Mitochondrial Myopathies

Mitochondrial myopathies are a group of neuromuscular diseases. Some of the more common mitochondrial myopathies include:

- Kearns-Sayre syndrome.
- Myoclonus epilepsy with ragged-red fibers (MERRF).
- Mitochondrial encephalomyopathy lactic acidosis.
- Stroke-like episodes (MELAS).

CAUSES

These diseases are caused by damage to the mitochondria. Those are small, energy-producing structures found in every cell in the body. They serve as the cells' "power plants." Nerve cells in the brain and muscles require a great deal of energy. They appear to be particularly damaged when mitochondrial dysfunction happens.

SYMPTOMS

The symptoms include:

- Muscle weakness or exercise intolerance.
- Heart failure or rhythm disturbances.
- Dementia.
- Movement disorders.
- Stroke-like episodes.
- Deafness.
- Blindness.
- Droopy eyelids.
- Reduced ability of the eyes to move.
- Vomiting.
- Seizures.

The disorders range in severity from progressive weakness to death. The age of onset ranges from birth to adulthood. Most cases occur before the age of 20. Exercise intolerance or muscle weakness usually develops by the age of 20. During physical activity, muscles may become easily fatigued or weak. Muscle cramping may rarely occur. Other symptoms may include:

- Nausea.
- Headache.
- Being out of breath.

TREATMENT

There is no specific treatment for any of the mitochondrial myopathies. But physical therapy may extend the range of movement of muscles and improve dexterity. Vitamin therapies may improve function in some patients. They include:

- Riboflavin.
- Coenzyme Q.
- Vitamins C and K.
- Carnitine. This is a specialized amino acid.

The outcome for patients with mitochondrial myopathies varies greatly from patient to patient. The disease progression depends largely on the type of disease and the degree of involvement of various organs.

RESEARCH BEING DONE

The NINDS conducts and supports research on mitochondrial myopathies. The goals of this research are to increase scientific understanding of these disorders and ultimately to find ways to prevent and cure them.

Research is continually being done to learn more about this problem.

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