Myasthenia Gravis

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Introduction

Myasthenia gravis (MG) is a chronic autoimmune neuromuscular disease characterized by weakness and fatigue of the neck, facial, and skeletal muscle weakness due to a defect in the transmission of nerve to muscles at the neuromuscular junction (Kofler et al., 2013, p. 119).

Approximately 14-20 in 100,000 people are diagnosed with myasthenia gravis in the United States (Leis, Moore, Koller, Botz, & Vinser, 2014, p. 112). Typically, diagnosis occurs in middle-aged adults with women generally acquiring the disease at a younger age than men (Mestecky, 2013, p. 110). MG has the potential to greatly affect the quality of life of a patient.

Although the disease may go into remission for any given period of time, there is currently no known care for myasthenia gravis. Patient experience varying degrees of symptoms, however, there are several re-occurring symptoms available to help those with MG decrease symptoms and lead full lives.

Signs & Symptoms

- Bulbar Symptoms
  - Eye muscle weakness
  - Weakness, drooping, burning
  - Fullness, drooping

- Oculomotor weakness
  - Low endurance of muscular function
  - Fatigue, eye fatigue
  - Mobbing in the evening when the eyelids become heavy while falling asleep

- Speech problems

- Swallowing problems

- Malnutrition

- Muscle weakness

- Inability to eat

- Ptosis (drooping of the upper eyelids), either unilateral or bilateral

- Fatigue

Myasthenia gravis is an uncommon disease that can greatly affect the lives of the patient and their family members. Patients may experience myasthenic crisis, which is life threatening, however, it is important to remember that they continue living with the disease and its effects every day. Family Nurse Practitioners must develop an individualized care plan to treat and manage symptoms in a patient’s every day life. It is also imperative to note that different cases of MG may be delayed due to many reasons because the symptoms vary in each case. It is important to have a solid knowledge base regarding this disease in order to adequately diagnose patients in the beginning.

This is a manageable disease but can become life threatening, therefore, early recognition and treatment is essential.

Myasthenia gravis is a relatively rare, autoimmune disease of the neuromuscular junction (NMJ). "MG is a B-cell-driven, T-cell-dependent, complement and the antineurotoxic antibodies autoimmune disease directed against molecules at the NMJ of skeletal muscle" (Panis, Berrill, & Miller, 2014, p. 144). These antibodies are directed against proteins concentrated at the NMJ, and include the stigmatic acetylcholine receptor (AChR), the muscle-specific tyrosine kinase (MuSK), and the lipoprotein-related protein 4 (LRP4). The most common autoantibody found in MG patients is against AChR. (Kuster; Gosteliard, Mora, Kaminski, & Sambeth-Davies, 2013, p. 11). "The binding of anti-AChR antibodies to their target impairs neuromuscular transmission by complement-mediated cell death of the post synaptic membrane" (Avrain et al., 2014, p. 145).

The thymus gland is the chief organ for innovations and immune responses, and is drastically decreased in size and is replaced with fat as one ages (Weeks, 2012, p. 33). Many patients with MG have thymus abnormalities including hyperplasia or thymomas, which may play a role in disease initiation. These mechanisms include the expression of self-antigens by thymic tissue and impaired function of autoreactive T lymphocytes (Bar & Richmond, 2014, p. 651). The exact role of thymus in MG is not fully understood, however, researchers suspect that thymus or thymus may target this autoimmune response.

Patients with MG experience cycles of remission and exacerbation. However, with continuous advanced research, it is now one of the most treatable autoimmune diseases today. Although it is still a serious condition, patients with this diagnosis are expected to have longer survival rates and increased quality of daily life activities. Nursing practitioners are providers that will have contact with these patients very frequently. As a result, assessment skills are needed for accurate diagnosis. Continuous knowledge and understanding the disease process is crucial because many patients because the symptoms are usually present early in the disease process.

Myasthenia Gravis is one of the best known autoimmune diseases today. Nursing care plays a primary role in educating patients on how to enhance their quality of daily living and improving their functional outcomes. Because of the increase in diagnosis and aging population as previously mentioned, providers are likely to come in contact with a patient diagnosed with MG during their career. Understanding the pathophysiology as well as the patient’s perception of the disease and its symptoms only will serve to improve overall care and clinical decision-making.