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SOME FACTS ABOUT IMURAN (azathioprine) and PURINETHOL (6-mercaptopuine)

Many patients are not as well informed about prescription medications as they ought to be. We believe the more you know about your medications, the better. This leaflet has been written to help you understand more about what Imuran and Purinethol are and the importance of taking them properly.

If any of the information in this leaflet causes you special concern or if you want additional information about your medicine and its use, check with your doctor or pharmacist.

Remember to keep all prescription drugs out of reach and sight of children when not in use. Store Imuran or Purinethol in the original labeled container in a cool dry place. Protect from light. Always read the label before using.

What are Imuran and Purinethol?

Imuran was introduced in 1968 to prevent rejection of kidney transplants. Imuran and Purinethol are similar in their actions. They are interchangeable drugs that doctors use to weaken an overactive immune system. They are used to treat severe cases of rheumatoid arthritis, systemic lupus, Crohn's disease, ulcerative colitis, and other "autoimmune disorders. These drugs are usually restricted to patients who have failed to respond adequately to conventional treatment.

The generic name of Imuran is azathioprine (ay za THI oh preen). Each tablet contains 50 milligrams and can easily be broken in half if needed. After being absorbed, Imuran is changed by the liver to 6-mercaptopurine, or 6-MP. This form of the drug is available by prescription and called Purinethol.

How do they work?

Imuran and Purinethol suppress the immune system and are important tools in the long term treatment of inflammatory bowel disease. Although their exact mechanism of action is not known, it is thought that by inhibiting the immune system, these drugs suppress the "overactive" immune reaction that is responsible for these disorders.

What Imuran and Purinethol are not

These drugs are not the same as prednisone. But, they do weaken the immune system, as does prednisone. This allows your doctor to reduce your dose of prednisone resulting in fewer side effects.

Imuran and Purinethol are not habit-forming. They do not cause drowsiness and will not affect your driving or working. They do not cause sexual impotence. There are no restrictions on exposure to sunlight.

Taking Imuran properly

1. *Imuran and Purinethol are best taken with food.* They can irritate the stomach lining and therefore should be taken with food, which serves as a buffer and reduces the irritation. The tablets may be crushed if necessary. There are no food or beverage restrictions. They can be taken with milk. They do not interact directly with alcohol or tobacco.

2. *Take the dose as prescribed once daily.*

There is no fixed rule for the correct dose of Imuran and Purinethol. The average dose is one to three tablets daily, but each case is different. Your doctor will determine what initial dose is best for you depending on the activity of your disease, your age, weight, any other medical conditions you may have, and your response to treatment-**do not alter the dose on your own**. The goal, of course, is to control your illness with the lowest effective dose of drug possible. Your doctor will routinely reassess what dose is necessary for you. Your doctor will routinely reassess what dose is necessary for you. If two tablets are prescribed, they may be taken at the same time once daily.

3. *If you forget a dose, take the normal dose of the medication as soon as you remember* and resume your normal schedule the following morning. If you do not remember until the next day, skip the missed dose.

4. *Do not expect immediate results.* These "immunosuppressive" do not work right away. In fact, it may take up 3-6 months to see a beneficial response. You can plan to be on these drugs for an extended period of time.

5. *Keep all your appointments.* Imuran and Purinethol are only given under close supervision because of the risk of serious side effects. Periodic blood tests are mandatory for the safe use of these drugs. Report for examinations as directed.

6. *Be sure all of your doctors know that you are taking this drug.* This a good general rule, but it is especially important for you to remember if you are away from your doctor and require major surgery or develop a severe infection. If you are to be on Imuran or Purinethol for a long period of time, carry a reminder with you on a medic-alert bracelet or in your wallet. (Medic-Alert Foundation can be contacted at their toll-free number 800-344-3226)

What are the side effects?

This is the main concern. When taken over a long period of time (months to years) Imuran and Purinethol can cause side effects. But when Crohn's disease or ulcerative colitis become difficult to control with prednisone, the benefits of these medications far outweigh the potential risks. For difficult to manage conditions, Imuran and Purinethol can be a miraculous medication. In general, the risk of side effects depends on the length of time you take Imuran and the amount you take.

These side effects can occur with short-term use but fortunately are usually reversible as the dose of Imuran is decreased:
skin rash, loss of appetite, nausea, vomiting, diarrhea

These side effects are more serious. They usually occur after long-term usage. Immediately report any of these symptoms to your doctor:

bone marrow depression:

severe fatigue, weakness, fever, severe
sore throat, abnormal bleeding or
bruising, sores on lips and in mouth

liver damage:

yellow eyes and skin, jaundice, dark-
colored urine

drug-induced pneumonia:

severe persistent cough, shortness of
breath

pancreatitis:

severe stomach pain with nausea and vomiting

Other side effects not listed above may also occur in some patients. If you notice any other effects, check with your doctor, nurse, or pharmacist.

You can help limit side effects by taking the medication exactly as prescribed and reporting any problems to your doctor. Report promptly any indication of a developing infection – fever, chills, lip or mouth sores, etc.

What about cancer?

There may be slightly increased risk of some cancers such as lymphoma or Hodgkin's disease after long-term use of Imuran and Purinethol. However, a scientific study done at the University of Pennsylvania in 2001 studied over 1400 patients with IBD and found no increased risk of these cancer in patients taking Imuran and Purinethol. There is still some controversy about this, so you must be willing to accept this possible risk when taking these medications. These powerful drugs are only used in patients with difficult-to-control disease when the benefits outweigh the risks.

Precautions

Do not take Imuran or Purinethol if you are pregnant or plan to become pregnant in the near future. Birth defects have been reported in animals that received large doses of these drugs during pregnancy. These drugs also have the potential for producing birth defects in human offspring. Use of these drugs is not recommended during pregnancy. There is a possibility that birth defects may occur if either the mother or father is using these drugs at the time of conception. Use of birth control is recommended while taking this drug. Do not breast feed while on this drug.

Imuran or Purinethol may reduce the body's ability to fight other infections as well. If you are prone to infections or develop any signs of infection, such as fever, fatigue, cough, or the flu, while taking *Imuran or Purinethol* you need to inform your doctor immediately. Live virus vaccines such as varicella, measles, mumps, rubella and zoster should be avoided but inactivated vaccines, including yearly flu shots (not via nasal spray) are recommended.

Notify your doctor if you recently had chicken pox or shingles. Be sure to inform them if you are taking Allopurinol (Zyloprim), Dilantin, Rifampin or Phenobarbital. These drugs may increase the blood levels of Imuran, which can lead to serious side effects. Tell your doctor if you any kind of active infection, have a history of bone marrow disorders, severe liver or kidney disease or are pregnant or plan to become pregnant in the near future. Be aware that Imuran and Purinethol can lessen the effects of the anticoagulant drug Coumadin (Warfarin).

Remember

Imuran and Purinethol are very powerful drugs with many helpful properties, but as with all potent medication, side effects may occur. You can best limit problems with these medications by taking them exactly as prescribed. If you have any question or concerns, please discuss them with your doctor.