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Linear growth and neurobehavioral outcome in preterm neonates (<34 weeks) at 37 weeks and 40 weeks of corrected gestational age: A prospective observational study

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Abstract

Background: American Academy of Pediatrics (AAP) recommends that preterm should achieve rates of growth similar to those of the fetus in utero at the equivalent gestational age but this guideline has been mostly applied to weight gain. Linear growth represents lean body mass & protein accretion and reflects fat free mass (FFM) accretion. Linear growth closely indexes organ growth and development especially of the brain. Length can be used for predicting neurodevelopmental status of a growing preterm neonate.

Design/Methods: This was a prospective observational study conducted from January 2015 to December 2016. All neonates with gestational age <34 weeks at birth who were hemodyanamically stable at 48 hour of life were included and followed till 40 weeks of life. Standardized Z-scores were calculated for the length using reference data which included Fenton curves at birth, hospital discharge, 37 weeks and 40 weeks of CGA. They were assessed by Neurobehavioral Assessment of Preterm Infants (NAPI) score at 37 and 40 weeks of CGA.

Results: l age and birth weight of 32.22±0.94 weeks and 1542.78+214.87 grams respectively whereas mean gestational age and birth weight in group 2(62 neonates) with extra uterine length increase <1cm/week were 31.81±1.5 weeks and 1435.52 +278.54grams respectively. After controlling for gestational age, weight Z scores and head circumference Z scores NAPI-MDV (motor development vigor) at 37 weeks and NAPI-AO(alertness orientation) at 40 weeks were positively related to length Z score at 37 weeks (p=0.04) and length Z scores at 40 weeks (p=0.035) respectively.

Biography:

Sandeep Jhajra studied at B.J Medical College Ahmedabad, Gujarat and graduated in MD Peadiatrics in 2011. He then joined Sir Gangaram Hospital as fellow in Neonatology and cleared his exam in year 2014. He then joined Lady Hardinge Medical College in 2014 and received his DM Neonatology Degree in year 2017.

Speaker Publications:

1. "Congenital pseudoarthrosis of clavicle: A rare diagnosis in neonate"; Vol 5, 2018.

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