Gemcitabine (Gemzar)

1. **What is gemcitabine?**
   Gemcitabine is a chemotherapy drug used to treat breast cancer. It’s also known by the brand name Gemzar.

2. **Who might be offered gemcitabine?**
   Gemcitabine is used to treat people who have:
   
   - Locally advanced breast cancer (also known as regional recurrence) – breast cancer that has come back and spread to the tissues and lymph nodes (glands) around the chest, neck and under the breastbone (when surgery is not possible)
   - Secondary (metastatic) breast cancer – breast cancer that has spread to other parts of the body
3. Before starting gemcitabine

Before starting your treatment most hospitals will arrange a chemotherapy information session. At this appointment a nurse will discuss how and when your chemotherapy will be given and how side effects can be managed.

You may have bloods tests and some people will have an ECG (electrocardiogram), a simple test that checks your heart rhythm. Your height and weight will also be measured.

Contact numbers will be given so you know who to phone if you have any questions or concerns.

4. How is gemcitabine given?

Gemcitabine is usually given in combination with another chemotherapy drug. This will either be paclitaxel (Taxol) or carboplatin.

Gemcitabine is given intravenously (into a vein). This will usually be as an infusion (drip) into the hand or arm and takes about 30 minutes. Other intravenous methods may be used depending on factors such as how easy it is for the chemotherapy team to find suitable veins, and your preferences.

Read about the different ways chemotherapy may be given.

How long does treatment take?

A cycle (dose) of gemcitabine, with paclitaxel, lasts 21 days. Gemcitabine is given on days one and eight of the cycle. The time between each cycle of treatment gives your body time to recover.

The total number of cycles will depend on your particular situation. Your treatment team will discuss this with you.

5. Side effects of gemcitabine

Like any treatment, gemcitabine can cause side effects. Everyone reacts differently to drugs and some people have more side effects than others. These side effects can usually be managed and those described here will not affect everyone.

If you’re being given other chemotherapy or anti-cancer drugs with gemcitabine, you may also have side effects from those drugs.
If you’re worried about any side effects, regardless of whether they’re listed here, talk to your chemotherapy nurse or treatment team.

Before starting chemotherapy you should be given a 24-hour contact number or told who to contact if you feel unwell at any time during your treatment, including at night or at the weekends.

**Common side effects of gemcitabine**

**Effects on the blood**

Gemcitabine can temporarily affect the number of blood cells in the body.

You’ll have regular blood tests to check your blood count. Blood is made up of red cells, white cells and platelets. If the number of blood cells is too low, your next cycle of treatment may be delayed, or the dose of chemotherapy reduced.

**Risk of infection**

Not having enough white blood cells can increase the risk of getting an infection.

**Contact your hospital immediately if you experience any of the following:**

- A high temperature (over 37.5°C) or low temperature (under 36°C), or whatever your chemotherapy team has advised
- Suddenly feel unwell, even with a normal temperature
- Symptoms of an infection, for example, a sore throat, a cough, a need to pass urine frequently or feeling cold or shivery

Before starting chemotherapy you should be given a 24-hour contact number or told where to get emergency care by your treatment team. You may need antibiotics.

**Anaemia**

Having too few red blood cells is called anaemia. If you feel particularly tired, breathless or dizzy, let your treatment team know.

**Bruising and bleeding**

Gemcitabine can reduce the number of platelets, which help the blood to clot. You may also bruise more easily, have nosebleeds or your gums may bleed when you brush your teeth. Tell your treatment team if you have any of these symptoms.
**Hair loss**

On its own, gemcitabine can cause hair thinning. However, when it’s given with carboplatin or paclitaxel, most people will lose all their hair, including eyebrows, eyelashes and body hair.

Scalp cooling may prevent or lessen hair loss. Not all hospitals offer scalp cooling so ask your treatment team or chemotherapy nurse if this treatment is available and suitable for you.

Read more about hair loss, scalp cooling and looking after your hair.

**Sore mouth and taste changes**

You’ll be given mouthwash to try to reduce soreness in your mouth and gums, and to stop mouth ulcers developing. Good mouth hygiene is very important during treatment. It’s advisable to see your dentist for a check-up before chemotherapy begins. If you do need to have dental treatment during chemotherapy you can talk to your oncologist about the best time to have this.

Gemcitabine can make some food taste different, for example more salty, bitter or metallic. Taste usually returns to normal after you’ve finished treatment, although this may take some time.

Our information on diet during breast cancer includes tips on dealing with taste change.

**Nausea and vomiting**

You may experience nausea (feeling sick) and vomiting (being sick), but many people are not actually sick. You’ll be given anti-sickness medication into your vein or as tablets before the chemotherapy is given, and you’ll be prescribed anti-sickness drugs to take home to reduce nausea or stop it happening. If you still experience nausea or vomiting, contact your treatment team as they may be able to recommend an alternative anti-sickness drug and change your prescription for next time.

**Cancer-related fatigue (extreme tiredness)**

Cancer-related fatigue is extreme tiredness that doesn't go away with rest or sleep. It's a very common side effect of breast cancer treatment and may affect you physically and emotionally. It has many causes, from psychological factors such as the stress of coping with the diagnosis, to physical ones such as the side effects of treatment or progression (growth and spread) of the cancer. If you think you have fatigue, tell your GP or treatment team so you can be fully assessed and offered advice on how to manage your energy levels.
Find out more about managing fatigue.

**Fertility**

If you were diagnosed with locally advanced or secondary breast cancer before you started or completed a family, you may be concerned about your fertility (ability to get pregnant). Depending on your diagnosis and treatment, you may be advised not to get pregnant.

If having children of your own is important to you, and you wish to find out about any possible fertility preservation options, you can discuss this with your treatment team before starting treatment.

Find out more about fertility and breast cancer treatment.

**Menopausal symptoms**

For women who haven’t been through the menopause, gemcitabine can cause menopausal symptoms. This is because it affects the ovaries, which produce oestrogen.

Common menopausal symptoms can include:

- Hot flushes
- Night sweats
- Mood changes
- Joint aches and pains
- Vaginal dryness

You can talk to your breast care nurse or treatment team about ways of coping with any of these symptoms.

**Skin reactions**

Skin rashes can develop, which may itch. Your treatment team can prescribe medication to help with this.

**Swelling (oedema)**

Swelling (oedema) can occur in the feet, hands and (extremely rarely) face. The swelling usually improves once treatment stops but tell your treatment team if it happens.

**Flu-like symptoms**
You may notice symptoms such as headaches, runny nose, tiredness, aching bones and muscles or chills. If your temperature is high, let your treatment team know immediately as you may have an infection that needs treating.

**Breathlessness**

Breathlessness may occur but it’s usually mild and should not need treatment. Some people may develop a cough.

**Effect on the liver**

Gemcitabine may affect how well your liver works. You’ll have regular blood tests to monitor this throughout your treatment. This is a temporary effect and the liver usually returns to normal soon after your treatment has stopped. However, it’s important to let your treatment team know if you have had any liver problems in the past caused by hepatitis or excess alcohol use.

**Effect on the kidneys**

Occasionally urine tests can show an increase of protein or blood in the urine, but this is not likely to cause you any problems.

**Less common side effects of gemcitabine**

**Diarrhoea or constipation**

Contact your chemotherapy team if you have four or more episodes of diarrhoea within a 24-hour period.

**Loss of appetite**

You may lose your appetite while having gemcitabine. Talk to your treatment team about this. They can give you advice and information to help deal with loss of appetite or refer you to a dietitian if needed.

**Driving and using machinery**

Gemcitabine may make you feel sleepy, so could possibly affect your ability to drive or operate machinery safely. Avoid driving or using machinery until you are sure gemcitabine doesn’t make you feel sleepy.
Rare side effects

Allergic reaction
If you have an allergic reaction to gemcitabine, it will probably happen during or within the first few minutes of your treatment and is most likely the first or second time you have the drug. Reactions can vary from mild to severe, but severe reactions are uncommon.

You’ll be monitored closely so that any reaction can be dealt with immediately.

Symptoms of an allergic reaction include:

- Flushing
- Skin rash
- Itching
- Back pain
- Lip or tongue swelling
- Shortness of breath
- Faintness
- Fever or chills

If you have a severe reaction, treatment will be stopped immediately.

Medication can be given before future treatments to reduce the risk of further reactions.

Heart changes
Gemcitabine can affect the way your heart works and may not be suitable for people with existing heart conditions.

Heart problems as a result of gemcitabine are not common. However, because they can happen, before you start chemotherapy your treatment team may arrange a heart (cardiac) function test to check your heart is working normally.

6. Blood clots
People with breast cancer have a higher risk of blood clots. Their risk is higher because of the cancer itself and some treatments for breast cancer. If the cancer has spread to other parts of the body (secondary breast cancer), this also increases the risk.

Blood clots can be harmful but are treatable so it’s important to report symptoms as soon as possible.
If you experience any of the following symptoms contact your local A&E department, GP or treatment team straight away:

- Pain, redness/discolouration, heat and swelling of the calf, leg or thigh
- Swelling, redness or tenderness where a central line is inserted to give chemotherapy, for example in the arm, chest area or up into the neck
- Shortness of breath
- Tightness in the chest
- Unexplained cough (or coughing up blood)

Find out more about blood clots.

7. Sex, contraception and pregnancy

You’re advised not to become pregnant while having treatment because Gemcitabine can harm a developing baby. If you haven’t been through the menopause, talk to your team about the most suitable method of contraception for you. It’s still possible to become pregnant even if your periods become irregular or stop.

You can still have sex during treatment. It’s thought that chemotherapy drugs can’t pass into vaginal fluids or semen, but this can’t be completely ruled out as chemotherapy drugs can pass into the blood and some other body fluids. Most hospital specialists will advise using barrier methods of contraception, such as condoms during treatment, and for a few days after chemotherapy is given.

Find out more about how breast cancer and its treatment can affect sex and intimacy and read our tips on how to manage these changes.

8. Travel and vaccinations

If you’re planning a holiday or need to travel overseas, check with your treatment team first.

You shouldn’t have any live vaccines while you’re having chemotherapy. Live vaccines include mumps, measles, rubella (German measles), polio, BCG (tuberculosis), shingles and yellow fever.

Live vaccines contain a small amount of live virus or bacteria. If you have a weakened immune system, which you may do during chemotherapy, they could be harmful.

It’s safe to have these vaccinations six months after your treatment finishes. Talk to your GP or treatment team before having any vaccinations.
If anyone you have close contact with needs to have a live vaccine speak to your treatment team or GP. They can advise what precautions you may need to take depending on the vaccination.

**Flu vaccination**

Anyone at risk of a weakened immune system, and therefore more prone to infection, should have the flu vaccine. This includes people due to have, or already having, chemotherapy. The flu vaccine is not a live vaccine so doesn’t contain any active viruses. Talk to your chemotherapy team or breast care nurse about the best time to have your flu jab.

**9. Further support**

Your chemotherapy team and breast care nurse can help with any questions you have. You can also call our free Helpline on **0808 800 6000** for information and support.

On our online Forum, you can find people going through treatment at the same time as you on the monthly chemotherapy threads.

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