

General Management of Breast Cancer

Breast Cancer is not one disease, but comprise of multiple different subtypes, each with different prognosis and treatments. Decisions about the best treatment are based on the results of a number of tests, including the pathology of the tumour obtained from a biopsy or at surgery, and imaging of the body to determine if the cancer has spread to other organs.

The pathology tests performed on your tumour include the following:

- ☞ Size of tumour and number of lymph nodes involved with cancer
- ☞ Estrogen and Progesterone Receptors (*ER and PR*)
Approximate 70% of breast cancer expresses ER or PR. These test results show whether treatment to block estrogen may be effective as anticancer treatments.
- ☞ Human Epidermal Growth Factor Type 2 Receptor (*HER2*)
Approximately 20% of breast cancers over-express HER2. This type of breast cancer may grow more quickly and is more likely to spread to other parts of the body. The cancer may be treated with drugs that target the HER2 protein, in combination with chemotherapy.
- ☞ *Ki67*. This is a marker of the rate of cancer cell growth. It is scored as a percentage. The lower the score, the slower the growth of the cancer cells.
- ☞ *Grade*. This reflects the personality of the cancer. Grade 3 is the most feisty. Grade 1 is most docile. Grade 2 is in between.

Based on these tests, breast cancer is described as one of the following types:

- *Hormone receptor positive (ER or PR positive) or negative (ER or PR negative).*
- *HER2 positive or HER2 negative.*
- *Triple negative (ER, PR and HER2 negative).*

Treatments can be broadly divided into the following

☞ Local therapies

- ★ *Surgery*
- ★ *Radiotherapy*

☞ Systemic therapies

- ★ *Anti-hormonal or Endocrine therapies for ER positive cancers*
These include tamoxifen, aromatase inhibitors (letrozole, anastrozole and exemestane), fulvestrant (Faslodex[®]) and zoladex/goserlin (which suppressed one's ovaries).
- ★ *Chemotherapy*
- ★ *Targeted therapies*
 - ∞ HER2 therapy for HER2 positive cancers; such as trastuzumab (Herceptin[®]), pertuzumab (Perjeta[®]), lapatinib (Tykerb[®]) and TDM1 (Kadcyla[®])
 - ∞ CDK4/6 inhibitors - Palbociclib (Ibrance[®]), Ribociclib (Kisqali[®]), Abemaciclib (Verzenio[®])
 - ∞ mTOR inhibitors - Everolimus (Afinitor[®])
 - ∞ Bone modifying therapies - Denosumab (Prolia[®], Xgeva[®]), Zoledronic Acid

Clinical Trials

Clinical trials are scientific studies in which new treatments are tested in patients to determine if they are safe and effective. Such trials help us answer questions about new cancer therapies, including: what diseases should they be used for? What doses of new drugs are most effective? And which patients can benefit the most from them? Nearly all cancer drugs in use today were tested and made available to patients through clinical trials. Clinical trials are necessary to constantly improve the standards of care for breast cancer treatment, and patients who have previously participated in trials have helped define our current treatment paradigms.

You will be given a patient information sheet to take back with you if there is a suitable clinical trial for you. Should you enrol into the trial, you will be followed up closely by the treatment team, which includes a specialist breast cancer trials nurse.

Participation in clinical trials is optional and free, and the trial sponsors cover the trial medication(s) and routine tests.

We have a *Multidisciplinary Breast Cancer Team* of expert specialists at St Vincent's Hospital. These include Breast Surgeons, Radiation Oncologists, Reconstructive Surgeons and Geneticists. Supporting our team are our Breast Cancer coordinators, Clinical Psychologists, Exercise Physiologists and Dieticians. We will work closely with your local General Practitioner through the course of your therapy. We discuss your case collectively, reviewing your pathology and imaging results. A collective recommendation is then made regarding treatment.

While the traditional order of treatment is surgery first, followed by chemotherapy, radiation therapy, anti-hormonal (endocrine) and in some patients, targeted therapies. However, this order is not set in stone, and chemotherapy is increasingly being used prior to surgery (*See chemotherapy section*). Therapies are sometimes also used in concurrently, such as targeted therapies with chemotherapy or endocrine therapies. Importantly, not all patients require all of these therapies. I will discuss with you the rationale of your personalized treatment plan.

For some patients, we will discuss *Multigene tests*, such as Oncotype Dx[®]. These are tests in which samples of tissue are studied to look at the activity of many genes at the same time. These tests may help predict whether cancer will spread to other parts of the body or recur (come back), and if there will be an additional benefit with chemotherapy above and beyond anti-hormonal therapy, and may guide therapy decisions. Medicare and your health fund do not cover the costs of these tests, which is approximately \$4,500.