Myasthenia Gravis (MG)

Myasthenia gravis (MG) is a rare, chronic autoimmune disorder that affects the neuromuscular junction – the point where nerves connect with muscles – causing muscle weakness and fatigue. The condition can affect people of any age, but it is more common in women under 40 years and men over 60 years.

Symptoms of MG can vary depending on the muscles affected, but commonly include:

- Drooping eyelids and double vision
- Difficulty speaking, chewing and swallowing
- Weakness in the neck, arms, legs or respiratory muscles
- Shortness of breath, especially during physical activity or at night

MG can be diagnosed through a physical exam and a range of tests including blood tests to detect antibodies to the acetylcholine receptor and other muscle proteins, as well as single fibre electromyography (sfEMG) and nerve conduction studies to assess muscle function. You may also require a CT scan of your chest if the diagnosis is confirmed due to the small risk of a thymoma, which is typically a benign growth of the thymus gland.

Treatment of MG aims to relieve symptoms, improve muscle strength and function, and prevent complications. The following treatment options may be recommended:

- Medications: Medications that improve the transmission of nerve impulses to muscles can be prescribed, such as acetylcholinesterase inhibitors (e.g., pyridostigmine) and immunosuppressants (e.g., prednisone, azathioprine, mycophenolate mofetil, rituximab).
- Plasmapheresis: This procedure involves removing antibodies from the blood and is usually recommended for people with severe MG symptoms or those who do not respond to medications.
- Intravenous immunoglobulin (IVIG): This treatment involves infusing immunoglobulin (antibodies) into the bloodstream, which can block harmful antibodies that attack the neuromuscular junction. It is usually reserved for myasthenic crises involving the breathing or swallowing muscles.
- Thymectomy: Removal of the thymus gland, which plays a role in the production of the antibodies that attack the neuromuscular junction, can improve MG symptoms and occasionally lead to remission.

When considering medications, it is important for individuals with myasthenia gravis to be aware of those that can worsen their symptoms or trigger a myasthenic crisis, a severe exacerbation of muscle weakness.

Medications that should be **avoided** or used with caution in myasthenia gravis include:

1. Aminoglycoside antibiotics (e.g., gentamicin, tobramycin): These antibiotics can cause neuromuscular blockade, which can worsen muscle weakness in individuals with myasthenia gravis.
2. Macrolide antibiotics (e.g., erythromycin, clarithromycin): These antibiotics can also cause neuromuscular blockade and should be used with caution in individuals with myasthenia gravis.
3. Quinolone antibiotics (e.g., ciprofloxacin, levofloxacin): These antibiotics have been associated with an increased risk of myasthenia gravis exacerbation, and should be avoided if possible.
4. Beta-blockers (e.g., propranolol, metoprolol): These medications can cause or worsen muscle weakness in individuals with myasthenia gravis.
5. Calcium channel blockers (e.g., verapamil, diltiazem): These medications can also cause or worsen muscle weakness and should be used with caution in individuals with myasthenia gravis.
6. Local and general anaesthetics: These agents can cause neuromuscular blockade and increase the risk of myasthenic crisis in individuals with myasthenia gravis.

It is important to note that not all individuals with myasthenia gravis will be affected by these medications and caution should be exercised when introducing any new medication. Before taking any new medication, individuals with myasthenia gravis should consult with their GP or specialist to discuss the potential risks and benefits.

People with MG may require ongoing treatment and monitoring to manage their symptoms and prevent complications.

A multidisciplinary team approach involving a neurologist, specialist nurse, physiotherapist, occupational therapist, and speech and language therapist may be recommended to provide comprehensive care.

It is important to seek medical attention if symptoms worsen or new symptoms develop. For more support and information visit myaware a charity providing expert support and advice for patients with myasthenia.