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Opinion

# Implications of Oral Health in Cerebral-Palsy PTS

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Cerebral palsy (CP) is a disease characterized by posture, motor and movement disorders, which are caused by non-progressive but permanent damage of the fetal or infant brain in the early stages of life. In addition to posture disorders, abnormal motion patterns, spasticity and weakness, vision and hearing problems, epilepsy, cognitive function disorders may be accompanied. While CP is seen in an average of 2-2.5/1000 live births. Around the world the high prevalence is related with excess prevalence of consanguineous marriage, excessive infectious and febrile illnesses, inadequacy of nutrition in infants, negativity in birth conditions, inadequate baby care and diseases during pregnancy. While the underlying etiological factors can be demonstrated in approximately half of the cases, risk factor cannot be determined in approximately one third. While prenatal causes are held responsible in almost 70 - 80% of patients multiple pregnancies, intrauterine infections, cervical insufficiency, placenta anomalies, bleeding, intravenous clotting, pregnancy toxication, hyperthyroidism, drug use, iodine deficiency, genetic, hypertension, mental retardation, metabolic and hormonal diseases such as epilepsy and diabetes mellitus, perinatal causes in 10 - 20% placenta infarction, vaginal bleeding, asphyxia, prematurity, placenta previa, low birth weight, chorioamnionitis, cord wandering, abnormal presentation, early membrane rupture, low score by APGAR scoring system scoring by evaluating the appearance of newborn, heart rate, reflex response, tonus, respiration and postnatal causes encephalopathies, polycythemia, hypoglycemia, CNS infection, intracranial bleeding, coagulopathy, convulsions, hyperbilirubinemia in 10% of patients are held responsible. Tonus disorder in CP is at the forefront. According to the type of tonus disorder, CP can be classified as spastic, ataxic, dyskinetic and mixed types. Almost three quarters of cases are spastic types. It is characterized by increased muscle tone in the rapid angular movement of the joint in the extremity affected by first motor neuron damage. This May cause problems such as impaired posture, limitation of movement, difficulty in coordination, joint contracture and deformity. Balance disorder and tremor are at the forefront in the ataxic type. It occurs as a result of damage to the cerebellum. It has an unbalanced walking pattern with wide gait surface and swinging. Explosive speech can be seen. Ataxia cannot be diagnosed until the patient starts to walk. The only symptom is hypotonia before starting to walk. It contains approximately 5% to 10% of patients with CP and usually affects all extremities and trunk. Dyskinetic type CP is the form of athetoid, choreic and choreoathetoid movements. Dystonia can also be seen. While the cases are usually hypotonic at birth, findings of the extrapyramidal system are characterized by hypotonia and hypertonia in which they are seen in fluctuations. There are swings, curls and shake movements in extremities. Dysarthric type speech disorder may occur. Extra pyramidal movements are reflected in the tongue of the worm, in these patients, the difficulty of swallowing, salivation problem, speech disorder, and oral-motor dyskinesia are seen as severe. The mixed type contains spastic, dyskinetic and ataxic form of CP. Approximately 10% of cases are this type. It takes place with the involvement of both pyramidal and extra pyramidal system. CP can also be classified according to affected extremity. When one half of the body is affected, mentioned as hemiplegic, monoplegic when a single extremity is affected, diplegic when lower extremities are affected,

tetraplegic/quadriplegic CP when both the upper and lower extremities are affected together. Additional problems can be seen in CP. Mental retardation is one of them. As loss of motor function increases, mental retardation increases. Dyskinetic and hemiplegic types are at least affected by mental retardation, while 70% of the quadriplegic type CP have mental retardation. Mental retardation with epilepsy is thought to be related. The frequency of epilepsy in all children is 2-12/1000, while in spastic tetraplegic individuals, the frequency is 42 - 94% and seizures are the generalized tonic clonus type. In hemiplegic individuals, the frequency is 30 - 65% and seizures are focal types. Dyskinetic type CP is at least risky in terms of epilepsy. Epilepsy treatment in children with CP is very difficult and combined drug use is required. In 42 - 81% of CP cases, speech disorders such as difficulty in speech and sound producing such as dysarthria or aphasia are seen. There is no conversation in cases of tetra plegic cases with mental retardation. Oral problems are more in this group. Difficulties in carrying out related actions due to insufficient muscles providing suction, swallowing and chewing can be encountered. Vision problems are 28 - 90% in children with CP. While vision defects and strabismus are most common blindness, glaucoma, nystagmus can also be seen. Hearing loss can be seen in 12%. Hearing loss can be prevented by routine controls. Speech disorder is seen in 38% of children with CP. Inclusion of inter costal muscles, tongue muscles and larynx muscles cause the situation. Apnea, bronchitis, asthma, atelectasis, pneumonia may occur due to aspiration. It is very important because aspiration is cause of mortality and morbidity. Children with CP cannot get enough nutrients for reasons such as suction, chewing and swallowing disorders, loss of appetite, rejection of food and prolonged food time. Nutritional failure is associated with mortality and morbidity. GIS problems are seen in 80 - 90% of children with CP. One of the most common GIS problems is gastroesophageal reflux (GER). It causes discomfort, restless ness, irritability, vomiting, esophagitis and aspiration pneumonia in children. Aspiration, GER and constipation may cause the child to reduce the interest of food and reject food. Children with ataxic and spastic dyskinetic type CP can be fed to themselves, while children with spastic tetraplegic and dyskinetic type CP cannot feed on themselves due to severity of motor functional disorder. Due to difficulty of chewing and swallowing, eating time causes malnutrition. Leading to important problems such as retardation in growth development, deterioration of immune system, delay of wound healing and weakness. While parents of normal children spend average of 0.8 hours a day to feed the children, the parents of CPs spend 3.5-7.5 hours. Natural gagging and cough reflexes may have never developed in individuals with CP. The absence of reflexes may cause irritation and inflammation in respiratory tract. Sometimes the reflexes may become severe enough to reject food intake during consumption of foods. In children with CP, distress in making the food into a bolus (soft, chewed food mass) is due to chewing problems of insufficient tongue and side jaw movements. In particular, limitation of the temporo- mandibular joint (TMJ) movement in spastic tetraplegic CP causes the chewing problem to become even more severe. Neuro muscular problems due to CP affect oral health negatively. In addition to orofacial problems, influence of the extremities prevents the independence of individual affected in many areas from provision of oral hygiene to nutrition al failure. As the intensity of disease increases, oral problems also increase. Sialorrhea, dental caries, periodontal disease, bruxism, malocclusions, dental erosion, traumatic dental injuries, enamel defects, temporomandibular joint disorders and delay in dental eruption are among the most frequent oral health problems in CP patients. Some studies show that oral-dental health is not different from healthy children as a result of appropriate oral care in children with CP, while in some studies, when there is no oral hygiene motivation, it has been shown that oral-dental health is significantly affected.

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