Difference Between Myasthenia Gravis and Lambert Eaton Syndrome

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Key Difference – Myasthenia Gravis vs Lambert Eaton Syndrome

Myasthenia gravis is an autoimmune disordercharacterized by the production of antibodies that block the transmission of impulses across the neuromuscular junction. Lambert Eaton syndrome is a paraneoplastic manifestation of small cell carcinomas which is due to the defective acetylcholinesterase release at the neuromuscular junction. **Myasthenia gravis is an autoimmune disease whereas Lambert Eaton syndrome is a paraneoplastic syndrome.** This is the main difference between myasthenia gravis and Lambert Eaton syndrome.

What is Myasthenia Gravis?

Myasthenia gravis is an autoimmune disorder characterized by the production of antibodies that block the transmission of impulses across the neuromuscular junction. These antibodies bind to the postsynaptic Ach receptors, preventing the binding of Ach in the synaptic cleft to those receptors. Women are five times more affected by this condition than males. There is a significant association with other autoimmune disorders such as rheumatoid arthritis, SLE, and autoimmune thyroiditis. Concurrent thymic hyperplasia has been observed.

Clinical Features

- There is weakness of proximal limb muscles, extraocular muscles, and bulbar muscles
- There are fatigability and fluctuation with regard to the muscle weakness
- No muscle pain
- Heart is not affected but the respiratory muscles can be affected
- Reflexes are also fatigable
- Diplopia, ptosis, and dysphagia

Figure 01: Myasthenia Gravis

Investigations

- Anti ACh receptor antibodies in the serum
- Tensilon test where a dose of edrophonium is administered, which gives rise to a transient improvement of the symptoms that lasts for about 5 minutes
- Imaging studies
- ESR and CRP

Management

- Administration of anticholinesterases such as pyridostigmine
- Immunosuppressants such as corticosteroids can be given to the patients who do not respond to anticholinesterases
- Thymectomy
- Plasmapheresis
- Intravenous immunoglobulins

What is Lambert Eaton Syndrome?

Lambert Eaton syndrome is a paraneoplastic manifestation of small cell carcinomas due to the defective acetylcholinesterase release at the neuromuscular junction.

Clinical Features

- Proximal muscle weakness occasionally with ocular or bulbar muscle weakness
- Absent reflexes

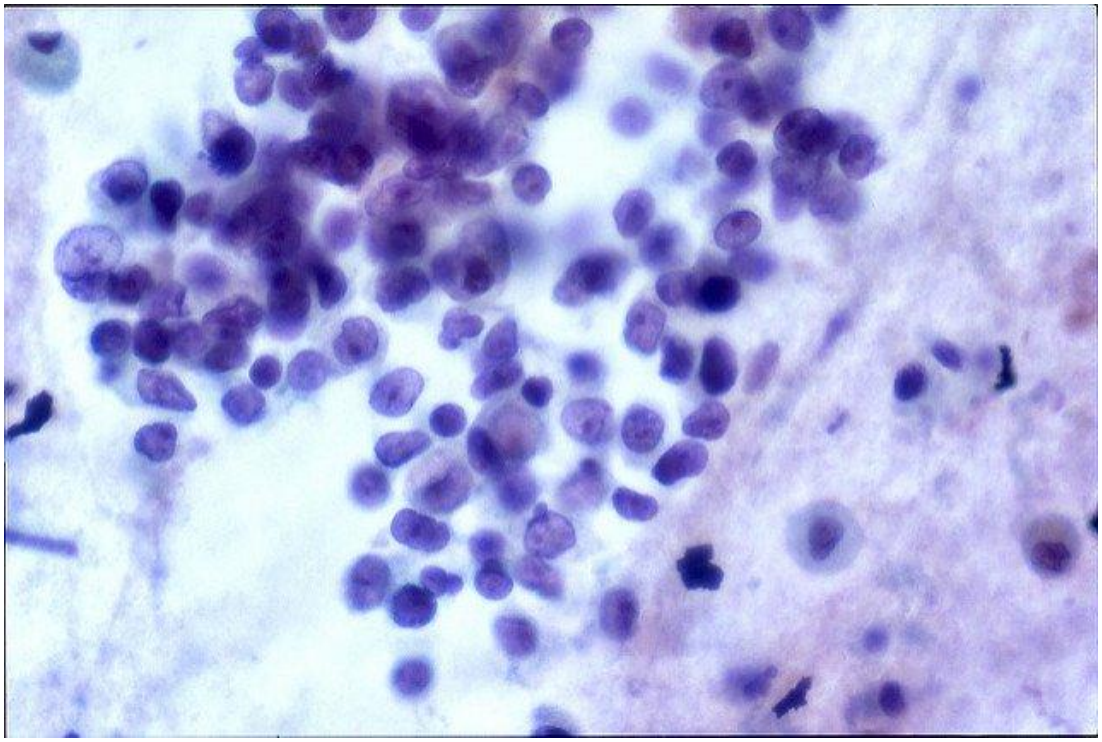

Figure 02: Small Cell Carcinoma of the Lung

Diagnosis

EMG and repetitive stimulation are used in the confirmation of diagnosis

Management

3, 4 Diaminopyiridine has been proven to be effective.

What is the Similarity Between Myasthenia Gravis and Lambert Eaton Syndrome?

- Both diseases are due to the defects in the transmission of nervous impulses at the level of the neuromuscular junction.

What is the Difference Between Myasthenia Gravis and Lambert Eaton Syndrome?

Myasthenia Gravis vs Lambert Eaton syndrome	
Myasthenia gravis is an autoimmune disorder characterized by the production of antibodies that block the transmission of impulses across the neuromuscular junction.	Lambert Eaton syndrome is a paraneoplastic manifestation of small cell carcinomas which is due to the defective acetylcholinesterase release at the neuromuscular junction.
Type	
Myasthenia gravis is an autoimmune disease.	Lambert Eaton syndrome is a paraneoplastic syndrome.
Clinical Features	
• Weakness in proximal limb muscles, extraocular muscles, and bulbar muscles • Fatigability and fluctuation with regard to the muscle weakness • No muscle pain • Heart is not affected, but respiratory muscles can be affected • Reflexes are also fatigable • Diplopia, ptosis, and dysphagia	• Proximal muscle weakness occasionally with ocular or bulbar muscle weakness • Absent reflexes
Diagnosis	
• Anti ACh receptor antibodies in the serum • Tensilon test • Imaging studies	EMG and repetitive stimulation

• ESR and CRP	
Treatment	
• Administration of anticholinesterases such as pyridostigmine • Immunosuppressants such as corticosteroids can be given to the patients who do not respond to anticholinesterases • Thymectomy • Plasmapheresis • Intravenous immunoglobulins	3,4 Diaminopyiridine has been proven to be effective in the management of Lambert Eaton syndrome.

Summary – Myasthenia Gravis vs Lambert Eaton Syndrome

Myasthenia gravis is an autoimmune disorder characterized by the production of antibodies that block the transmission of impulses across the neuromuscular junction. Lambert Eaton syndrome is a paraneoplastic manifestation of small cell carcinomas which is due to the defective acetylcholinesterase release at the neuromuscular junction. As mentioned in their respective definitions, myasthenia gravis is an autoimmune disease whereas Lambert Eaton syndrome is a paraneoplastic syndrome. This is the main difference between Myasthenia Gravis and Lambert Eaton syndrome.

Reference:

1.Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009.

Image Courtesy:

1.“Myasthenia Gravis” By Posey & Spiller – Posey & Spiller: Fatigue (Ptosis) in a patient with MG (ed. 1904) (Public Domain) via Commons Wikimedia
2. “Small cell carcinoma” by Yale Rosen (CC BY-SA 2.0) via Flickr

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