

## **ULTRASONOGRAPHIC MANIFESTATIONS OF HYPOXIC ISCHAEMIC BRAIN DAMAGE (HIBD) IN PRETERM NEONATES AT TEACHING HOSPITAL PERADENIYA**

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Germinal Matrix Haemorrhage (GMH) and Periventricular Leukomalacia (PVL) are two common types of brain injuries seen in preterm neonates for which cerebral hypoxia and ischaemia are the major contributory factors. The aim of this study was to determine the type and grade of GMH and PVL on cranial ultrasonography with a view to predicting the neuro-developmental outcome.

This is a descriptive study. Two hundred and sixty four preterm neonates between 28-34 weeks of gestation with risk factors and clinical features of brain injuries admitted to Special Care Baby Unit (SBU), Teaching Hospital Peradeniya from January 2013 were included in the study. Neonates with congenital anomalies, traumatic birth injuries, hypoglycaemia and bleeding disorders were excluded. Cranial ultrasound scans were done by the principal investigator and two Consultant Radiologists using a dedicated neonatal head probe 4-10 MHz of Logic e portable ultrasound scanner. Measurements of lesions and ventricles were documented. A series of ultrasound scans were done for all the neonates, within the first 3 days of life, on day 7 and thereafter once a week until one month of age. Clinical history of seizures, abnormal head growth (microcephaly or hydrocephalus) and developmental milestones were assessed and neurological examination was done monthly for all babies till the age of 6 months. Monthly ultrasound scans were done for neonates who had GMH and PVL. Informed written consent was obtained from the parents of the neonates. The results were analyzed using SPSS version 14.

GMH was seen in 76 (75%) neonates. PVL was seen only in 11 (11%) neonates. A combination of GMH and PVL was detected in 10 (10%) neonates. All the neonates with Grade 1V GMH succumbed. Among the live neonates 1 out of 3 with Grade 111 GMH had gross motor developmental delay and all the neonates (2) with Grade 3 PVL had cerebral palsy with visual and hearing impairment. Neonates with Grade 1 and 11 GMH and Grade 1 and 2 PVL did not manifest any neurological defects till 6 months of age.

When considering brain injuries of preterm neonates, Grades 111 and 1V GMH and Grade 3 PVL may have poor outcomes while Grades 1 and 11 GMH and Grades 1 and 2 PVL may have a good prognosis.