

Shalamar Hospital is striving to provide our patients quality health care, at lowest possible costs. Our hospital is continually active in pioneering new treatments and therapies to improve the lives of people in our community.



IS IT SAFE TO TAKE CMZ OR PTU LONG-TERM?

In theory, there is no reason why not, provided your thyroid gland remains well controlled. You will require regular clinic visits and blood tests every six to twelve months initially, under the supervision of a specialist, as doses may need to be adjusted. Once you are stable on a low maintenance dose, you may be discharged for follow-up by your doctor. However, you will remain at risk of side effects. Some people prefer radioactive iodine as a simpler solution.

CAN CHILDREN TAKE ANTITHYROID DRUGS?

Yes, children can take antithyroid drugs. CMZ or PTU is usually the starting treatment for a child with an over-active thyroid gland. The usual dose used is CMZ 0.5-1mg per kg bodyweight per day or PTU 5-10mg per kg bodyweight per day. The same considerations apply for children as for adults, except PTU is not recommended for children unless they are allergic to CMZ as it carries an increased risk of liver damage. Here are some important points to keep in mind:

1. Your doctor will most likely refer you to an endocrinologist, a specialist in thyroid and other endocrine disorders.
2. It is crucial to take your tablets every day to maintain your health and ensure accurate blood test results.
3. Some medications can affect blood test results, so it's important to inform your doctor of all over-the-counter or non-prescription drugs you're taking.
4. An abnormal blood test result may be due to common illnesses, which can affect the result.
5. If you experience a sore throat, mouth ulcers, or an unexplained fever, you must see a doctor immediately and request a white blood cell count.
6. Yellowing of the eyes or skin should prompt you to see a doctor and request a liver enzyme test.
7. If you're pregnant or planning to conceive, you should inform your doctor, as your medication may need to be adjusted and you may need more frequent blood tests.
8. You should not be on 'block and replace' treatment if you're pregnant or planning to conceive.
9. Thyroid problems tend to run in families, so if any family members are unwell, they should be encouraged to consult their doctor to determine whether thyroid testing is necessary.

Hyperthyroidism and Anti-Thyroid Drugs

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Hyperthyroidism is characterized by the thyroid gland producing an excess of thyroid hormones beyond the body's requirements, also known as thyrotoxicosis or an overactive thyroid.

WHICH MEDICATIONS ARE UTILIZED TO MANAGE HYPERTHYROIDISM?

The two common antithyroid drugs used in Pakistan are Carbimazole (CMZ) and Propylthiouracil (PTU). These medications function by diminishing the amount of thyroid hormone produced and released into the bloodstream. They can be used for a short period in preparation for radioactive iodine treatment or surgery or for a prolonged duration with the aim of a lasting cure for patients with Graves' disease, a form of hyperthyroidism that can be cured after a course of medication. Carbimazole is typically the first-choice drug; however, if it is not tolerated or there are pregnancy plans, PTU is used. While a specialist, usually an endocrinologist, should handle all hyperthyroidism cases, antithyroid medications are usually prescribed on the advice of a specialist, although sometimes a general practitioner may prescribe them. Initially, patients are prescribed a high dose of either CMZ or PTU, depending on the specific circumstances. Within six to eight weeks, the overactive gland should be controlled. A follow-up visit with a doctor is recommended a few weeks after starting the therapy to assess how the body is adjusting and to repeat the thyroid function blood test. If there is improvement, the medication may be adjusted through either titration or block and replace methods. Titration involves reducing the dose of the drug to the lowest amount necessary for normal thyroid function, while block and replace involves taking antithyroid drugs to stop the thyroid gland from producing thyroid hormone and taking levothyroxine to replace the hormone. Block and replace is not recommended during pregnancy because high doses of antithyroid drugs can cross the placenta and cause the baby to develop an underactive thyroid. Patients usually continue with antithyroid drugs alone for up to 18 months or on block and replace therapy for six to 12 months. There is a 30-50% chance of having no further problems with the thyroid after a single course of antithyroid drugs for patients with Graves' disease. Regular check-ups and blood tests are necessary for the next six to 12 months to detect any potential relapses. After one year of normal thyroid function and being symptom-free, no further check-ups are required other than occasional thyroid blood tests. However, if any symptoms of hyperthyroidism appear in the future, it is important to see a doctor and request a blood test. Patients who were previously hyperthyroid may have become accustomed to an increased food intake without weight gain due to their increased metabolism. Therefore, after their thyroid function has been normalized through any form of treatment, they may need to reduce their food intake to avoid unwanted weight gain.

WHICH PATIENTS ARE AT HIGHER RISK OF RELAPSE?

Patients with difficulty controlling hyperthyroidism with drugs, those who require high doses of treatment, those with a large thyroid gland, thyroid eye disease, and high TSH receptor antibodies are more likely to experience ongoing problems. Smokers are up to three times more likely to experience relapse than non-smokers. Women and individuals over the age of 40 appear to have a lower likelihood of relapse following treatment. These factors should be

taken into account when deciding whether to proceed with more definitive treatment options, such as radioiodine or surgery, particularly for women who are planning to become pregnant.

IS THERE A DIFFERENCE BETWEEN THE EFFECTIVENESS OF THE TWO DRUGS?

Most doctors usually prescribe CMZ as the first choice drug as it has a quicker onset of action and is more convenient to take. CMZ can be taken once daily when the overactive gland is under control, requiring fewer tablets than PTU. CMZ is currently available in 5mg and 20mg tablets, which means that a daily dose of 40mg would only require two tablets taken once a day. PTU, on the other hand, only comes in 50mg tablets and is usually taken two or three times a day. Therefore, an equivalent PTU dose of 400mg daily would require eight tablets taken in divided doses. If a patient is intolerant to CMZ, PTU is usually used instead. PTU is recommended during the first three months of pregnancy, and as a second-line option in breastfeeding women who require high doses of treatment. However, both PTU and CMZ are associated with birth defects, though the effects of PTU are generally milder. Women who have not yet started a family may want to discuss radioiodine treatment as an option to reduce exposure during pregnancy and breastfeeding.

CAN YOU DESCRIBE ANY POTENTIAL SIDE EFFECTS OF THE DRUGS?

Minor side effects such as altered taste sensation or nausea can occur with both drugs. However, the most common significant side effect is a rash, which affects around 5 out of 100 people who take the drug. If this occurs, the other drug may be used instead.

The most serious potential side effect of both drugs is agranulocytosis, a condition where white blood cell counts drop and increase the risk of infection. This is a rare occurrence, affecting less than 1 in 500 people and typically during the first three months of treatment. If you experience a sore throat, mouth ulcers or unexplained fever, stop taking the tablets immediately and seek medical attention. Serious liver injury has also been reported, particularly with PTU during the first six months of taking the drug. If you notice any yellowing of the eyes or skin, see your doctor immediately. Although regular monitoring of blood count or liver function is not recommended due to the unpredictability and rarity of these side effects, doctors may perform a baseline test to help them monitor future changes.

HOW IS INTOLERANCE TO BOTH DRUGS TREATED?

In the rare event that you are intolerant to both CMZ and PTU, the solution may be early radioactive iodine or surgery. Your specialist will provide careful preoperative treatment and close supervision.

WHAT HAPPENS IF HYPERTHYROIDISM RETURNS?

If your hyperthyroidism returns, you may be restarted on one of the drugs until your thyroid function returns to normal. However, it is unlikely that your thyroid will ever function normally without ongoing treatment. Definitive treatment options like radioactive iodine, which is given in most cases, or surgery may be recommended by your doctor. You should discuss the options with them.