

What is azathioprine?

Azathioprine is an immunosuppressive medication that decreases the actions of the body's immune system. Drugs that suppress the immune system are used in patients with myasthenia gravis (MG) because MG is an autoimmune disorder that results from the production of abnormal antibodies. Azathioprine is available in a generic formulation or as the brand name, Imuran®.

How does azathioprine work?

Under normal circumstances, the immune system produces antibodies that protect the body against infection from invading bacteria and viruses. In autoimmune MG, the immune system produces abnormal acetylcholine receptor (AChR) antibodies. These AChR antibodies destroy or block certain receptor sites needed for neuromuscular transmission and strong movement of muscle groups. The result is the fluctuating and fatigable muscle weakness of MG. Azathioprine suppresses the immune system and reduces the production of AChR antibodies. This allows the receptors to regenerate and function more normally in neuromuscular transmission and results in a return of muscle strength.

After a period of approximately 3 to 12 months, the MG patient should notice a gradual improvement in muscle strength and a decrease in the severity of symptoms if azathioprine is working. This improvement may decrease the need for other MG treatments.

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The MGFA mission is to facilitate the timely diagnosis and optimal care of individuals affected by myasthenia gravis and closely related disorders and to improve their lives through programs of patient services, public information, medical research, professional education, advocacy and patient care.

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Azathioprine

M G

Common questions patients with myasthenia gravis ask about azathioprine.

F A



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What are some special considerations when taking azathioprine?

Since azathioprine is a strong medicine, the doctor and patient must consider its risks and benefits. The doctor will want to perform a physical examination and gather a complete medical history and learn about any chronic or serious medical conditions and any medications that the patient has been taking, especially allopurinol (Zyloprim®), ACE inhibitors such as Lotensin®, Zestril® or Altace®, and the blood thinner Coumadin®. Other medications may interact with azathioprine and the patient should always discuss any prescription or over the counter drugs used with the physician.

Before taking azathioprine, the patient should tell the doctor if he/she has had an unusual or allergic reaction to this medicine previously. The doctor will want to know if the patient has any disease of the liver or pancreas or has a bacterial, viral or fungal infection. Azathioprine may cause some bone marrow suppression and elevation of liver enzymes. Therefore, the physician will check blood tests regularly to monitor for significant changes. The physician is prepared to discuss other possible, infrequent or theoretical complications, such as certain types of malignancies.

Female or male patients planning a pregnancy should discuss this with the MG treating physician. Unless the physician and patient determine that the benefits outweigh the risks, a woman should not take azathioprine while pregnant or planning to become pregnant. Breastfeeding should be avoided if taking azathioprine.

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How should azathioprine be taken?

It is important to take azathioprine exactly as directed by the doctor. Never increase, decrease or stop taking azathioprine without checking with the physician. Patients with MG may

have to stay on this medication indefinitely because it is a long-term treatment. The main clinical improvement occurs during the first year of therapy. Improvement is gradual and it may take several months before a patient begins to notice a change in symptoms.

The dosage of azathioprine varies from 100 mg. to 200 mg. per day. If a patient misses a dose while on a once daily schedule, he/she should skip the dose that was missed and return to the regular schedule with the next dose. Do not take a double dose. If a patient misses a dose while on a several times a day dosing schedule, he/she should take the missed dose as soon as it is remembered. If it is time for the next dose, take both doses together, then resume the normal schedule. If more than one dose is missed, the patient should check with the prescribing physician.

To prevent or lessen stomach upset, the patient should eat small meals frequently throughout the day, eat dried foods such as toast or crackers, and avoid fried or fatty foods. Store azathioprine at room temperature away from heat, direct light or moisture.

While taking azathioprine, the patient should avoid immunizations without the doctor's approval and take special precautions to avoid developing an infection. If a patient does become ill with fever, chills or infection, he/she should contact the physician immediately. The patient should tell the physician or dentist that they are taking azathioprine prior to having surgery.

What are the possible adverse effects of taking azathioprine?

Azathioprine is generally tolerated very well without serious adverse effects. Some adverse effects are very serious and need prompt attention; others may go away as your body adjusts to the medication. The patient should stop taking azathioprine and contact the doctor immediately if any of the following occurs: hives; swelling of face, lips, or tongue; difficulty breathing. The patient should also contact the physician immediately if he/she has severe nausea and vomiting, diarrhea, fever or chills, loss of appetite, abdominal pain, skin rash (especially chicken pox or shingles), cough, cold sores in the mouth or on the lips, sore throat, blood in the urine or stool, unusual bruising, pale stools or darkened urine, yellowing of skin and eyes, darkening of the skin and fingernails, muscle or joint pain, hair loss, fatigue or a missed menstrual period.