanced MBC cases.

**Clinical Trials and Others:** Participation in clinical trials aids in evaluating new therapies and their effect treatment efficacy. Immunotherapy is not a current treatment although research is in progress. Bone directed therapy uses drugs like bisphosphonates (Zoledronic acid) or RANK ligand inhibitors (denosumab) to strengthen bones and reduce the risk of fractures during treatment.

### Mortality and Morbidity

There are many factors that influence mortality and morbidity. These factors include a patient's advanced age, a patient's general health, the diagnosis stage, the tumor size, lymph node involvement and hormonal receptors and HER2 status. This is due to the rarity of the condition, lack of awareness and a combination of the factors above.

The five year survival for MBC cases depends on what stage the cancer is diagnosed. Early detection offers a much better and significant survival rate. Survival rates for MBC cases are slightly lower than for WBC cases. MBC cases have a 5-year survival rate of 77.6% as compared to WBC cases who have a survival rate of 86.4% [8, 12].

Localization plays a significant role in survival rates. Localized cases have much better survival rates than distal cases.

**Localized MBC:** Cancer confined to the breast area has a five year survival rate which is approximately 96%.

**Regional MBC:** Cancer spread to nearby lymph nodes has a 5-year survival rate which is approximately 83%.

**Distal MBC:** Cancer metastasized to distant parts of the body has a 5-year survival rate which is approximately 22%.

### Recent Advancements

There are no established diagnosis or screening protocols for MBC. Despite its rarity and lack of awareness, significant advancements in detection and treatment have been made. Genetic profiling, counseling and polling of family history has helped tremendously in determining risk profiles. Genetic mutations in BRCA, especially BRCA1 and BRCA2 have resulted in a better understanding of the mechanisms of MBC, which in turn have led to better detection and treatment protocols. Advancements in active molecular research and hormone receptors have also contributed to better detection, prevention and treatment methods using hormone therapy. The use of trastuzumab (herceptin) for HER2 targeted therapy aids in early diagnosis and treatment. PAPA inhibitors like Olaparib have also shown excellent results for MBC patients with BRCA mutations. Immunotherapy is emerging as the leading contender in the treatment of cancer. Although not much focus with respect to MBC has been given, research however, is in progress. MBC patients are encouraged to participate in clinical trials and

awareness programmes, as these have a net positive impact in the advancement of new treatment and detection methodologies. Comprehensive care teams of medical specialists (i.e oncologists, surgeons, genetic counselors, researchers) advance learnings of other genetic syndromes that are associated with MBC [38-40].

### Conclusions

Male Breast Cancer (MBC) is a wake up call for all men in general. The incidence of MBC is very uncommon, only comprising 1% of all breast cancer cases. Despite its low incidence, it has a significant and noticeable morbidity. There is no clear way to prevent MBC and no conventional screening techniques. Its rarity, lack of public awareness and late stage diagnosis are all contributing factors. Although its cause is unknown, there are several factors that increase the risk of getting it. A complex multifactorial interplay between mutations in the BRCA gene, family history, hormonal factors (Klinefelter syndrome), lifestyle choices (alcohol consumption), transgenderism and environmental & occupational hazards (exposure chemical causing cancer) elevate risk. MBC is characterized by nipple discharge, changes in skin color/texture and lumps in the breast tissue. It is typically diagnosed through a physical exam, mammography ultrasound, MRI or biopsy. The types of MBC can vary - invasive ductal carcinoma, Paget's disease, invasive lobular carcinoma, and medullary carcinoma to name a few. A care team of highly trained medical practitioners are skilled at diagnosing and treating MBC. They will determine the best treatment protocol (i.e Mastectomy, Radiation Therapy, Chemotherapy, Hormonal Therapy) based on the patient's profile (i.e. age, tumor stage, tumor size, tumor location, etc.). MBC survival rates are similar to WBC survival rates. The best way to prevent MBC is to know that it can happen, understanding the individual's risk profile (i.e. genetics, family history, occupational hazards) and to undergo preemptive genetic & physical screening. The psychological impact of going through MBC treatment can be very taxing and isolating - both for the patient, family and society. There are many support groups and online forums one can lean on to provide the required emotional support to make this journey.

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