MEDICINE INFORMATION

MTR (methotrexate, temozolomide and rituximab)

Patient information about MTR for lymphoma of the brain or spinal cord, including methotrexate clearance and home capsules.

At a glance

Treatment	Methotrexate + Temozolomide + Rituximab
When it may be used	MTR has been studied in primary central nervous system lymphoma.
How it is given	Methotrexate and rituximab are given by drip into a vein. You take temozolomide capsules by mouth.
Before you start	Bring a list of prescribed and non-prescription medicines.

What this treatment is and how it works

MTR combines high-dose methotrexate and temozolomide chemotherapy with rituximab, an antibody that targets CD20 on certain lymphoma cells.

When it may be used

This is lymphoma that starts in the brain, spinal cord or related structures. The next step depends on response and fitness.

Before treatment

Tell the team about kidney problems, hepatitis B, infections and any changes in vision, thinking or movement.

How treatment is given

Methotrexate and rituximab are given through a vein, and temozolomide is taken as capsules. Methotrexate treatment includes fluids, measures to make urine less acidic and a protective medicine called folinic acid. The team checks that methotrexate has cleared safely.

Tests and monitoring during treatment

Blood tests track methotrexate levels, kidney function and blood counts. The team can check liver tests and use imaging or other tests to see how lymphoma responds.

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.
- **Sore mouth and changes in eating.** Your mouth may feel tender or dry, and some foods may sting. A soft toothbrush and the mouth care your unit recommends can help. Tell the team about ulcers, a white coating, or trouble swallowing so it can assess for mouth infection and help with pain. If you cannot drink enough, contact the unit promptly.
- **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.

Other reported side effects

Tell the team if drinking or taking capsules becomes difficult. Report a rash, new diarrhoea or a change in urine output.

Serious effects to recognise

- **Methotrexate staying in the blood for longer.** After high-dose methotrexate, blood tests track how quickly the drug leaves your body. Slower clearance can worsen kidney injury or lead to mouth sores, low blood counts and other effects. The team may extend fluids or folinic acid rescue. Tell staff about reduced urine or symptoms that limit how much you can drink.
- **Reactions and reactivation of hepatitis B.** Tell staff promptly about wheeze, rash, shivering or faintness during a rituximab infusion. Tell the team about any previous hepatitis B infection so it can plan testing or prevention. Report unexpected yellow eyes or skin to the unit.

Tell the team about new changes in vision, thinking or movement as soon as they happen.

When to seek urgent help

Call your hospital’s 24-hour cancer care number straight away for fever, chills, reduced urine, severe mouth soreness, repeated vomiting, confusion or new weakness. Seek emergency help for seizures or sudden stroke-like symptoms. 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

Plan to stay until methotrexate clears

High-dose methotrexate requires fluids, urine checks and folinic acid rescue to protect healthy cells. The team tests how much methotrexate remains in the blood. Discharge may take longer if levels fall slowly or kidney function changes. In serious delayed clearance, the team may consider a rescue medicine called glucarpidase.

Keep the home medicines separate

Temozolomide may be taken on selected days. Read the calendar with your pharmacist so you can separate those days from any folinic acid rescue doses. Call promptly if you miss or vomit a rescue dose. Check other medicines, including anti-inflammatory painkillers and some antibiotics, before the methotrexate visit.

Ask someone to help you track changes

Central nervous system lymphoma and its treatment can affect memory, vision, movement or speech. Keep a brief record of your usual symptoms and report new or rapidly worsening changes. A seizure, sudden weakness or sudden difficulty speaking needs emergency care.

Medicines, interactions and vaccinations

Ask before using anti-inflammatory painkillers, acid-reducing medicines, some antibiotics or supplements. Ask when any medicines temporarily stopped around methotrexate can be restarted. Check before vaccines.

Everyday life

Keep a separate calendar for capsules and infusions. Ask a caregiver to help track medicines if symptoms make concentration or memory difficult.

Pregnancy, fertility and breastfeeding

Ask about fertility, contraception and breastfeeding before starting and for precautions covering all medicines.

After treatment

Ask how the team will measure response and whether further treatment is planned. Keep any infection, hepatitis B or neurological follow-up appointments.

Frequently asked questions

Why am I asked to stay for blood tests?

Blood tests show when the methotrexate level is low enough to stop extra monitoring and folinic acid rescue. If it clears more slowly than expected, the team may change the fluids or rescue medicine and, in selected cases, prescribe an additional medicine called glucarpidase.

Can I take my usual painkiller?

Check with the pharmacist before taking it. Some medicines slow methotrexate clearance.

What if I vomit a temozolomide capsule?

Call the unit for advice before taking a replacement.

Why am I given folinic acid?

It helps protect healthy cells after high-dose methotrexate.

What if my speech or vision suddenly changes?

Seek urgent assessment. Sudden neurological changes should be treated as an emergency.

Does treatment end after MTR?

Ask what the team is considering after response testing. Some people receive further treatment to consolidate the response.

What if I have already been treated for hepatitis B?

Tell the team before rituximab. It can reactivate hepatitis B even if the infection is no longer causing symptoms. The team will review tests and whether you need antiviral medicine.

Individual medicine guides

- Methotrexate
- Temozolomide
- Rituximab

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

- Methotrexate injection for systemic use - UK SmPC
- Temozolomide (Temodal) capsules - UK SmPC
- Rituximab (MabThera) - EU SmPC
- Folinic acid (calcium folinate) injection - UK SmPC
- Folinic acid (calcium folinate) tablets - UK SmPC
- EMA Temodal product information

Clinical protocols and other references

- eviQ high-dose methotrexate toxicity guidance

Additional sources

- CALGB 50202 study of methotrexate, temozolomide and rituximab
- EHA-ESMO primary central nervous system lymphoma guideline

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Review record updated: 14 November 2026 · Editorial review policy