

Neurology and Pharmacy directorate

Azathioprine for Myasthenia Gravis

Introduction

This leaflet provides information on a medicine called azathioprine when it is used to treat myasthenia gravis. After reading this leaflet you should have an idea about what to expect if you start taking azathioprine, for example, how well it works, and what side-effects you may experience.

What is myasthenia gravis?

Myasthenia gravis is an 'autoimmune disease'. This means that your immune system (the body's own defence system), which usually protects your body by fighting off infections such as the cold virus or measles, starts to attack a small part of your body. In people who have myasthenia gravis the immune system produces antibodies (a type of protein that circulates in the blood) which sticks to the muscle surface at the site where the nerves connect to the muscle fibres (the neuromuscular junction). These antibodies interfere with the transmission of chemical messages from the nerve branches to the muscle fibres. This results in fewer muscle fibres contracting and less power is therefore generated by the muscles. The symptoms of myasthenia gravis depend on which muscles are affected. For example, weakness of the muscles which move the eyes results in double vision, whilst weakness of the throat muscles may result in problems with swallowing.

What is azathioprine?

Azathioprine is a type of medicine called an 'immunosuppressant'. It reduces the production of antibodies by 'damping down' the activity of the body's immune system. This helps messages getting through from the nerves to the muscles and muscle strength improves. Other immunosuppressants that have been used to treat myasthenia gravis include; prednisolone (a steroid), cyclophosphamide, ciclosporin, mycophenolate mofetil (MMF), and tacrolimus.

When is azathioprine prescribed?

In patients with mild myasthenia gravis, medicines called acetylcholinesterase inhibitors (e.g. pyridostigmine) are usually prescribed to increase muscle strength. They work by increasing the effect of the chemical messenger (acetylcholine) which transmits information from the nerves to the muscles. If the symptoms cannot be controlled using these drugs the next stage of treatment is some form of immunosuppressant, such as azathioprine, to help increase muscle strength.

Steroids such as prednisolone are the immunosuppressant which is usually used first. Some patients have other conditions, such as diabetes, where steroids are best avoided. In others, the myasthenic symptoms cannot be fully controlled with steroids without them causing side effects. In these patients, azathioprine may be prescribed, either alone, or in conjunction with steroids. Combining azathioprine with steroids often allows a smaller dose of steroids to be used, minimising side effects, such as osteoporosis.

How quickly does azathioprine work?

Azathioprine does not work immediately. It may take 6-12 weeks before it starts to take effect, and the effect then builds up slowly. In some patients it may take longer than this (up to one year). The biggest improvement in symptoms is seen in the first year of treatment.

How well does azathioprine work?

There are only a few studies that have looked at how well azathioprine works for this condition. Unfortunately, it is not possible to say from these studies exactly how many people get better after taking azathioprine, or to what extent their symptoms will improve. But it has been used successfully for many years to treat myasthenia gravis.

When do I take azathioprine?

Azathioprine is usually taken once each day, with or after food.

What dose should I take?

Your doctor will advise you. Usually you will start on a low dose and your doctor may increase this if necessary. The dose you are given will depend partially on your body weight.

What is the length of treatment?

Treatment is long term. If the disease goes into remission it may be possible to stop azathioprine but many patients need to take it indefinitely.

What are the possible side-effects?

Azathioprine is usually well tolerated, but sometimes it can cause side-effects. It is thought that for every 100 people who take azathioprine up to 15 of these people may experience a side-effect such as sickness, diarrhoea, skin rashes, loss of appetite or hair loss (reversible once the medicine is stopped). Taking azathioprine can make you more likely to develop infections and to have problems with your liver. Tell your doctor immediately if you develop any of the following:

- A sore throat a fever or any other infection (signs that there is a problem with your blood cells).
- Any unexplained bruising or bleeding.
- Jaundice (a yellow colouration of the skin and the white part of your eye) this indicates problems with your liver).
- Any other new symptoms after starting azathioprine.

If any of these symptoms are severe, you should stop the azathioprine and see your doctor immediately.

There may be a very slightly increased risk of certain types of cancer in patients taking azathioprine long term. If there is any risk at all, it is small. In deciding whether a patient should take azathioprine it is necessary to consider this and weigh it up against the severity of the symptoms of the myasthenia and how much that is interfering with the patient's life. For more detailed information and a full list of side-effects, please read the leaflet that came with your medicine.

Chickenpox and shingles

As discussed above azathioprine reduces the activity of the immune system. This is particularly important if you have not had chicken pox before and you come into contact with someone who has chicken pox. This is because if people who take immunosuppressants get chicken pox or shingles they can get very severe infections and they may need special treatment.

If you take azathioprine, try to avoid people who have chicken pox or shingles. If you come into contact with anyone who has chicken pox or shingles contact your doctor as soon as possible.

Do I need any special tests while on azathioprine?

Azathioprine can affect the bone marrow. This is monitored by checking your blood counts regularly. It can also sometimes cause liver problems. Therefore your doctor will arrange for you to have a blood test before you start treatment and then regular blood checks while on azathioprine. This is very important. You may be asked to keep a record booklet with your blood test results. Always take this with you when you visit your GP or the hospital. You must not take azathioprine unless you are having regular checks.

Can I take other medicines along with azathioprine?

Azathioprine may be prescribed along with other drugs in treating your condition. Some drugs interact with azathioprine (e.g. allopurinol, a medicine used in to treat gout), so you should discuss any new medications with your doctor before starting them. Always tell any other doctor treating you that you are taking azathioprine.

Do not take 'over-the-counter' preparations without discussing this first with your doctor or pharmacist.

Can I have immunisations while taking azathioprine?

Pneumovax® (a vaccine for pneumonia) and yearly flu vaccines are both safe and recommended.

'Live' vaccines such as 'rubella' (German measles) or yellow fever are not recommended for people who are taking azathioprine. However, there are certain situations where the benefit of having a 'live vaccine' outweighs the risk, for example, vaccinating women of childbearing age against rubella. In this case, your doctor will discuss the risks and benefits of having a 'live' vaccine.

Can I drink alcohol with azathioprine?

There is no particular reason for you to avoid alcohol completely; however you should not exceed the recommended daily units.

What about pregnancy?

If you are planning on having a baby please seek the advice of your doctor well in advance so they can discuss how best to manage your myasthenia gravis during your pregnancy. It is possible to take azathioprine during pregnancy, but the risks of doing so will have to be carefully balanced against the benefits. If you become pregnant while taking azathioprine, contact your doctor immediately.

What about breastfeeding?

You may be able to breastfeed if you are taking azathioprine, but you will need to discuss this with your doctor.

Useful websites/contacts

- **Myasthenia Gravis Association**
 - Address: The College Business Centre Uttoxeter New Road, Derby DE22 3WZ
 - Tel no: 01332 290219 or Free Phone 0800-919922
 - Web address: www.mga-charity.org

For further information

- **Medicines information patient helpline:**
Tel: 0191 2823016. Available from 9:00 to 4:00 pm. Monday to Friday (excluding bank holidays). This helpline is available for patients of the Newcastle Upon Tyne Hospitals, to answer any questions they may have regarding their medicines.
- The Patient Advice and Liaison Service (PALS) can offer on-the-spot advice and information about the NHS. You can contact them on free hone 0800 032 02 02 or e-mail northoftynepals@nhct.nhs.uk .
- If you would like further information about health conditions and treatment options, you may wish to have a look at the NHS Choices website at www.nhs.uk. On this website there is an information prescription generator www.nhs.uk/ips which brings together a wealth of approved patient information from the NHS and charity partners which you may find helpful

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