

HEALTH IN OUR HANDS!

The Arkansas State University Wellness Program Newsletter
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Multiple Sclerosis

Overview

Multiple Sclerosis (MS) is an autoimmune disease in which the immune system attacks nerve fiber coverings called myelin. Myelin assists in the communication between the brain, spinal cord, and other regions in the body. When demyelination occurs, communication slows down and can cause many complications such as motor and speech deficits.

Signs and Symptoms

The following is a list of signs and symptoms associated with Multiple Sclerosis:

- Fatigue
 - Primary fatigue (lassitude) is a result of the demyelination of the nerve fiber
 - Secondary fatigue is brought on by other factors such as deconditioning, infections, and heat intolerance
- Weakness
- Paralysis
- Spasticity

- Ataxia or lack of muscle coordination
- Tremor
- Dizziness
- Vertigo
- Anesthesias or total loss of sensation in a region of the body
- Numbness and tingling
- Blurry or double vision
- Slurred speech
- Bladder and bowel dysfunction
- Sexual dysfunction
- Cognitive impairments such as verbal fluency and verbal memory
- Heat intolerance

Causes

Multiple sclerosis is an autoimmune disease. The immune system attacks myelin, the protective covering of nerve fibers which alters communication between the brain and the rest of the body.

Risk Factors

It is not clearly understood why some people acquire MS and others do not, but the following is a list of risk

factors associated with this disease.

- Women are 2 to 4 times as likely as men to be affected by MS.
- People between the ages of 20 to 50 years are at risk.
- People living further from the equator are at more risk than people living closer to the equator. This could be due to a lack of vitamin D.
- If an immediate family member such as parent or sibling has MS then there is a small chance of acquiring MS.
- A viral infection such as Epstein-Barr can trigger MS.
- Caucasians especially ones whose ancestors came for Northern Europe are at most risk than other ethnic groups such as Africans, Asians, and Hispanics.

Tests and diagnosis

Several test are used to help diagnosis MS. The following is a list of these tests:

- Blood test is used to help dismiss other immune diseases that have similar symptoms as MS.
- Magnetic resonance imaging (MRI) is used to recognize lesions on nerve fibers. Two or more lesions in different regions of the brain and spinal cord indicate MS. MRIs have improved the early diagnosis of MS.
- Cerebrospinal fluid (CSF) analysis is used to detect oligoclonal bands. These bands indicate the body's immune system is attacking itself. Since oligoclonal bands are associated with other immune diseases, further testing will be need to confirm the MS.
- Evoked potential test examines the nervous system's reaction to stimulation to sensory pathways such as visual, auditory, and vestibular. Visual evoked potential is most beneficial because optic nerve damage is one of the first symptoms noticed in MS.

Treatment

There is no cure for Multiple Sclerosis but there are ways to manage this disease. The following is a list of interventions for MS:

- Disease-modifying agents (DMAs) are drugs prescribed to decrease immune system malfunction. These drugs are expensive and tolerance to side-effects might be low.
- Anti-inflammatories, such as corticosteroids, are prescribed to help decrease an inflammatory response. Patients might experience side-effects such as weight gain and mood swings. These drugs will be less effective as the disease progresses.
- Baclofen (Lioresal) and tizanidine (Zanaflex) are medications used to help with spasticity.
- Medications such as amantadine (Symmetrel) and modafinil (Provigil) are prescribed for fatigue.
- Other medications are prescribed to assist with pain and other complications associated with MS.
- Physical, occupational, and speech therapy can be beneficial for patients with MS. Fatigue, pain, weakness, balance instability, bladder dysfunction, cognition impairments, gait dysfunctions, and difficulties with chewing and swallowing can all be addressed by the above therapy teams.

Helpful Tips

The following is a list of tips that might lessen symptoms of MS:

- Fatigue is a problem common in patients with MS. Patients should get an adequate amount of rest. One should plan rest periods throughout the day to help prevent fatigue.
- People with MS tend to easily over heat. Patients

can help keep core body temperatures down by staying in air-conditioned areas and drinking cold beverages.

- Exercise helps improve strength and endurance. When exercising it is important to remember not to over exert oneself because that can lead to fatigue and overheating.

References

- www.mayoclinic.com
- [Umphred's Neurological Rehabilitation Sixth Edition](#)
- [Physical Rehabilitation Fifth Edition by Susan B. O'Sullivan](#)

Other News:

The 2nd annual Shamrock Shuffle 2 mile fun run will be held on March 16, 2014 in Downtown Jonesboro. This event's proceeds go to the Beck Pride Center, whose mission is "To provide combat wounded veterans with first class educational programs and services at Arkansas State University." Preregister at Gearhead Outfitters or register on the day of the event. Registration is \$20 or \$25 with a dog entry. Registration will begin at 2:00PM, and the run will begin at 3:00PM.

**If you have any suggestions for newsletter topics, please contact Dean Susan Hanrahan at hanrahan@astate.edu.

The Arkansas State University Employee Wellness Newsletter is published monthly during the academic year by the College of Nursing and Health Professions. Health questions can be addressed to Dean Susan Hanrahan, Ph.D., ext. 3112 or hanrahan@astate.edu. Produced by Kayla James, graduate student in the College of Nursing and Health Professions, Physical Therapy Program.