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Need proper policies to prevent Meningocele

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Proper intake of nutritious food and undertaking diagnostic tests during pregnancy can help prevent neuro disorders in newborns

The most common birth defect in India is neural tube defects, which not many of us are aware about. In the absence of primary care and prevailing associated social stigma, many patients with neural tube defects (NTDs) from remote areas die without getting any treatment.

The high number of untreated cases and unregistered deaths in these areas made us ponder over the fact that tertiary care centre-based studies do not represent the true incidence of NTDs. *(Source: www.ncbi.nlm.nih.gov).* A recent population study from Eastern UP in India estimated the incidence of neural tube defects to be 7.48 per 1000 live births. Of these, the relative frequency of occurrence of Meningocoele was 32 per cent making it the second most common neural tube defect in India.

According to various reports, in India, the incidence of Meningocele is two per thousand live births, which is far more than 0.4 per thousand in developed countries. In terms of sheer numbers, data suggests about 1.3 lakh Meningocele cases in India every year.

The disease

Meningocele, also known as spina bifida, is a common congenital birth defect where a sac protrudes from the spinal column in newborns. The sac contains spinal fluid but lacks neural tissue. The major symptoms are the presence of swelling at the back along the spine. Evident immediately after birth, there may be a discharge of clear watery fluid from the swelling. Some neonates may present with a large head known as Hydrocephalus or weakness in the legs, bowel and bladder incontinence.

Meningocele is commonly discovered during prenatal screening and are often associated with poor prenatal care and are apparent at the time of birth. Meningocele is pushed out through the defect, causing a fluid-filled sac to form. The meninges are three layers of membranes covering the spinal cord, consisting of dura mater, arachnoid mater and pia mater. In most

cases, the spinal cord and the nerves themselves are normal or not severely affected. Most of the patients are neurologically intact.

Dr Venkatramana, Senior Consultant – Neurosurgery, Cytecare, Bengaluru says, “If there is a child in the family suffering from Meningocele, the risk of the disease occurrence is about five times higher for the siblings. The statistics are disconcerting. However, over the last few years, the incidence has significantly reduced due to greater adoption of prenatal diagnosis and regular ultrasound screenings, including the anomaly scan, of pregnant women. Unfortunately, the access to these diagnostic facilities is currently limited to the metro cities.”

Prevention

With the advent of proper screening of expectant mothers during pregnancy, neural defects can easily come across. Certain diagnostic tests are performed during pregnancy to detect spina bifida before a baby is born. Blood tests performed between 15 and 20 weeks can reveal if the foetus is at risk of a neural tube defect. Apart from this, a prenatal ultrasound will help to takes images of the foetus’ tissues. Doctors in some cases perform amniocentesis tests a small amount of amniotic fluid is tested. This test can most accurately diagnose the presence of a neural tube defect.

Doctors recommend intake of ceratin amount of folic acids to help prevent the disease.

Dr Raj Agarbattiwala, Consultant Neurosurgeon, Stroke Specialist & Neurointerventionist, Masina Hospital, Mumbai says, “Women who are planning pregnancy, and women who may become pregnant, are recommended to consume 400 mcg of folate daily in most countries, particularly developing countries.

Dr Gurneet Singh Sawhney, Senior Consultant – Neurosurgery, Fortis Hospital, Mulund (Mumbai), “The key to prevent this disease is to take 400 mcg of Folic acid daily during pregnancy. Rest is to control diabetes or obesity before pregnancy, avoid overheating your body and treat fever immediately while pregnant.”

Cytecare Institute of Neurosciences in collaboration with BRAINS Hospitals is currently working with the Karnataka Government to create a sustainable healthcare programme for pregnant women, with a special focus on the regular intake of folic acid.

Data from a 2012 study, funded by the National Institutes of Health’s Eunice Kennedy Shriver National Institute of Child Health and Human Development, shows that prenatal surgery reduced the need to drain fluid from the brain and improved morbidity. Although the surgery poses some risks to the foetus and the mother, the benefits are promising.

Tech innovations

Foetal surgery has been advocated recently for patients diagnosed in utero before 26 weeks of pregnancy. Foetal surgery before 26 week’s gestation has been performed to reduce the development of Arnold-Chiari malformations and eventually hydrocephalus. With modern equipment and technology, even fetoscopy is becoming increasingly popular for the treatment of meningocele.

The technological innovations for diagnosis before childbirth are Alpha Feto Protein (AFP) measurement in mother’s blood, ultrasonography for the Meningocele Sac and Amniocentesis- a small sample of the amniotic fluid to check for AFP. According to Dr Sawhney for treatment, an endoscopic endonasal approach where the skull-based Meningocele is treated via the nasal route and minimally invasive spine surgery for lower Spinal Meningocele.

Dr Priyamvadha, Consultant – Neurosurgery and Spine Surgery, Manipal Hospitals, Whitefield (Bengaluru), says, “The standard treatment of meningocele involves excision and repair of the meningocele within 24 to 48 hours of birth. These days some select centres in the world are offering Foetal Meningocoele repair. This involves closing the spinal defect during pregnancy at 19-26 weeks gestation. Foetal surgery is an attempt to prevent further intrauterine damage to the spinal cord.”

Contribution from the pharma sector

With folic acid supplements playing a key role in the prevention of meningocele, efforts have been undertaken towards the fortification of folic acid with cereal grains. Pharma companies have been organising seminars to create awareness for folic acid supplements in child-bearing women for the prevention of meningocele.

According to Dr Venkatramana, while pharma companies do not have much of a role to play in preventing Meningocele, they can certainly help in tackling this healthcare challenge by ensuring adequate drug production and its easy availability across the country.

The way forward

Proper diagnosis with the right intake of folic acid during pregnancy is the key to avoid meningocele. Complete surgical closure of the sac within 12-24 hours of birth can cure the condition completely.

According to experts, India needs to incorporate this as part of its national and state health policies so that we can eradicate the disease.

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