TARGETED THERAPY/IMMUNOTHERAPY

The following therapies target specific receptors that control the growth of cancer cells.

Whereas chemotherapy targets all rapidly dividing cells, targeted therapies are less likely to harm healthy cells, because of their specificity.

Biological therapies, one type of targeted therapy, use laboratory-manufactured proteins to harness the body's immune system to help destroy cancer cells. These treatments target molecules on the surface of cancer cells. Other targeted therapies use drugs containing small molecules that enter the cells and block the signals that the cancer relies on for growth.

Targeted therapies for HER2-positive breast cancer

Trastuzumab (Herzuma/Herceptin)

This is the most widely used biological treatment for breast cancer and is used to treat both early and advanced HER2-positive breast cancer. Around 20% of breast cancers have too many copies of the HER2 (Human Epidermal growth factor Receptor 2) gene, which in turn makes too many HER2 proteins (receptors) on the surface of breast cancer cells. These cancers are known as HER2-positive. The receptors receive signals which direct the cells to grow and multiply.

Herzuma is a monoclonal antibody that has been manufactured in a laboratory and has been designed to recognise and bind to the HER2 proteins on the surface of cancer cells. It slows or stops the growth of HER2-positive breast cancer by attaching itself to the receptors and blocking growth signals. It also stimulates the body's immune system to destroy the cancer cells.

A 12-month course of Herzuma to treat early breast cancer has been publicly funded in New Zealand since 2008. In advanced/metastatic breast cancer the treatment is funded for as long as the patient continues to benefit.

Herzuma does not benefit people whose cancers have tested negative for HER2 receptors.

How is Herzuma given?

In early breast cancer Herzuma is given in conjunction with a chemotherapy regimen, then continued every three weeks to complete 12 months of treatment. It is

administered by infusion into a vein or port. The treatment is given in a hospital or clinic, and usually takes about 30 minutes, although the first dose is given more slowly over 90 minutes to check for any adverse reactions.

Herzuma can also be given as a subcutaneous injection, which is injected under the skin in the thigh, over a period of two to five minutes, however this is not yet publicly funded in New Zealand.

Possible side effects:

Infusion reactions. These may include fever and chills, muscle aches, especially with the first dose.
Nausea, vomiting
Headache, dizziness
Shortness of breath
Fatigue
Bruising due to low platelet count
Heart problems. This is a serious but less common side effect. Herzuma can damage the heart muscle and reduce its ability to pump effectively. Your doctor will monitor your heart health before, during and after treatment, and you will have a scan before and during the course of treatment to ensure your heart is functioning properly. Heart problems are more common in people who were treated with both Herzuma and anthracycline chemotherapy, such as Adriamycin.
For more information about Herzuma and possible side effects see the Medsafe consumer information booklet.

Pertuzumab (Perjeta)

This is another monoclonal antibody treatment that is used to treat advanced/metastatic HER2-positive breast cancer. It is also given by intravenous infusion.

Perjeta is used at the same time as Herzuma and docetaxel chemotherapy. Perjeta is currently indicated for patients with HER2-positive metastatic breast cancer who have not received previous anti-HER2 therapy or chemotherapy for their metastatic disease.

As of January 2017, Perjeta is funded for use in the New Zealand public health system, although this applies only to people diagnosed from that date. This decision will be reviewed and BCFNZ is urging Pharmac to extend this cover to those who are already being treated for metastatic HER2-positive disease.

For more information about Perjeta and possible side effects see the Medsafe consumer information: Medsafe consumer information about Perjeta

Trastuzumab emtansine (Kadcyla)/TDM-1

This is known as an antibody drug conjugate, combining an antibody and a chemotherapy drug. It can be used to treat metastatic HER2-positive disease.

Kadcyla uses the monoclonal antibody in trastuzumab to deliver a powerful chemotherapy drug (DM-1) directly to the inside of the cancer cells while minimising the effects on healthy tissues.

Kadcyla has been publicly funded for New Zealanders with HER2-positive advanced breast cancer since 1st December 2019.

For more information about Kadcyla and possible side effects see the Medsafe consumer information: Medsafe consumer information about Kadcyla

Lapatinib (Tykerb)

Lapatinib is a small-molecule drug belonging to a group known as Tyrosine Kinase Inhibitors, which target both HER2 and epidermal growth factor receptor (EGFR) pathways. It is publicly funded for people with metastatic HER2 positive breast cancer that has not been treated with Herzuma or for people who have not been able to tolerate Herzuma in this setting. It is in tablet form, taken orally.

Lapatinib is given in combination with capecitabine (Xeloda) or paclitaxel (Taxol). It can also be given with an aromatase inhibitor.

The most common side effects are diarrhoea, fatigue, nausea and skin rashes.

Lapatinib is beneficial to a small number of people who:

Have cancer that has spread to their brain
Are not able to tolerate trastuzumab (Herzuma) or its mode of delivery (intravenous)
Demonstrate resistance to trastuzumab
Do not respond to trastuzumab.
For more information about Tykerb and possible side effects see the Medsafe consumer information: Medsafe consumer information about Lapatinib

Bone specific therapy (bisphosphonates)

Bisphosphonates are a group of medications that have been commonly used to combat bone loss. They help lower the risk of fracture in people with osteoporosis or who have cancer that has metastasised to the bone.

However, many studies have shown that bisphosphonate therapy can inhibit the development of bone metastases and improve survival when given as adjuvant treatment to post-menopausal women with early breast cancer. This includes women who are having their ovarian function suppressed.

Bisphosphonates can be give intravenously or in tablet form:

Zoledronic acid is given as an infusion every six months for a period of two years and has been funded by Pharmac for this indication since 1st January 2018.
Risedronate is given orally.
Bisphosphonate therapy is now being used in approximately two-thirds of post-menopausal patients. Talk to your specialist team to see if this treatment is appropriate for you.
CDK4/6 inhibitors

Palbociclib (Ibrance)

This is a newer small molecule inhibitor, targeting cyclin-dependent kinases (CDK4/6), which are proteins that inhibit cell proliferation and help mediate endocrine resistance. Indicated for use in post-menopausal women with ER-positive, HER2-negative locally advanced or metastatic breast cancer. It is given in conjunction with an aromatase inhibitor. In women who have had prior endocrine therapy it is given with fulvestrant.

Palbociclib in conjunction with an aromatase inhibitor or fulvestrant showed significant progression-free survival benefit in the PALOMA trials.

This therapy is delivered as a pill, taken once a day for three weeks, followed by a week for recovery before starting again.

Palbociclib has been publicly funded in New Zealand since April 2020. Pfizer offers an Ibrance Assistance programme for eligible patients who have been prescribed Ibrance and have purchased 11 packs from a New Zealand pharmacy. You must be able to provide proof of your purchases to qualify for the rest of your packs for free, as long as you need before your disease progresses.

Pfizer NZ Updated IBRANCETM Patient Assistance Program

PZR0439 Ibrance Assistance Program - Patient 168x210mm v9

Kisqali (ribociclib, formerly called LEE011)

Kisqali, another CDK4/6 inhibitor, can be used in combination with an aromatase inhibitor as initial therapy to treat advanced or metastatic hormone receptor positive, HER2-negative breast cancer in postmenopausal women. Kisqali is a tablet, taken by mouth.

It is not registered for use or funded in New Zealand.

VIDEO

In this webinar, our expert panel looks what you need to know when being treated with Ibrance, from scheduling appointments, negotiating dosages and managing side effects.

Everolimus (Afinitor)

Everolimus belongs to a class of drugs known as mTOR inhibitors, targeting the mTOR proteins that help cancer cells grow and divide. It can be used in post-menopausal women with advanced hormone receptor positive, HER2-negative breast cancer, in conjunction with exemestane (Aromasin). Although it is publicly funded in Australia, it is not funded in New Zealand.

Access to unapproved medicines

Q. Can my doctor obtain a drug that's not approved in New Zealand for me?

A: Yes. Section 25 of the Medicines Act 1981 permits an authorised prescriber – e.g. your doctor – to "procure the sale or supply of any medicine" for a particular patient in their care. "Any medicine" includes approved and unapproved medicines.

Your doctor would contact the company that makes the drug and request it for you (you'll have to pay for it). The medicine can then be imported and used to treat you, without involving government agencies like Medsafe or Pharmac.

However, if a third party (e.g. a New Zealand pharmacy or local distributor) sells or supplies the unapproved medicine to your doctor, they must fill in a form on the Medsafe website saying that they did so.

An example of an unapproved medicine would be Kisqali (ribociclib), approved in the USA in March 2017 for treatment of advanced ER+ breast cancer.

Q. Can my doctor prescribe a drug that's approved in New Zealand, but not approved for breast cancer?

A: Yes. Again, your doctor can prescribe any medicine, but if you're using it for a purpose that's not approved in New Zealand, they need to inform you that it's an unapproved use. Unfortunately, you'd most likely have to pay for the drug yourself.

If using that particular drug for breast cancer would be highly experimental, you'd need to provide written consent to the treatment.

An example is the drug Afinitor (everolimus), which is approved and funded in New Zealand for a type of brain cancer, and approved (but not funded) for kidney and pancreatic cancers. Your doctor can prescribe it for your breast cancer, but you will need to pay for it. Since Afinitor is widely used in breast cancer treatment overseas, it wouldn't be considered experimental and you wouldn't have to give written consent.

For further information visit Medsafe's page on the use of unapproved medicines.