

Summary of the January 9, 2011 Program

Diagnosis & Treatment Options of Post-Polio Syndrome

Speaker: Prathima Reddy, MD (Physical Medicine & Rehabilitation)

Prathima Reddy, MD is a doctor specializing in Physical Medicine and Rehabilitation (PMR) presently practicing in Gainesville, Florida at Interventional Medical Associates, LLC. She graduated from Wayne State School of Medicine in Detroit, Michigan and completed residency and postgraduate training in PMR in 1998. She came to Ocala, Florida in 1998 and joined Ocala Orthopedic Group where she practiced until 2010. She has recently relocated to Gainesville with her present practice focusing on acute and chronic pain management, Electrodiagnostic medicine (EMG and NCV) and treatment of neuromuscular disorders.

She is Board Certified in Physical Medicine and Rehabilitation and is also Board Certified in Electrodiagnostic Medicine (EMG and NVC studies). This type of testing is used to diagnose peripheral, spinal and neuromuscular disorders and can be utilized in the evaluation of patients with post polio syndrome. Dr. Reddy is one of the physicians available in the North Central Florida to diagnose and treat post polio syndrome.

Poliomyelitis is a disease caused by infection with poliovirus. It was a worldwide epidemic until the development of the polio vaccine in the 1950's. People infected with the polio virus can have the nonparalytic or paralytic form of poliomyelitis which affects the brain and the anterior horn cells of the spinal cord. Although only 1% of patients develop paralysis many can have milder degrees of weakness. Patients can have weakness of the respiratory and swallowing muscles in addition to the muscles of the limbs and spine sparing the sensation portion of the nervous system.

Post polio syndrome was recognized first in the 19th century, with Halstead and Rossi formulating criteria that can be used to establish a diagnosis of post polio syndrome. The criteria include a history of paralytic polio with partial or fairly complete neurologic and functional recovery. This is followed by 15 years or longer period of neurologic and functional stability. Symptoms include fatigue, new onset weakness with muscle fatigability. In individuals without polio or PPS, the functional consequences of aging and loss of motor units may be unnoticeable. In the individual with PPS, any further loss of strength may be more readily apparent. Symptoms can also include muscle or joint pain, cold intolerance and new atrophy of muscles. Patients can have overuse of weak muscles, abnormal muscle fatigue with delayed recovery after use. Muscle pain (myalgia) and joint pain (arthralgia) can result from chronic stress on weight bearing joints, ligaments and tendons in weak limbs. There can be progression of scoliosis that can contribute to pain. These factors can lead to limitation of physical activity, which can result in disuse weakness and atrophy contributing to further decline in functional activity. This can be addressed with modified exercise that avoids muscle fatigue, bracing and mobility aids and adaptive equipment to avoid joint stress combined with adequate nutrition and rest to allow recovery with the goal of optimizing function to maintain as much independence with activities of daily living.

Diagnosis of post polio syndrome is primarily made, given the history and clinical exam findings to exclude other treatable medical conditions. Diagnostic testing such as MRI or CT scan, laboratory and EMG/NCV studies can be used in conjunction with clinical findings to evaluate patients with post polio syndrome. Pulmonary function testing (PFTs) can be used to evaluate patients with respiratory involvement with polio, or those individuals who develop breathing and pulmonary difficulties associated with scoliosis. Studies to evaluate dysphasia (swallowing difficulties) and sleep studies for suspected sleep apnea can be used to evaluate patients with involvement of bulbar muscles.

Treatment of PPS is supportive and can involve lifestyle changes. Nutrition and balanced diet to maintain normal BMI index is important. Exercise that is targeted to increase cardiopulmonary conditioning to avoid muscle fatigue, that is done initially monitored and supervised. The exercise prescription should consider the patient's co-morbid medical conditions, current fitness level and grade of muscle and limb weakness. Cardiopulmonary exercise coupled with the pacing of activities to allow for frequent breaks and strategies to conserve energy. Aquatic based exercises can be helpful for those having pain from spinal or joint related problems. Gentle strengthening of muscles not affected by polio or that have minimal weakness, paced to avoid fatigue initially supervised can be done with goal of improving function and physical conditioning. Heavy or intense resistive exercise and weight training using polio affected muscles that are weak or have moderate atrophy can be counterproductive.

Postural exercises to maintain spinal muscle strength to keep the spine in neutral position. Deep breathing exercises should be incorporated with the exercise program. Inability to stand erect causing forward flexion of the trunk when standing can be a result of weakness of the trunk extensor muscles that play an essential role to maintain upright posture. Postural problems of the spine can be a result of prior instrumentation of the spine for scoliosis, vertebral fracture or degenerative spinal arthritis that can cause stenosis. Spinal and joint related painful conditions need to be evaluated and treated so as not to contribute to functional loss from post polio syndrome.

Braces or orthotics that support weak limbs should be considered to assist with ambulation and protect from overuse injuries of weight bearing joints and to assist with self care.

Treating patients with post polio syndrome takes team effort with initial evaluation by a physician trained in this area. A Board Certified Physical Medicine Rehabilitation Physician (Physiatrist) is trained in evaluating disorders of the musculoskeletal and neuromuscular system. Coordinated management with Physical, Occupational and Speech therapy, nutritionist, and orthotic specialists should be considered and customized to the patient's impairment to optimize physical function and health.