

Clozapine & Blood Monitoring

Patient Information leaflet

What is clozapine?

Clozapine is an antipsychotic medication, commonly known by the brand name (Clozaril®, Denzapine® and Zaponex®). Clozapine is reserved to treat schizophrenia in patients who are unresponsive or intolerant to at least two other antipsychotics e.g. they may have experienced unpleasant side effects or the medication did not make an improvement in their symptoms. This is referred to as Treatment Resistant Schizophrenia. Clozapine is also licensed for the treatment of psychosis in Parkinson's disease.

What is a clozapine assay?

A clozapine assay measures the amount of clozapine in a patient's blood. It also looks at the balance between clozapine and the breakdown product norclozapine, (clozapine is broken down into norclozapine by the liver). The balance between clozapine and norclozapine is important as it helps your healthcare professional make sure the dose is right for you.

Why is clozapine assay monitoring important?

Having an awareness of the plasma clozapine and norclozapine blood measurement is useful:

- To ensure your clozapine dose is optimised (ageing affects the drug distribution and metabolism)
- To assess your compliance with clozapine
- To assess the impact of any smoking habit changes on clozapine
- To identify any dose-related adverse effects including constipation, drowsiness, seizures, hyper salivation especially in the presence of drug-drug interactions, reduced clearance of clozapine
- To investigate suspected clozapine toxicity

When should the blood sample be taken for the clozapine



Immediately before a morning dose OR 12 hours after your dose

- **If you are taking clozapine twice daily, the blood sample should be collected immediately before a morning dose**
- **If you are taking clozapine once a day, the blood sample should be collected 12 hours after your dose**
- **The time the bloods are taken can influence the interpretation of the clozapine plasma level results. Therefore it is really important that blood samples are taken 12 hours after a dose.**
- **Tell your healthcare professional if you took a dose within the last 11 hours or took a dose greater than 13 hours ago. Inform the nurse and the blood sample can be taken another day.**
- **If the sample is taken less than 12 hours after a clozapine dose has been taken, the clozapine levels will be falsely raised. Alternatively, if the sample is taken more than 12 hours after the last dose, the level will appear low.**

What is considered a failed blood

- If the blood sample is taken longer than 13 hours after the last dose or less than 11 hours after the last dose of clozapine
- If the blood sample is taken when the dose has not been stable for at least the previous 5 days (the dose needs to be stable for at least 5 days)

What is full blood count monitoring?

The clozapine assay should not be confused with the regular compulsory monitoring of full blood counts which is collected every week for the first 18 weeks, then every 2 weeks for up to 12 months and then every 4 weeks. This full blood count measures the number of white blood cells or neutrophils in your blood. These results are categorised into 3: **red**, **amber** or **green**.

Red	This means you have a low number of white blood cells. The blood monitoring advisors and pharmacists will contact your doctor straight away. Your treatment will be stopped until a retest result is available. If the retest confirms white blood cells are still low, you will not be able to have clozapine again. Your treatment team will monitor you closely until your white cell count returns to normal.
Amber	Your level is within the normal range, but needs to be rechecked. You can keep taking your tablets, but you will need twice weekly blood tests until everything is okay and a green result is obtained.
Green	Normal blood test – you can continue to take your tablets

Regular full blood count is important to check the number of white blood cells you have. A drop in your level may not cause symptoms until an infection develops. Having your levels checked regularly means changes can be spotted quickly. You will not be allowed to take clozapine unless you have a recent blood result.

References

Printable leaflets from
 Choice and medication



1. Clozapine and the role of Therapeutic Drug Monitoring Approved by Drug & Therapeutics Committee ,Tees, Esk and Wear Valleys NHS Foundation (October 2023). Available at:
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2. www.choiceandmedication.org. (2024.). Essex Partnership University NHS Foundation Trust Home. [online] Available at:
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3. What to expect from Clozaril[®]. (July 2021.). Available at:
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