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MLA

Save the Children:

Is Cerebral Palsy Caused By Prematurity?

According to Morena-De-Luca, cerebral palsy (CP) is the “most common physical disability of childhood”. CP is a group of disorders that can involve brain and nervous system functions such as movement, learning, hearing, seeing and thinking, and it is caused by injuries or abnormalities of the brain (Hoch). Most of the complications that lead to CP occur while a baby is still in the womb, but they can also arise any time during the first two years of life when the child’s brain is developing. Premature infants have a higher risk of getting CP because they are usually born before their brain is fully developed. Premature infants also have a higher risk of infection which can lead to CP. There are many different types of CP and variable symptoms which can make it hard to diagnose, but the prognosis is good and there are many studies being done to find more concrete causes and a cure. The best way to stop CP is by taking preventative measures for the mother and the baby in order to prevent premature birth.

There are many different types of CP including spastic, dyskinetic, ataxic, hypotonic and mixed (Hoch). The types of CP can be split into two affected groups; motor function and muscle tone. Motor function is the ability to control the body and can be further described as spastic motor function, increased muscle tone, or non-spastic motor function, decreased muscle tone. Muscle tone is how well muscles work together and can further be described as hypertonic, increased muscle tone, or hypotonic, decreased muscle tone. Spastic CP involves increased muscle tone where muscles continuously contract making limbs stiff and rigid. Usually the arms and legs are affected but the tongue, mouth and pharynx can also be affected which can impair important functions such as speech, eating and breathing. On the other hand, hypotonic CP involves decreased muscle tone which results in loose limbs that can appear floppy. Hypotonic CP is associated with non-spastic CP. Dyskinetic is a form of non-spastic CP which is associated with involuntary movements that are repetitive and can be rhythmic or jerky. Ataxia is also a form of non-spastic CP that affects coordinated movements such as balance, walking, eye movements and writing. Mixed CP is less common and consists of a combination of the above types.

The symptoms of CP can vary as widely as the types. Symptoms include variations in muscle tone, lack of muscle coordination, tremors, writhing movement, favoring one side of the body, difficulty with fine motor skills, excessive drooling, and difficulty walking, swallowing, eating or speaking (Mayo). A patient can have any variety of these symptoms and each symptom can also differ in intensity depending on the person. Some children with CP can have delays in major milestones. For example, if a child is more than two months old and has difficulty controlling their head when picked up or if a child is more than twelve months and cannot crawl or stand by themselves, that could be a sign of CP because it means their muscles are not working correctly (Birth Defects). A patient could have decreased intelligence or learning disabilities but their intelligence could also be normal; again, it depends on the person and the intensity of the CP (Hoch).

There are a number of risk factors that can lead to CP but the most prominent cause is premature birth. Many different factors can affect the mother or directly affect the baby to cause premature birth. One cause is infection. When an expecting mother gets an infection, it can be very detrimental to the baby. As stated by Boksa, “studies with human populations indicate associations between maternal infection during pregnancy and increased risk in offspring for central nervous system (CNS) disorders including schizophrenia, autism and cerebral palsy”. Infections in the mother like measles, chickenpox and syphilis affect the way a baby develops so they may be born prematurely but even if they are born full term, they could still develop CP because their brain might be underdeveloped. A second cause is the intake of hazardous substances. The ingestion of alcohol or drugs and exposure to toxins like mercury can be harmful to the baby’s development and lead to premature birth. This is why expecting mothers have to take special care to stay healthy and avoid these toxic substances. A third cause could stem from the general health of the mother. Any factors that could cause stress to the mother, and therefore the baby, could lead to premature birth like high blood pressure, obesity, diabetes or reproductive abnormalities. It is extremely important for expecting mothers to visit the doctor regularly so these things can be prevented therefore preventing premature birth and CP. According to Zhang, women who “had a balanced diet and had a record of prenatal care were less likely to have preterm birth”. A fourth cause is the birth of multiple babies, such as twins or triplets. Lee reports that “about 15 percent of all premature births are multiple pregnancies”. Since multiple babies are more likely to be born prematurely so they have a higher risk of developing CP than a single baby. Other causes that can occur immediately after birth include bleeding in the brain, head injury and severe jaundice (Hoch). In some more unfortunate cases the cause of CP is unknown and this is especially true if there were no warning signs. After the baby is brought home, an incidence of traumatic brain injury could also cause CP but this reason is not as common.

There have been a few studies done to try to determine the cause of CP. For instance, one study done was trying to determine if medications like aspirin and NSAID’s could cause cerebral brain damage or cerebral palsy in preterm infants. The study included 877 preterm infants and all were assessed for CP symptoms. The results showed that the risk of CP was elevated among infants of mothers who consumed aspirin and NSAID’s (Tyler). Another study done in Norway was trying to determine the number risk factors a CP versus a non-CP baby had. This study included 176,591 infants and 241 children developed CP. 31% of term infants were found to have no risk factors while only 9% of preterm infants had no risk factors. The results showed that the majority of children born preterm had many antenatal and perinatal risk factors that could likely cause CP (Stoknes). Overall, these studies show that premature infants have a greater risk of developing CP and that over the counter pain medications can have a greater effect on a baby than people might think. The March of Dimes and other organizations are continuously funding research on how to prevent premature birth and birth defects like CP. Currently the March of Dimes is funding research at the University of Michigan where they are studying the causes of hemiplegic CP in order to develop a drug to treat or cure it (Birth Defects). This type of research is very important and could change thousands of lives.

Diagnosing CP can be difficult because of the varying symptoms. First the doctor would take a medical history of the family to see if CP was a common disorder. Then the doctor would evaluate how the baby or child moves. The doctor observes the muscle tone and reflexes of the child to check for stiffness or floppiness. The doctor may suggest brain imaging tests such as an MRI or a CT scan in order to find the cause of CP. Blood tests would also be done to rule out any other conditions that could be causing symptoms similar to CP. If a patient is diagnosed with CP they will often be referred to other doctors to deal with conditions that are associated with CP like vision, hearing or speech impairments (Mayo).

Nonetheless, the prognosis for CP is good. Most people will need long term care and a team of medical practitioners to help. The head of the team is a pediatrician or physiatrist that can oversee the patient’s treatment plan. It is important that CP patients have an occupational therapist and/or developmental therapist to help them develop everyday motor skills and social skills. A CP patient could also need glasses, hearing aids, walking aids or wheelchairs to help with daily activities. They may also need a special education teacher that could address any learning disabilities. An orthopedist could also be helpful to treat any muscle or bone disorders that could be caused by the CP. In addition, there are some medications that could be helpful to CP patients. According to Papavasiliou, medications like Botox and a lesser known one called Baclofen, can be used to lessen muscle tightness, reduce spasticity and may also be “alternatives or supplements to orthopedic surgery”. This would help improve functionality and could greatly improve the life of a CP patient.

Preventing CP is the easiest way to make sure it doesn’t happen. One way is to make sure the mother is vaccinated. Vaccines against diseases like rubella will ensure that the mother doesn’t get an infection that could lead to brain damage in the fetus. Second, the mother has to make sure to get proper care while pregnant, including prenatal vitamins and regular doctor visits. That way the doctor will know the risk factors of the mother and the baby and can take preemptive steps to stop premature birth if needed. Finally, to prevent CP caregivers should be prudent and practice good child safety techniques to take care to prevent head injuries (Mayo). Following these preventative measures should greatly reduce the risk of CP.

In conclusion, cerebral palsy is a terrible disease and it affects far too many children all over the world. The varying types of CP and its many symptoms make it extremely hard to diagnose but fortunately, the prognosis is good. With the help of a team of therapists and doctors, a CP patient can live a pretty normal life. The main cause of CP is premature birth and the main way to prevent the disease is by preventing premature birth. If expecting mothers take proper care during their pregnancy, the risk of premature birth is greatly reduced.

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