My Diagnosis: Myasthenia Gravis

Diagnosis Overview

Myasthenia gravis is a neuromuscular disorder. Neuromuscular disorders involve the muscles and the nerves that control them.

Causes

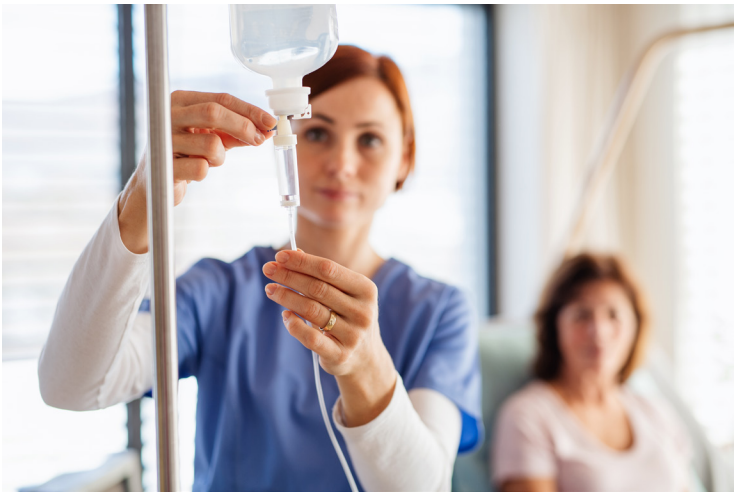
Myasthenia gravis is a type of autoimmune disorder. An autoimmune disorder occurs when the immune system mistakenly attacks healthy tissue. In people with myasthenia gravis, the body produces antibodies that block the muscle cells from receiving messages (neurotransmitters) from the nerve cells. Antibodies are proteins made by the body's immune system when it detects harmful substances. Antibodies may be produced when the immune system mistakenly considers healthy tissue to be a harmful substance, such as in the case of myasthenia gravis.

In some cases, myasthenia gravis is linked to tumors of the thymus (an organ of the immune system). Myasthenia gravis can affect people at any age. It is most common in young women and older men.

Symptoms

Myasthenia gravis causes weakness of the voluntary muscles. These are muscles that you can control. Autonomic muscles of the heart and digestive tract are usually not affected. The muscle weakness of myasthenia gravis worsens with activity and improves with rest. This muscle weakness can lead to a variety of symptoms, including:

- Breathing difficulty because of weakness of the chest wall muscles
- Chewing or swallowing difficulty, causing frequent gagging, choking, or drooling
- Difficulty climbing stairs, lifting objects, or rising from a seated position
- Difficulty speaking
- Drooping head or eyelids
- Facial paralysis or weakness of the facial muscles
- Fatigue
- Hoarseness or changing voice
- Double vision
- Difficulty maintaining steady gaze



What to Expect

Tests

Your neurologist will perform a physical exam. This includes a detailed nervous system (neurological) examination. This may show:

- Muscle weakness, with eye muscles usually affected first
- Weakness usually fluctuates and gets worse with exercise
- Normal reflexes and feeling (sensation)

Tests that may also be done include:

- Blood test to check for abnormal antibodies. These antibodies include: acetylcholine receptor (AchR), muscle specific tyrosine kinase (MUSK) or lipoprotein receptor-related protein 4 (LRP4) antibodies
- Computerized tomography (CT) or magnetic resonance imaging (MRI) scan of the chest to look for a tumor
- Nerve conduction studies to test how fast electrical signals move through a nerve
- Electromyography (EMG) to test the health of the muscles and the nerves that control the muscles
- Pulmonary function tests to measure breathing and how well the lungs are functioning

Treatment

There is no known cure for myasthenia gravis. Treatment may allow you to have periods without any symptoms (remission). Lifestyle changes can often help you continue your daily activities. The following may be recommended:

- Resting throughout the day
- Using an eye patch if double vision is bothersome
- Avoiding stress and heat exposure, which can make symptoms worse

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What are the current treatments?

- The mainstay of treatment are medications to suppress the immune system.
- Pyridostigmine (Mestinon®)
- Prednisone
- IV Immune globulin (IV Ig)
- Plasma exchange (PLEX)
- Mycophenolate mofetil (CellCept®)
- Azathioprine (Imuran®)
- Eculizumab (Soliris®)
- Efgartigamod alpha (VYVGART®)
- IV Ig and PLEX, may be used in crisis

Myasthenic Crisis

Crisis situations are attacks of weakness of the breathing, speaking and swallowing muscles. These attacks can occur without warning, or if medication is not taken appropriately, or if sick with another illness such as the cold or flu. These attacks usually last no longer than a few weeks. Call your neurologist right away if you experience these symptoms, as more urgent medical attention may be needed, such as hospitalization. Rarely, a temporary breathing tube may be needed for significant breathing difficulty.

A procedure called plasmapheresis may also be used to help end the crisis. This procedure involves removing the clear part of the blood (plasma) containing the antibodies. This is replaced with donated plasma that is free of antibodies, or with other fluids. Plasmapheresis may also help reduce symptoms for four to six weeks and is often used before surgery.

A medicine called intravenous immunoglobulin (IVIG) may also be used. This involves an infusion of antibodies which are donated from healthy volunteers. This can help to flood the body's "bad" antibodies with healthy antibody producing cells which speeds recovery. This can take 2-3 weeks to take effect. Your doctor will discuss the pros and cons of each therapy depending on the specific situation.

Other Treatment Options

Surgery to remove the thymus (thymectomy) may result in permanent remission or less need for medicines, especially when there is a tumor present.

If you have eye problems, your doctor may suggest lens prisms to improve vision.

Physical therapy can help maintain your muscle strength. This is especially important for the muscles that support breathing.

Some medicines can worsen symptoms and should be avoided. Before taking any medicine, ask your doctor whether it is OK for you to take it.

Care Team

We employ a multidisciplinary approach. You will have access to a variety of specialists, personalized to your underlying condition. We work with patients and their families to provide referrals for additional tests and services as needed.

Frequently Asked Questions

What are the common symptoms?

Patients with myasthenia gravis can have double vision, drooping eyelids, trouble swallowing, trouble breathing, slurred speech and/or weakness of the arms and legs. This tends to worsen over the course of the day or with exercise (known as fatigable weakness). Short rests or naps can temporarily improve symptoms.

Are there any medications to avoid?

Certain medications can worsen myasthenia gravis. You should avoid magnesium supplements, and botulinum toxin. If you are going to have anesthesia for a procedure, please inform your anesthesiologist of your condition. If you are on prednisone, please consult with your neurologist before increasing or decreasing the dose.

Some classes of antibiotics including the aminoglycosides and fluroquinolones should be avoided, if possible. Some patients with myasthenia gravis may experiencing a worsening of their symptoms when starting a beta blocker (such as Metoprolol or Labetalol).

It is best to consult with your neurologist prior to starting a new medication.

Is Atlantic Health System involved in any clinical trials?

We are not currently running clinical trials for neuromuscular disease. There are several clinical trials in the NY and NJ area that are active and recruiting participants. Please speak with your neurologist about your eligibility. You can find more information at clinicaltrials.gov.

Where can I find additional information about myasthenia gravis, including support groups?

Myasthenia Gravis Foundation of America, visit myasthenia.org.

Where can I find more information about help at home, financial assistance, transportation and other social work needs?

Atlantic Neuroscience Institute offers a resource guide which can be provided at your request or downloaded online.

SCAN ME

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MyChart

MyChart is your personal, patient-centered, fully secure connection to Atlantic Health System. With MyChart, patients who receive care at any of our locations — including Atlantic Medical Group physician practices, Chilton, Hackettstown, Morristown, Newton and Overlook medical centers — can take an active role in managing their own health.

- eCheck-In
- Access health records, lab results and proof of vaccinations
- Request and manage appointments
- Request prescriptions refills
- Bill pay

Scan to learn more at MyChart.atlantichealth.org

Notes

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