Metastatic Breast Cancer Fact Sheet

Prevalence, Facts and Figures

Breast cancer is the most common cancer in women.[1] Approximately one in eight women are diagnosed with breast cancer in the US.[2]

Of these patients, approximately one-third are either diagnosed with, or progress to the metastatic stage of the disease.[3] In 2018, it is estimated that 155,000 women in the US have metastatic breast cancer and this number is expected to rise to 160,000 by 2020.[4]

Metastatic breast cancer is the third most common cause of death from cancer.[2] In the US, about 40,920 women are expected to die from the disease in 2018.[5]

Metastatic breast cancer (Stage IV) occurs when the cancer has spread beyond the breast to other parts of the body such as the bones, lungs, liver or brain.[6,7] Despite advances in the treatment of breast cancer, metastatic breast cancer remains generally incurable, and the goal of current treatment is to delay disease progression while maintaining or improving quality of life.[3]

The 5-year survival for breast cancer that has metastasized is approximately 27%.[2]

Types of Breast Cancer

Breast tumors are examined in the laboratory to determine the type of breast cancer and develop a plan of action.[8] Tumors are classified by their hormone status and HER2 status.[8,9] The results of these tests will determine treatment options available to that patient.[8] It's important tumors are periodically reexamined as it is possible for a tumor type to change over time.[10]

- **Hormone receptor (HR) status** determines if there is a presence of estrogen receptors or progesterone receptors in the tumor. If a tumor is positive for either receptor type, the tumor is classified as hormone receptor positive (HR+) and means the cancer is fueled by hormones.[8] Approximately 75% of breast cancers are estrogen receptor positive and 55% are progesterone receptor positive.[11] If there are no hormone receptors detected the type is considered hormone receptor negative (HR-)[8]

- **HER2** *(human epidermal growth factor receptor 2)* **status.** HER2 is a gene that also contributes to the progression of breast cancer tumors. In a healthy cell, the HER2 gene functions normally and contains a normal amount of HER2 proteins and receptors, which helps control the growth of healthy breast cells. When the HER2 gene does not function properly, this results in too many HER2 receptors, which causes the cancer cell to divide and grow more rapidly. An increased amount of HER2 is called HER2 positive (HER2+) metastatic breast cancer.[9] In about 1 of every 5 breast cancers, the cancer cells have a **gene** mutation that makes an excess of the **HER2 protein. HER2-positive breast cancers tend to be more aggressive than other types of breast cancer**[12]

- **Triple negative:** Triple negative metastatic breast cancer occurs when the tumor tests negative for both the hormone receptors (estrogen and progesterone) and does not produce an excess amount of HER2 receptors.[8] It is also important to periodically re-biopsy the tumor because it can change over time which can have an impact on the treatment recommendations and decisions.[10] This type of cancer is more common in younger women and typically progresses faster than most other types of breast cancer[8]

Stages of Breast Cancer[13]

Breast cancer is staged according to the size of the tumor, whether it has reached nearby lymph nodes and whether it has formed metastases in other parts of the body:

- Stage 0: the tumor is non-invasive (eg, ductal or lobular carcinoma *in situ*)
- Stage I: the tumor is invasive but small (2 cm or less) and limited to the breast or one to three lymph nodes under the arm, with no metastases
- Stage II: the tumor is invasive and may be larger than 2 cm and may have spread to lymph nodes under the arm or near the breastbone, but not into the chest wall or other areas
- Stage III: the tumor is invasive and larger (5 cm or more), may affect many lymph nodes under the arm or near the breastbone, and may have spread into the chest wall or skin, but there are no metastases
- Stage IV: the tumor is invasive and may have spread to lymph nodes and other parts of the body with metastases. These occur most commonly in the bones, brain, liver and lungs

Hereditary Risk For Breast Cancer[14]

Inherited mutations in *BRCA1* and *BRCA2* increase the risk of male and female breast cancer. *BRCA*1/2 mutations account for about 20 to 25 percent of hereditary breast cancers and about 5 to 10 percent of all breast cancers.

Breast cancers associated with *BRCA*1/2 mutations tend to develop at younger ages, and tend to have clinicopathological features typically associated with aggressive disease.

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US-15251 Last Updated 12/17

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