Myasthenia Gravis

This is a disease due to antibodies formed against acetylcholine receptors. It manifests as ptosis and diplopia and muscle weakness. It is associated with thymic hyperplasia and thymoma.

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Mechanism

Antibodies to Acetylcholine Receptor
Ant-tie-bodies attacking A-seagull-cola Receptor
These antibodies lead to loss of function of acetylcholine receptors.

Symptoms

Ptosis
Toast-eyes
Patients usually present initially with extraocular muscle weakness that manifests as drooping eyelids (ptosis) and double vision (diplopia).

Diplopia
Double-vision of eyes
Patients usually present initially with extraocular muscle weakness that manifests as drooping eyelids (ptosis) and double vision (diplopia).

Weakness with Muscle Use
Progressively Weaker with Muscle-flexing
Patients experience fluctuating weakness that worsens as the day progresses. Weakness worsens also with activity and heat.

Respiratory Death
Dead Lungs
Patients experiencing myasthenic crisis are at risk of dying due to respiratory failure.

Thymus Associated
Thigh-mouse
Myasthenia Gravis is associated with thymic hyperplasia and thymoma.

Treatment

Acetylcholinesterase Inhibitors
A-seagull-cola-nest with Inhibiting-chains
Pyridostigmine is the most commonly used drug although neostigmine is sometimes used. It inhibits acetylcholinesterase thus increasing the amount of acetylcholine available for binding to receptors on the postsynaptic membrane. Some sort of immunotherapy (eg. glucocorticoids, azathioprine etc) is often added to the therapeutic regimen as well.

Plasmapheresis
Plasma-fairy
This removes acetylcholine receptor antibodies from the circulation and is used in cases of myasthenia crisis and prior to thymectomy.

Thymectomy

Thigh removed by Scalpel

It is believed that the thymus has something to do with the development of myasthenia gravis. Thus, thymectomy is often indicated in patients with MG.