Cerebral Palsy

WHAT IS CEREBRAL PALSY?

Cerebral palsy defines a group of chronic conditions affecting motion of the body, muscle strength, balance and coordination and is caused by damage to one or more areas in the brain that control the movement of muscles. The onset of the disease generally occurs before birth, but may also develop during or shortly after birth or during infancy. Juvenile cerebral palsy affects approximately two to three children out of every 1,000 over the age of three.[1]

Children with cerebral palsy are unable to fully control their motor functions. Symptoms of cerebral palsy can range from mild to severe. Depending on the area of the brain affected, symptoms may include muscle tightness or spasticity, muscle weakness or floppiness, involuntary movements, and gait or mobility disturbances. The muscles of speech, swallowing and breathing may also be affected. Cerebral palsy is not a progressive condition, but some problems that may develop as a result of cerebral palsy, such as muscle spasticity, may fluctuate or become steadily worse over time.

There are three major types of cerebral palsy. Between 70 per cent and 80 per cent of affected individuals have spastic cerebral palsy, in which the muscles are unable to relax and remain so stiff and tight that movement is extremely difficult.[1] If the hip and leg muscles are affected (spastic diplegia), a child may have difficulty walking. Sometimes one side of the body is affected, but not the other (spastic hemiplegia). In the most serious cases, all four limbs and the trunk of the body may be affected (spastic quadriplegia). Between 10 per cent and 20 per cent of patients have dyskinetic cerebral palsy, which affects the entire body.[1] It is characterized by fluctuations in muscle tone and is sometimes associated with uncontrolled movements (i.e. slow and writhing, or rapid and jerky). Between five per cent and 10 per cent of affected individuals have ataxic cerebral palsy, which affects balance and coordination.[1]

WHAT CAUSES CEREBRAL PALSY?

Cerebral palsy is most often the result of prenatal injury to the brain that may be caused by such problems as infections during pregnancy, insufficient oxygen to the fetus, prematurity, complications during labour and delivery, Rh disease, or other birth defects.[1] In a smaller number of cases, problems may occur at the time of delivery, or in the first months or years of life as a result of brain infections (i.e. bacterial meningitis or viral encephalitis) or traumatic brain injury. In many cases, however, the cause of cerebral palsy in a child is not known.

HOW IS CEREBRAL PALSY TREATED?

There is no cure for cerebral palsy, but early intervention with physical therapy and other treatments can significantly improve a child's ability to function and develop to his or her maximum potential. Effective management of the condition always necessitates a highly individualized, multi-disciplinary approach carried out by a coordinated team of medical specialists that may include neurologists, pediatric neurologists, pediatric specialists, orthopaedic surgeons and physiatrists (doctors specializing in physical rehabilitation), as well as various support services.

Physical therapy is usually begun soon after diagnosis to improve motor skills, increase muscle strength and prevent contractures (shortening of muscles that limits joint movement). Oral medications (i.e. muscle relaxants to ease muscle stiffness) may be given to reduce spasticity for short periods.

In more serious cases, surgery may be recommended to lengthen tendons and muscles where contractures have developed. For some children with spasticity affecting both legs, surgery to severe overactive nerves that cause spasticity may be performed to permanently reduce spasticity.[1]

BOTOX® (botulinum toxin type A) injection was approved by Health Canada in 1999 for the treatment of dynamic equines foot deformity due to spasticity in pediatric cerebral palsy patients over the age of two.[2] BOTOX® therapy involves the injection of therapeutic doses of purified botulinum toxin protein directly into the affected muscles. Derived from the bacterium *Clostridium botulinum*, BOTOX® therapy inhibits the release of a neurotransmitter, acetylcholine, from nerve cells, blocking the signals that promote involuntary muscle contractions. The effect is temporary and the treatment needs to be re-administered approximately every three to four months depending on the individual patient. Patients should speak to a physician to fully understand their treatment options.

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REFERENCES:

1 March of Dimes. Cerebral Palsy. Available at http://www.marchofdimes.com/pnhec/4439_1208.asp. Accessed February 2010.
2 BOTOX® Canadian Product Monograph. Allergan Canada. 2008.