6th World Summit on
Neonatology, Pediatrics and Developmental Medicine
April 29-30, 2025
Webinar

Clin Pediatr 2025, Volume 10

Comparison of predictive ability of hammersmith neonatal neurological examination in preterm neonates at 34 weeks vs term equivalent age – a prospective observational study

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Statement of the problem: In resource limited settings, preterms are most often discharged before they reach the recommended age for HNNE. Thus, performing before the recommended age ensures that all babies have a preliminary assessment before discharge, and thus, intervention programs can be started earlier if at risk infants are identified, and also for further close monitoring. The purpose of this study is to evaluate the diagnostic accuracy of early Hammersmith Neonatal Neurological examination at 34 weeks in comparison to the regular examination at Term equivalent age, if proven, can open a window for early intervention.

Methodology: A prospective observational study done for preterm neonates between 28-32 weeks, who were examined at 34 weeks and Term Equivalent with HNNE, optimality scores were derived and compared its efficacy in prediction of neurological outcome at 6 months of chronological age with HINE.

Results: Our study showed that the predictive ability of HNNE optimal score performed early for HINE category through ROC curve showed an AUC of 0.57(SE: 0.07;95% CI=0.42-0.71; p= 0.34) vs HNNE optimal score term equivalent age for HINE category through ROC curve showed an AUC of 0.72 (SE: 0.06; 95% CI=0.60-0.84; p= 0.003).

Conclusion and significance: This study shows that HNNE done early i.e., at 34 weeks, before or at discharge time of the baby has moderate predictive accuracy in comparison to TEA HNNE, in relation to the HINE scores at 6 months of age of our cohort. This study also presents the longitudinal data of HNNE optimality scores of a preterm in this population. This also gives early HINE data for this cohort, which can guide for further research.