



Glossary

A diagnosis of myasthenia gravis (MG) exposes patients to a new vocabulary specific to this illness. At first, terms used to describe MG, its diagnosis and treatment, may seem daunting and difficult to understand.

Members of the Medical Advisory Board believe that the integrity of the doctor-patient relationship is based on strong communication. Informed patients are active participants in securing their medical care and, with greater understanding, will comply with their physicians' important treatment directives. That's why members of the Medical Advisory Board designed this glossary which defines MG terms using "patient-friendly" words.

Each case of myasthenia gravis is unique. The best source of information regarding the diagnosis and treatment of MG is your physician.

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of California

Acetylcholine

A chemical released by a nerve ending that activates a muscle cell to contract and generate force.

Acetylcholine Receptor

A protein substance on the muscle cell membrane, which accepts acetylcholine from the nerve ending.

Acetylcholinesterase

An enzyme located in the gap between a nerve ending and the muscle cell membrane whose function is to inactivate acetylcholine.

Assay for Binding Antibody to Acetylcholine Receptor

A laboratory test, designed to assist the diagnosis of autoimmune myasthenia gravis, which measures the level of circulating antibodies that bind to acetylcholine receptors.

Autoimmune Disease

A disorder caused when the body fails to recognize itself and mounts an immune attack (usually reserved for invading bacteria or a viral infection) producing antibodies against its own tissue. In MG, the acetylcholine receptors are the victims of this misdirected immune attack.

Azathioprine (brand-name Imuran)

An immunosuppressive medication available as a 50 mg tablet, most often used as a steroid-sparing agent, allowing MG patients on prednisone to take less prednisone over the long term.

Bulbar MG

Myasthenic weakness involving the muscles of speech, chewing and swallowing. The name derives from the fact that the nerve supply to these structures comes from the medulla or “bulb” in the lower brain.

Cholinesterase Inhibitors (Anticholinesterases)

Medications which provide temporary symptomatic relief of MG weakness by decreasing the activity of acetylcholinesterase thus allowing more acetylcholine to accumulate at the neuromuscular junction.

Congenital Myasthenic Syndromes (CMS)

A rare inherited group of various disorders of neuromuscular transmission clinically similar to autoimmune MG but without immunological origin.

Corticosteroids (Steroids)

Hormones used to dampen the faulty immune response that occurs with myasthenia gravis.

Crisis

A somewhat old-fashioned term used for “acute respiratory insufficiency” developing over hours or days and severe enough to require assisted mechanical support for breathing. Usually this respiratory insufficiency is the result of weakness of the diaphragm and inter-costal (rib) muscles, but it can also occur if weak throat muscles obstruct the airway.

Cyclosporine (brand-name Sandimmune)

An immunosuppressive medication available in liquid solution and in 25, 50 and 100 mg capsules, most often used as a steroid-sparing agent, allowing MG patients on prednisone to take less prednisone over the long term. Expensive and a little more difficult to monitor, this drug is usually used if other medications fail.

Diplopia

The perception of two images in the field of vision. Ocular myasthenia may affect the eye movements in vertical, horizontal, or diagonal directions, with variable degrees of double vision.

Dysarthria

Difficulty speaking characterized by imprecise articulation of consonants. It results from weakness of the muscles used for speech.

Dysphagia

The difficulty or inability to swallow.

Ephedrine Sulfate

A medication taken as a 25 mg capsule sometimes added to cholinesterase inhibitors to serve as an auxiliary medication in the treatment of MG.

Generalized MG

MG affecting more than just the eye muscles (contrasted with purely ocular myasthenia).

Immunosuppressive Drugs

Medications which modulate or suppress the body's immune system thus suppressing the autoimmune disease by reducing the level of circulating antibodies available to attack acetylcholine receptors at nerve-muscle junctions.

Intravenous Immune Globulin (IV-IG)

A very expensive medical procedure involving intravenous infusion of human gamma globulin antibodies pooled from multiple donors, which results in rapid but temporary relief of MG symptoms.

Mestinon (Pyridostigmine Bromide)

The most commonly used cholinesterase inhibitor, available in a 60 mg tablet for oral use and as a syrup for patients with swallowing difficulties.

Myasthenia Gravis (MG)

A disease characterized by fluctuating weakness of eye muscles, face muscles, chewing, swallowing, talking, breathing, neck or limb muscles, made worse by use of those muscles and improved at least partially by rest of the same muscles, with little muscle atrophy and no sensory abnormalities.

Neonatal Myasthenia

Myasthenic weakness lasting 2-12 weeks in a newborn infant as the result of a passive transfer of acetylcholine receptor antibodies from the mother.

Ocular Myasthenia

An autoimmune condition characterized by variable weakness of the muscles of the eyelids and eye movements. This leads to droopy eyelids (ptosis) and/or double vision (diplopia).

Plasmapheresis

Also called "Plasma Exchange." An expensive medical procedure that separates the blood into its two major components: plasma (the liquid part of the blood) and cells. The blood cells are then returned to the patient, with the plasma being replaced by artificial fluids. A machine similar to that used for kidney dialysis is utilized for this treatment.

Prednisone

A corticosteroid similar to cortisol, one of the body's natural steroid hormones.

Prostigmin (Neostigmine Bromide)

A less frequently used cholinesterase inhibitor available as a 15 mg tablet, as well as three different injectable concentrations.

Ptosis

Droopy eyelids caused by muscle weakness. In ocular myasthenia, ptosis is usually variable and worsens as the day progresses.

Remission

The health status whereby a patient is relatively symptom free and no longer needs any MG medication.

Repetitive Nerve Stimulation

This is an electro-diagnostic test that is used to diagnose myasthenia gravis and other disorders of neuromuscular transmission. To perform this test, small metal disks (electrodes) are taped to the skin over a muscle. Other metal disks are taped over the nerve that goes to this muscle. Brief electrical impulses are given to the nerve to make the muscle contract. At first the impulses are so small that they are not felt, but gradually they build up until they are strong enough to make the muscle fully contract. Then, a series of 4 to 10 impulses are given at 2 or 3 times a second. In myasthenia gravis, the muscle contractions become smaller during the 4 to 10 impulses.

Sero-negative MG

Myasthenia gravis is clinically suspected in patients with negative results from the Assay for Binding Antibody to Acetylcholine Receptor.

Single Fiber EMG

This is a sensitive electro-diagnostic test which is used to diagnose myasthenia gravis and other disorders of neuromuscular transmission. To perform this test, a special EMG needle is placed in a muscle. The person is coached on how to gently contract the muscle. The doctor finds and records from two muscle fibers that are activated by the same nerve fiber. This is repeated for up to 20 recordings. In myasthenia gravis, the muscle fibers are not activated as closely together as normal, due to the fatigue of the junction where the nerve meets the muscle.

Timespan (Mestinon Timespan)

A longer-acting 180 mg oblong capsule which provides the slow release of pyridostigmine bromide. It is usually prescribed for nighttime usage so that a patient does not have to awaken during the night to take Mestinon 60 mg doses.

Tensilon

Also known as “edrophonium chloride.” Medication used in a pharmacological test to confirm the clinical diagnosis of myasthenia gravis. Tensilon is injected intravenously to look for a brief, but measurable, improvement in weakness, for example, opening of a drooping eyelid.

Titer

The numeric count of serum antibodies as measured by the Assay for Binding Antibody to Acetylcholine Receptors.

Thymectomy

An operation to remove the thymus gland. Surgical approaches include:

Transcervical – removal of thymus tissue through a lower neck incision.

Transsternal – removal of thymus tissue by dividing the sternum.

Extended Transsternal – removal of thymus and all adjacent fatty tissue by dividing the sternum.

Maximum Transsternal – removal of thymus and all adjacent fatty tissue by dividing the sternum and a separate lower neck incision.

Thoracoscopic – removal of the thymus using long instruments inserted through multiple small openings in the chest (ports).

Thymoma

Tumor of the thymus gland found in 10-15% of patients with myasthenia gravis.

Invasive Thymoma – attached to adjacent structures; uncommon.

Non-Invasive Thymoma – discrete, non-aggressive (“benign”); common.

Thymus

A flat H-shaped gland lying behind the breastbone (sternum) and in front of the heart.

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