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fact sheet

CURRENT STANDARDS OF CARE FOR METASTATIC BREAST CANCER

For women coping with metastatic breast cancer, the number of treatment options continues to grow. In metastatic breast cancer, the cancer has spread beyond the breast to other parts of the body, such as the lymph nodes, skin, bone, liver or lungs. In most cases, metastatic breast cancer is a recurrence (return) of previously-treated breast cancer.

TREATMENT OPTIONS

Treatment approaches for metastatic breast cancer are individualized, taking into consideration its specific type, the parts of the body to which it has spread and the preferences of the patient.

Hormone therapy is commonly the first treatment approach for estrogen receptor-positive (ER-positive) metastatic breast cancer. If the woman being treated is premenopausal, hormone therapy generally begins with “suppression” of the ovaries, preventing the production of estrogen that can fuel cancer growth. After ovarian suppression, hormone therapy typically takes a defined path:

- **Tamoxifen (Soltamox, Nolvadex)** is an estrogen-blocking treatment given to both pre- and postmenopausal women. Designed to stop the growth of the cancer and shrink the tumor, tamoxifen is often the first treatment approach for young women with metastatic breast cancer who have not received any prior hormonal therapy.
- **Aromatase inhibitors (AIs)** block the action of the enzyme aromatase. This results in lower levels of circulating estrogen, which has the effect of slowing the growth of hormone-sensitive tumors. Three types of AIs are approved by the U. S.

Food and Drug Administration (FDA): anastrozole (Arimidex and others), letrozole (Femara and others) and exemestane (Aromasin and others).

- **Fulvestrant (Faslodex)**, an estrogen-blocking drug, attaches to estrogen receptors and changes their shape, preventing the receptors from working properly, which slows the growth of breast cancer cells.

Chemotherapy drugs that treat metastatic breast cancer often differ from those used at the time of initial treatment. The most common chemotherapy drugs used to treat metastatic breast cancer are:

- **Anthracyclines**, such as doxorubicin (Adriamycin), pegylated liposomal doxorubicin (Doxil, Caelyx) and epirubicin (Ellence).
- **Antimetabolites**, such as capecitabine (Xeloda) and gemcitabine (Gemzar).
- **Antimicrotubule agents**, such as ixabepilone (Ixempra), eribulin (Halaven) and Vinorelbine (Navelbine).
- **Antitumor antibiotics**, such as mitoxantrone (Novantrone).
- **Platinum agents**, such as platinol (Cisplatin) and carboplatin (Paraplatin).
- **Taxanes**, such as paclitaxel (Taxol), docetaxel (Taxotere) and albumin-bound paclitaxel (Abraxane).

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Targeted treatments focus on specific molecules and cell mechanisms thought to be important for cancer cell survival and growth. Targeted treatments are meant to spare healthy tissues and cause fewer and less severe side effects than chemotherapy. The drugs commonly used include:

- **Trastuzumab (Herceptin).** Trastuzumab is a specially-made monoclonal antibody that targets and attaches to human epidermal growth factor receptor 2 positive (HER2-positive) cancer cells, slowing or stopping their growth. Trastuzumab can be used alone, in combination with chemotherapy or with chemotherapy plus pertuzumab.
- **Trastuzumab emtansine (Kadcyla).** Trastuzumab emtansine, also called T-DM1, is the combination of trastuzumab and a chemotherapy called DM1. Combining these drugs allows for the targeted delivery of chemotherapy to HER2-positive cancer cells.
- **Pertuzumab (Perjeta).** Like trastuzumab, pertuzumab is a monoclonal antibody that targets HER2-positive cancer cells. Pertuzumab is often given in combination with trastuzumab and chemotherapy.
- **Lapatinib (Tykerb).** Lapatinib is a tyrosine-kinase inhibitor that blocks certain enzymes, inhibiting the growth of cancer cells. Lapatinib is used for the treatment of HER2-positive metastatic breast cancer in women who have already been treated with chemotherapy and trastuzumab. It is sometimes combined with hormone therapy or chemotherapy.

There are targeted treatments specifically designed for the treatment of ER-positive, HER2-negative metastatic breast cancer:

- **CDK4/6 inhibitors.** CDK4/6 inhibitors are designed to interrupt enzymes that promote the growth of cancer cells. The CDK4/6 inhibitors used in treating ER-positive, HER2-negative metastatic breast cancer are abemaciclib (Verzenio), palbociclib (Ibrance) and ribociclib (Kisqali). Each of these drugs can be given in combination

with hormone therapy, such as the aromatase inhibitor letrozole or the hormone therapy fulvestrant. Abemaciclib can also be used alone for the treatment of these types of cancers. Abemaciclib, palbociclib and ribociclib are all given in pill form.

- **mTOR (mammalian target of rapamycin) inhibitors.** mTOR inhibitors are a type of targeted treatment drug that may increase the effectiveness of hormone therapy. The mTOR inhibitor everolimus (Afinitor) is used in combination with the aromatase inhibitor exemestane for postmenopausal women with hormone-positive, HER2-negative metastatic breast cancer. Everolimus is given in pill form.

TREATMENT SIDE EFFECTS

All cancer treatments can cause side effects. It's important that you report any side effects that you experience to your health care team so they can help you manage them. Report them right away—don't wait for your next appointment. Doing so will improve your quality of life and allow you to stick with your treatment plan.

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