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REVIEW ON AYURVEDIC APPROACH OF MYASTHENIA GRAVIS

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ABSTRACT:

Myasthenia Gravis (MG) is an autoimmune disease characterized by weakness and fatigability of skeletal muscles, with improvement following rest. It is mediated by organ-specific antibody. It is recognized as an auto-immune disease because the immune system mistakenly attacks the body itself. The Ayurvedic treatment is aimed at three goals: detoxifying the patient, reducing the symptoms, & correcting immune dysfunction. In Ayurveda, it comes under dhatukshayjanya vatavyadhi. To treat the basic, ayurvedic medications which have neuromuscular activity are used includes various kalpas like Yograj guggul , Mahavat vidhwansa, Ekangvir rasa, etc. To treat immune dysregulation Bruhat-vat chintamani ras, Swarnasinduram, Amalak ghruta, Ashwagandha , Brahmi kalpas can be used. People having this type of condition need to make change in their lifestyle. There is no such cases recorded in ayurveda but with help of these kalpas and psychological consults the condition can be treated. The detailed will be discussed further.

Key words: Auto-immune disease, Dhatukshayjanya vatvyadhi, Myasthenia gravis.

INTRODUCTION:

Ayurveda is traditional system of Indian medicine. It contains various medications on various types of diseases. An autoimmune disease is a condition in which your immune system mistakenly attacks your body. It releases proteins called autoantibodies that attack healthy cells. There are more than 80 different autoimmune diseases. Myasthenia Gravis is one of them. . Myasthenia Gravis affects nerves that help the brain control the muscles. When these nerves are impaired, signals can't direct the muscles to move. The most common symptom is muscle weakness that gets worse with activity and improves with rest. Often muscles that control swallowing and facial movements are involved. Myasthenia gravis (MG) is a relatively uncommon disorder, with prevalence rates that have increased to about 20 per 100,000. This autoimmune disease is characterized by muscle weakness that fluctuates, worsening with exertion, and improving with rest. It can be treated with the help of various kalpas mentioned in Ayurveda. The Ayurvedic treatment is aimed at three goal : detoxifying the patient , reducing the symptoms, & correcting immune dysfunction.

AIM: To review on Ayurvedic approach of Myasthenia gravis.

OBJECTIVE: To study Ayurvedic etiology of Myasthenia Gravis.

MATERIAL & METHODS:

MATERIAL:

- Charak samhita
- Various Ayurvedic text books
- Various articles
- Internet

METHODS:

Study can be done to understand the concept of MG in relation with Ayurveda. Acharya Charaka in Maharogadhyaya enumerated several Vataja varieties of diseases. These are called as Atmaroopas of Vata. Even when these inherent properties are manifested partially, these are diagnosed and treated as the disorders of Vata only. For example, Sramsa (looseness), Bhramsa

(dislocation), Vyasa (expansion/division, Sanga (obstruction), Bheda (separation), Sada (general Malaise/depression), Kampa (tremors), Toda (piercing pain), Shosha (wasting). Shoola (colic pain), Supti (numbness), Sankocha (contractions), Sthambha (stiffness). Among them many of the symptoms can be observed in patients of Myasthenia Gravis [MG]. Hence the samprapti is to be according to Vatavyadhi chikitsa only.

CAUSES:

- Exact cause of disease is not known.
- Autoantibodies block the receptors of acetylcholine in neuromuscular junction.
- Thymoma – enlargement of thymus
- Autoimmune disorder.
- Structural damage to neuromuscular junction.

Other causes:

- Rarely, mothers with myasthenia gravis have children who are born with myasthenia gravis (neonatal myasthenia gravis). If treated promptly, children generally recover within two months after birth.

- Some children are born with a rare, hereditary form of myasthenia, called congenital myasthenic syndrome.

Classification of MG :

Grade I	Only eyes affected
Grade Iia	Mild generalized MG responding well to the therapy
Grade Iib	Moderate generalized MG responding less well
Grade III	Severe generalized disease
Grade IV	Myasthenia gravis requiring mechanical ventilation

SYMPTOMS:

वातव्याधि लक्षणानि -

संकोचः पर्वणां स्तम्भो……. शिरोनासाअक्षिजत्रुणां ग्रीवायाच्शापि हुन्डनम I

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Muscle weakness caused by myasthenia gravis worsens as the affected muscle is used. Because symptoms usually improve with rest, muscle weakness can come and go. However, the symptoms tend to progress over time, usually reaching their worst within a few years after the onset of the disease.

Although myasthenia gravis can affect any of the muscles that you control voluntarily, certain muscle groups are more commonly affected than others.

EYE MUSCLES:

In more than half the people who develop myasthenia gravis, their first signs and symptoms involve eye problems, such as:

- Drooping of one or both eyelids (ptosis).
- Double vision (diplopia), which may be horizontal or vertical, and improves or resolves when one eye is closed.

Face and throat muscles: In about 15 percent of people with myasthenia gravis, the first symptoms involve face and throat muscles, which can cause:

- Altered speaking. Your speech may sound very soft or nasal, depending upon which muscles have been affected.
- Difficulty swallowing. You may choke very easily, which makes it difficult to eat, drink or take pills. In some cases, liquids you're trying to swallow may come out your nose.

- Problems chewing. The muscles used for chewing may wear out halfway through a meal, particularly if you've been eating something hard to chew, such as steak.
- Limited facial expressions. Your family members may comment that you've "lost your smile" if the muscles that control your facial expressions have been affected.

NECK AND LIMB MUSCLES:

Myasthenia gravis can cause weakness in your neck, arms and legs, but this usually happens along with muscle weakness in other parts of your body, such as your eyes, face or throat.

The disorder usually affects arms more often than legs. However, if it affects your legs, you may waddle when you walk. If your neck is weak, it may be hard to hold up your head.

Factors that can worsen myasthenia gravis

1. Fatigue
2. Illness
3. Stress
4. Some medications — such as beta blockers, quinidine gluconate, quinidine sulfate, quinine, phenytoin, certain anesthetics and some antibiotics
5. Pregnancy
6. Menstrual periods

Complications: Complications of myasthenia gravis are treatable, but some can be life-threatening.

MYASTHENIC CRISIS:

Myasthenic crisis is a life-threatening condition that occurs when the muscles that control breathing become too weak to do their jobs. Emergency treatment is needed to provide mechanical

assistance with breathing. Medications and blood-filtering therapies help people to again breathe on their own.

THYMUS GLAND TUMORS

Some people with myasthenia gravis have a tumor in their thymus gland, a gland under the breastbone that is involved with the immune system. Most of these tumors, called thymomas, aren't cancerous (malignant).

Other disorders

People with myasthenia gravis are more likely to have the following conditions:

- Underactive or overactive thyroid. The thyroid gland, which is in the neck, secretes hormones that regulate your metabolism. If your thyroid is underactive, you might have difficulties dealing with cold, weight gain and other issues. An overactive thyroid can cause difficulties dealing with heat, weight loss and other issues.
- Autoimmune conditions. People with myasthenia gravis might be more likely to have autoimmune conditions, such as rheumatoid arthritis or lupus.

DIAGNOSIS:

Neurological examination. This may consist of:

1. checking your reflexes
2. looking for muscle weakness
3. checking for muscle tone
4. making certain your eyes move properly
5. testing sensation in different areas of your body
6. testing motor functions, like touching your finger to your nose

Other:

- Ice pack test : A quick bedside technique for diagnosing MG. Patient with ptosis , a small cube of ice placed over the eyelid for about 2 minutes. Improvement in ptosis after this procedure suggests the disorder of neuromuscular transmission. Ptosis due to other conditions will not improve.Local cooling improves safety factors of NMJ possibly by slowing the kinetics of AChRs.
- Blood Test
- Single fiber electromyography: EMG measures the electrical activity travelling between brain and muscles. It detects impaired nerve-to-muscle transmission and measures the electrical potential of muscle cells when single muscle fibers are stimulated by electrical impulses. Muscle fibers in myasthenia gravis, as well as other neuromuscular disorders, do not respond as well to repeated electrical stimulation compared to muscles from normal people.
- Endrophonium test: The edrophonium test uses IV of edrophonium chloride to very briefly relieve weakness in people with myasthenia gravis. The drug blocks the degradation (breakdown) of acetylcholine and temporarily increases the levels of acetylcholine at the neuromuscular junction.
- Imaging : MRI and CT scan
- Pathological findings: Muscle biopsy performed if diagnosis remain in doubt.
- Pulmonary function testing measures breathing strength and helps to predict whether respiration may fail and lead to a myasthenic crisis.
- Other methods to confirm the diagnosis include a version of nerve conduction study, which tests for specific muscle "fatigue" by repetitive nerve stimulation. This test records weakening muscle responses when the nerves are repetitively stimulated by small pulses of electricity. Repetitive stimulation of a nerve during a nerve conduction study may demonstrate gradual decreases of the muscle action potential due to impaired nerve-to-muscle transmission.

Pathophysiology according to Ayurveda (Samprapti):

DHATUKSHAYJANYA VATPRAKOP VYADHI

HETUSEVAN

↓

VATPRAKOP

↓

RUKSHATA, PARUSHATA,KHARATA AR THE SITE OF STROTASAS

↓

DYSFUNCTION OF VAYU AT EMPTY STROTASAS

↓

DHATUKSHAYJANYA VATVYADHI

TREATMENT:

- Dhatukshayjanya vata prakop chikitsa
- Mansa kshay chikitsa
- Bruhan chikitsa
- Shramahar chikitsa

To treat MG we have to use the kalpas which have Vataghna and immunity boosting properties. The following kalpas can be used:

- Yograj guggul
- Mahavat vidhwansa
- Ekangvir rasa
- Panchamrutloha guggul
- Mihirodaya rasa

To treat immune dysregulation :

- Bruhat-vat chintamani ras
- Swarnasinduram
- Amalak ghruta
- Ashwagandha
- Brahmi

Externally:

- Abhyanga : Sahachar taila
- Basti : Rajyapan basti
- Nasya
- Pathya : Dugdha , Badam, Rason
- Apathya : Vataprakopak ahar , Excess intake of dry & cold food. Hectic lifestyle
- Rajyapan basti
- Yoga and Pranayam

PREVENTION:

MG cannot be prevented. However, a person can take steps to stop a flare-up of symptoms or prevent them from developing complications. These include practicing careful hygiene to avoid infections, and treating them promptly if they do occur. It is also advisable to avoid extreme temperatures and overexertion. Effective stress management can also reduce the frequency and severity of symptoms.

DISCUSSION:

Myasthenia Gravis is caused by a defect in the transmission of nerve impulses to muscles. It occurs when normal communication between the nerve and muscle is interrupted at the neuromuscular junction - the place where nerve cells connect with the muscles they control. Normally when impulses travel down the nerve, the nerve endings release a neurotransmitter substance called

acetylcholine. Acetylcholine travels through the neuromuscular junction and binds to acetylcholine receptors which are activated and generate a muscle contraction. From an Ayurvedic perspective, dysregulation of the immune function occurs on account of either Ojovyapat or Ojovisramsa, the derangement or displacement of Ojas resulting from inherent disposition, nutritional inadequacy, digestive or eliminative inefficiency, vitiation of the doshas with resulting tissue damage and metabolic disruption, unresolved psychological trauma or protracted somatic stress, or environmental or karmic factors, leading in the case of MG to Ojovruddhi, a quantitative increase in systemic Ojas of impaired quality. This process coincides with vitiation of one or more of the doshas (tridoshic vitiation is ordinarily encountered in MG), with the vitiated doshas admixing with deficient Ojas and Aam when present in one or more of the pranavaha, mamsavaha, meddavaha orajjavaha srotamsi, occluding the same and resulting in the malnourishment of their dependent tissues.

Symptoms include fluctuating weakness and fatigability of skeletal muscles, especially the ones innervated by the cranial nerves, and diplopia and muscle fatigability after exercise. Ocular muscles are affected at the onset in 40 percent of patients and will eventually be affected in 85 percent. Dysarthria, dysphagia, and proximal limb weakness are common. Changes in speech, nasal regurgitation with choking, and respiratory failure may be present. Symptoms flux in intensity over the course of hours or days. It is important to ascertain that MG is differentiated from certain forms of Celiac Disease. People who suffer from this condition need to make adequate life style changes to adjust to this problem. Psychological counseling is also central to helping the patient deal with this troubling disorder.

CONCLUSION:

Myasthenia Gravis (MG) is a neuromuscular disease characterized by increasingly severe fluctuating muscle weakness and fatigability. This weakness is brought about by an over-active immune response by the body against its own tissues; hence, it is termed an autoimmune diseases. The long-term outlook for MG depends on a lot of factors. Some people will only have mild symptoms. Others may eventually become confined to a wheelchair. Early and proper treatment can limit disease progression in many people.

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