MEDICINE INFORMATION

Fludarabine and cyclophosphamide conditioning

Patient information about fludarabine and cyclophosphamide before a planned cell treatment, including blood counts and what to do if you feel unwell.

At a glance

Treatment	Fludarabine + Cyclophosphamide
When it may be used	This pair can be used to prepare for CAR T-cell therapy, where specially prepared immune cells are returned to the body.
How it is given	Fludarabine and cyclophosphamide are given by drip into a vein before the planned cell infusion.
Before you start	Ask for the dates of chemotherapy and cell infusion and get written instructions for urgent symptoms.

What this treatment is and how it works

The two chemotherapy medicines reduce the number of immune cells before certain cell treatments. In CAR T-cell therapy, this step is often called lymphodepletion.

When it may be used

This combination can prepare the body for CAR T-cell therapy. It reduces some of your existing immune cells before the specially prepared cells are given. The cell therapy and its safety checks follow a separate plan. Ask which schedule applies to the product you will receive.

Before treatment

Tell the team about kidney or bladder problems, infections and all medicines.

How treatment is given

The drugs are given through a vein over the days before the planned cell infusion. The team will explain whether you need fluids, bladder protection or other supportive medicines.

Tests and monitoring during treatment

The team checks blood counts, kidney and liver function and for signs of infection. They also check you are well enough to proceed with cell treatment.

If you need a blood transfusion

You need irradiated blood components when you have fludarabine before CAR T-cell treatment. If you need red cells or platelets, tell the transfusion team about your treatment so they can arrange irradiated components. These are specially treated before transfusion to prevent a rare, serious reaction. Ask how long the precaution applies and whether you should carry a transfusion alert card or letter.

Side effects

Common or more frequent side effects

- **Changes in blood counts.** Treatment can lower the white cells that fight infection, the red cells that carry oxygen and the platelets that stop bleeding. You may feel tired or get breathless sooner than usual. Let the unit know about nosebleeds, new bruises or small red or purple spots. Fever or shaking chills needs a call to the urgent number even if your next blood test is already booked.
- **Nausea and vomiting.** Check when to take prescribed anti-sickness medicines and which one to use if nausea begins between visits. Taking small, frequent sips may be easier than drinking a whole glass. Call if vomiting keeps returning or stops you from keeping fluids or essential medicines down.
- **Taste and appetite changes.** Your favourite foods may taste different. Try smaller meals that suit you and ask the team for nutrition support if you are losing weight or avoiding most foods. Call if you cannot keep liquids down, you are taking much less than usual, or your urine becomes very scant.

Other reported side effects

Tell staff about blood or pain when passing urine, problems drinking or a new rash. Tell the team if symptoms start before the cell infusion.

Serious effects to recognise

- **Bleeding or pain from the bladder.** Cyclophosphamide can irritate the bladder. Report blood, clots, burning or difficulty passing urine. If your team gives mesna or advises a fluid plan, follow the written instructions.
- **Fever or confusion after cell therapy.** After your CAR T-cell infusion, fever and changes in alertness, speech, handwriting or movement have specific emergency instructions. Use the cellular therapy unit’s contact card and tell other healthcare workers about the infusion, even if you also had chemotherapy on earlier days.

Contact the team promptly if you have unusual bleeding.

When to seek urgent help

Call your hospital's 24-hour cancer care number straight away for fever, chills, bleeding, blood in urine or feeling suddenly unwell. After cell infusion, use the cell therapy team's specific emergency instructions, especially for fever or changes in speech, thinking or alertness. Follow your hospital's written temperature instructions. If you have no written threshold, call at 37.5°C (99.5°F) or above, or below 36°C (96.8°F). Call if you feel very unwell even when your temperature is normal.

Seek emergency care for severe breathing difficulty, swelling of the face or throat, chest pain, collapse or bleeding that will not stop.

Practical advice for this treatment

Confirm the next step after the chemotherapy

Fludarabine and cyclophosphamide may be used to lower the number of some immune cells before chimeric antigen receptor (CAR) T-cell therapy. Ask for dates for the conditioning doses, the cell infusion and the first checks afterwards. Only your cellular therapy team can decide whether an infection or schedule change makes a delay necessary.

Separate symptoms during conditioning from those after CAR T cells

Fever during conditioning can be a sign of infection. Fever after CAR T-cell treatment can also signal an immune reaction called cytokine release syndrome. Call the cellular therapy team urgently according to its instructions. After the cells, report confusion, a change in handwriting, difficulty finding words or unusual sleepiness straight away.

Plan for a caregiver and local accommodation if needed

Ask how long you need to stay near the treatment centre, whether someone must stay with you, and when it is safe to drive. Keep the centre's emergency details and treatment card with you when going outside the hospital. Ask the team to specify special blood component requirements.

Medicines, interactions and vaccinations

Check with the cell therapy pharmacist before starting medicines, supplements or vaccines. Follow the timing for infection prevention and other prescribed medicines.

Everyday life

Plan accommodation and a caregiver if your cell therapy team requires it. Keep the treatment alert card, contact number and instructions nearby.

Pregnancy, fertility and breastfeeding

Discuss fertility preservation and obtain advice on contraception and breastfeeding before starting the full cell therapy plan.

After treatment

Ask about recovery of blood counts, vaccines and whether you need ongoing infection prevention. Follow the separate guidance for the cell treatment you receive.

Frequently asked questions

What does lymphodepletion mean?

It means reducing some immune cells to prepare for the planned cell treatment.

Is this chemotherapy itself the CAR T-cell infusion?

The chemotherapy prepares your body before the separate CAR T-cell infusion. Keep the cell therapy team's emergency card and contact details. Follow that team's specific advice for symptoms after the cells are given.

What if I get a fever before the cells are given?

Call the team promptly so they can assess infection and decide what happens next.

What if I get a fever after CAR T cells?

Follow the urgent CAR T-cell instructions immediately. It can be due to infection or an immune reaction.

What if a caregiver notices I am having trouble speaking?

Get urgent help and tell staff about the recent cell therapy.

Do I need to stay close to the hospital?

Ask your cell therapy team about distance, travel and caregiver requirements.

Individual medicine guides

- Fludarabine
- Cyclophosphamide

Sources and further reading

Read this guide alongside your hospital's plan. Ask your pharmacist to confirm the exact product dispensed in India and follow the instructions for that product.

Summary of Product Characteristics (SmPC) and prescribing information

- Fludarabine phosphate injection or infusion - Irish HPRA SmPC
- Cyclophosphamide injection - UK SmPC
- Mesna injection - UK SmPC
- Fludarabine injection - US prescribing information

Clinical protocols and other references

- eviQ axicabtagene ciloleucel CAR T-cell therapy protocol

- British Society for Haematology guideline on irradiated blood components
- Canadian National Advisory Committee recommendations on irradiated blood components

Additional sources

- eviQ patient information about an example CAR T-cell plan using these medicines

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