'Grave muscle weakness' isn't a dead end

Posted by Dr. Robert Neel, University of Cincinnati  July 02, 2008 01:37AM

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Q. My friend was recently diagnosed with myasthenia gravis. After doing some research about the disease on the Internet, I am still confused about it. What exactly is myasthenia gravis?

A. Myasthenia gravis is a complicated disease in which our immune system is attacking the connection between the nerve and the muscle, causing the muscle to not be able to receive information from the nerve.

The name has Latin and Greek roots and means grave muscle weakness. And that's exactly what it does. The connection between the nerve and the muscle is a chemical called acetylcholine, and myasthenia causes an attack against that chemical's binding site (the acetylcholine receptor). Our nerve becomes less able to communicate with our muscle, and so we develop weakness.

What are the symptoms of the disease?

It usually presents as fatiguing weakness of "proximal" muscles such as shoulders, thighs, hips. There are also cases of double vision, droopy eyelids and even dysphagia swallowing problems, slurred speech and breathing weakness. Eye-movement abnormalities are the most common symptom of myasthenia gravis. Fatiguing weakness is a hallmark, meaning the weakness fluctuates during the day (better after rest and worse after exertion).

We are not sure why some people develop myasthenia. It is not like an infection, but more like autoimmune disorders such as myasthenia. It seems to be more susceptible to acquiring diseases like rheumatoid arthritis and lupus. Some people, including young women and the elderly, seem to be more susceptible to acquiring autoimmune disorders such as myasthenia.

Is it treatable?

We mainly use medications to treat myasthenia. Treatment is divided between symptomatic treatment with drugs, like Pyridostigmine, and Immunosuppressant therapy (steroids like prednisone, azathioprine).

Immunosuppressant therapy turns the chemical, acetylcholine, around the nerve/muscle junction, so it stops attacking the weakened connection.

There is one surgical treatment, as well, called thymectomy, but this is not the treatment for every patient with myasthenia.

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